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#1

SELLING CAMERA
GUIDE AUTHOR

David Busch's COMPACT FIELD GUIDE

FOR THE
CANON® EOS 60D



OVER
1 MILLION
BOOKS
IN PRINT

David D. Busch

DAVID BUSCH'S COMPACT FIELD GUIDE FOR THE

CANON[®] EOS 60D

David D. Busch

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Canon® EOS 60D
David D. Busch**

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Introduction

Throw away your cheat-sheets and command cards! Are you tired of squinting at tiny color-coded tables on fold-out camera cards? Do you wish you had the most essential information extracted from my comprehensive *David Busch's Canon EOS 60D Guide to Digital SLR Photography* in a size you could tuck away in your camera bag? I've condensed the basic reference material you need in this handy, lay-flat book, *David Busch's Compact Field Guide for the Canon EOS 60D*. In it, you'll find the explanations of *why* to use each setting and option—information that is missing from the cheat-sheets and the book packaged with the camera. You *won't* find the generic information that pads out the other compact guides. I think you'll want to have both this reference and my full-sized guide—one to help you set up and use your Canon 60D, and the other to savor as you master the full range of things this great camera can do.

About the Author

With more than a million books in print, **David D. Busch** is the world's #1 selling digital camera guide author, and the originator of popular digital photography series like *David Busch's Pro Secrets*, *David Busch's Quick Snap Guides*, and *David Busch's Guides to Digital SLR Photography*. As a roving photojournalist for more than 20 years, he illustrated his books, magazine articles, and newspaper reports with award-winning images. Busch operated his own commercial studio, suffocated in formal dress while shooting weddings-for-hire, and shot sports for a daily newspaper and upstate New York college. His photos and articles have appeared in *Popular Photography & Imaging*, *The Rangefinder*, *The Professional Photographer*, and hundreds of other publications. He's also reviewed dozens of digital cameras for CNet and *Computer Shopper*, and his advice is featured on NPR's *All Tech Considered*. Visit his website at www.dsrlguides.com/blog.

Chapter 1

Quick Set-up Guide

This chapter contains the essential information you need to get your Canon EOS 60D prepped and ready to go. You'll learn how to use a few of the basic controls and features, and how to transfer your photos to your computer. If you want a more complete map of the functions of your camera, skip ahead to Chapter 2.

Pre-flight Checklist

The initial set-up of your 60D is fast and easy. You just need to learn a few controls, charge the battery, attach a lens, and insert a Secure Digital card.

Charging the Battery

When the battery is inserted into the LC-E6/LC-E6E charger properly (it's impossible to insert it incorrectly), a Charge light begins glowing orange-red. When the battery completes the charge, the lamp turns green, approximately two hours later. When the battery is charged, remove it from the charger, flip the lever on the bottom of the camera, and slide the battery in. (See Figure 1.1.) To remove the battery, you must press a white lever, which prevents the pack from slipping out when the door is opened.



Figure 1.1

Insert the battery in the camera; it only fits one way.

Introducing Menus and Navigation Controls

You'll find descriptions of most of the controls used with the 60D in Chapter 2, which provides a complete “roadmap” of the camera's buttons and dials and switches. However, you may need to perform a few tasks during this initial set-up process, and most of them will require the MENU button, Main Dial, and Quick Control Dial or Multi-controller pad and SET button (see Figure 1.2).

- **MENU button.** It's located to the right of the LCD monitor on the back of the camera. When you want to access a menu, press it. To exit most menus, press it again.
- **INFO. button.** Press this button, located below the MENU button, repeatedly to cycle among back-panel LCD screens of information, or to turn them off.
- **Main Dial.** Near the shutter release on top of the camera, used to navigate between top-level menus and change camera settings.

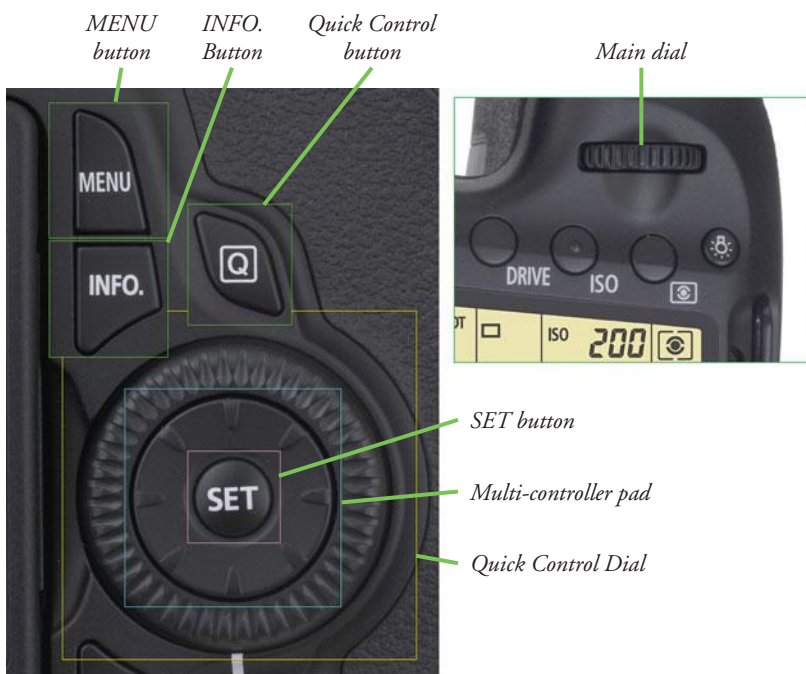


Figure 1.2 Main controls of the EOS 60D.

- **Quick Control Dial.** Used to select shooting options, such as *f*/stop or exposure compensating value, or to navigate through menus. It also serves as an alternate controller for some functions set with other controls, such as choosing the autofocus zone/point.
- **Multi-controller pad.** A joystick-like pad in the center of the Quick Control Dial that can be shifted up, down, side to side, and diagonally, or pressed. It can be used for several functions, including scrolling around a magnified image, making camera settings, or choosing a menu item.
- **SET button.** Confirms choice.
- **Quick Control button.** Pressing this button pops up a screen that allows you to change many settings, as I'll describe later.

The Quick Control Dial (QCD) has a number of functions. You can use it to set the lens opening (aperture) when using Manual or Bulb exposure settings. It can also be used to add or subtract exposure from the basic setting ("exposure compensation," as described in Chapter 2). If you've set an aperture or exposure compensation value and want to make sure it isn't accidentally changed, switch the lever to the Lock position.

Setting the Time and Date

The first time you use the Canon EOS 60D, it may ask you to enter the time and date. (This information may have been set by someone checking out your camera on your behalf prior to sale.) Just follow these steps:

1. Press the MENU button, located to the right of the LCD.
2. Rotate the Main Dial (near the shutter release button on top of the camera) until the Set-up 2 menu is highlighted. It's marked by a wrench with two dots next to it.
3. Rotate the Quick Control Dial (QCD) to move the highlighting down to the Date/Time entry.
4. Press the SET button in the center of the QCD to access the Date/Time setting screen.
5. Rotate the QCD to select the value you want to change. When the gold box highlights the month, day, year, hour, minute, second, or year format you want to adjust, press the SET button to activate that value. A pair of up/down pointing triangles appears above the value. The time is set using a 24-hour clock.
6. Rotate the Quick Control Dial to adjust the value up or down. Press the SET button to confirm the value you've entered.

7. Repeat steps 5 and 6 for each of the other values you want to change. The date format can be switched from the default mm/dd/yy to yy/mm/dd or dd/mm/yy.
8. When finished, rotate the QCD to select either OK (if you're satisfied with your changes) or Cancel (if you'd like to return to the Set-up 2 menu screen without making any changes). Press SET to confirm your choice.
9. When finished setting the date and time, press the MENU button to exit.

Mounting the Lens

If your 60D has no lens attached, you'll need to mount one before shooting:

1. Select the lens and loosen (but do not remove) the rear lens cap.
2. Remove the body cap on the camera by rotating the cap towards the release button.
3. Once the body cap has been removed, remove the rear lens cap from the lens, set it aside, and then mount the lens on the camera by matching the alignment indicator on the lens barrel (red for EF lenses and white for EF-S lenses) with the red or white dot on the camera's lens mount. (See Figure 1.3.) Rotate the lens away from the shutter release until it seats securely.
4. Set the focus mode switch on the lens to AF (autofocus). If the lens hood is bayoneted on the lens in the reversed position (which makes the lens/hood combination more compact for transport), twist it off and remount with the "petals" (if present) facing outward. A lens hood protects the front of the lens from accidental bumps, and reduces flare caused by extraneous light arriving at the front element of the lens from outside the picture area.



Figure 1.3

Match the indicator on the lens with the white or red dot on the camera mount to properly align the lens with the bayonet mount.

Adjusting Diopter Correction

Those of us with less than perfect eyesight can often benefit from a little optical correction in the viewfinder. Your contact lenses or glasses may provide all the correction you need, but if you are a glasses wearer and want to use the 60D without your glasses, or use your glasses with your camera and can benefit from some additional correction, you can take advantage of the camera's built-in diopter adjustment. It can be varied from -3 to $+1$ correction. Press the shutter release halfway to illuminate the indicators in the viewfinder, then rotate the adjacent diopter adjustment wheel (see Figure 1.4) while looking through the window until the indicators appear sharp.



Figure 1.4

Viewfinder diopter correction from -3 to $+1$ can be dialed in.

*Diopter
adjustment
wheel*

If the available correction is insufficient, Canon offers 10 different Dioptic Adjustment Lens Series E correction lenses for the viewfinder window. If more than one person uses your 60D, and each requires a different diopter setting, you can save a little time by noting the number of clicks and direction (clockwise to increase the diopter power; counterclockwise to decrease the diopter value) required to change from one user to the other. There are 18 detents in all.

Inserting and Formatting a Secure Digital Card

Slide the door on the right side of the body toward the back of the camera to release the cover, and then open it. (You should only remove the memory card when the camera is switched off, but the 60D will remind you if the door is opened while the camera is still writing photos to the memory card.)

Insert the memory card with the label facing the back of the camera, as shown in Figure 1.5. Close the door, and your pre-flight checklist is done! (I'm going to assume you remember to remove the lens cap when you're ready to take a picture!) When you want to remove the memory card later, just press the memory card edge, and it will pop right out.

I recommend formatting the memory card before each shooting session, to ensure that the card has a fresh file system, and doesn't have stray files left over. Format *only* when you've transferred all the images to your computer, of course. To use the recommended method to format a memory card, press the MENU button, rotate the Main Dial (located on top of the camera, just behind the shutter release button), choose the Set-up 1 menu (which is represented by a wrench icon with a single dot next to it), use the Quick Control Dial (that round wheel to the right of the LCD) to navigate to the Format entry, and press the SET button in the center of the dial to access the Format screen. Rotate the Quick Control Dial again to select OK and press the SET button one final time to begin the format process.



Figure 1.5

The memory card is inserted with the label facing the back of the camera.

Selecting a Shooting Mode

You can choose a shooting method from the Mode Dial located on the top left of the Canon EOS 60D. (See Figure 1.6.) There are nine Basic Zone shooting modes, in which the camera makes virtually all the decisions for you (except when to press the shutter), and five Creative Zone modes, which allow you to provide input over the exposure and settings the camera uses. There is also a

Camera User Setting position that can be used to store specific groups of camera settings, which you can then recall quickly by spinning the Mode Dial to the C position.

The current mode is displayed on the Shooting Setting screen (left, Figure 1.7). Press the INFO. button to show this screen if it is not visible. When you press the Quick Control (Q) button, you can change many settings from the Quick Control screen (right, Figure 1.7).



Figure 1.6

Choose Basic Zone and Creative Zone options from the Mode Dial.

Creative Zone

Basic Zone



Figure 1.7 The Shooting Setting screen (left), and the similar Quick Control screen (right).

Choosing a Basic Zone Mode

The nine Basic Zone scene modes can be selected by rotating the Mode Dial on the top left of the 60D to the appropriate icon:

- **Full Auto.** In this mode, the EOS 60D makes all the exposure decisions for you, and will pop up the flash if necessary under low-light conditions.
- **Flash Off.** This mode is Full Auto with the flash disabled. You'll want to use it in museums and other locations where flash is forbidden or inappropriate. It otherwise operates exactly like the Auto setting but disables the pop-up internal flash unit.
- **CA.** This Creative Auto mode is basically the same as the Full Auto option, but, unlike the other Basic Zone modes, allows you to change the brightness and other parameters of the image. The 60D still makes most of the decisions for you, but you can make some simple adjustments using the Creative Auto setting screen that appears when you press the Q button.
- **Portrait.** Use this mode when you're taking a portrait of a subject standing relatively close to the camera and want to de-emphasize the background, maximize sharpness, and produce flattering skin tones. The flash will pop up, if needed.
- **Landscape.** Select this mode when you want extra sharpness and rich colors of distant scenes. The flash doesn't pop up in this mode.
- **Close Up.** This mode is helpful when you are shooting close-up pictures of a subject from about one foot away or less. The flash will pop up, if needed.
- **Sports.** Use this mode to freeze fast-moving subjects. The flash doesn't pop up automatically in this mode.
- **Night Portrait.** Choose this mode when you want to illuminate a subject in the foreground with flash, but still allow the background to be exposed properly by the available light. Be prepared to use a tripod or an image-stabilized (IS) lens to reduce the effects of camera shake. The flash will pop up, if needed.
- **Movie.** Use this mode to shoot videos in Live View.

Using Ambience

When shooting in any of the Basic Zone modes, you can press the Quick Control (Q) button to produce a screen that allows selecting a particular type of effect, or “ambience” to be applied. Table 1.1 shows the nine choices and their effects. Use the Multi-controller to navigate the screen to select ambience (the top setting in Figure 1.8), or down to the other optional settings, which include background blur (when using Creative Auto, left in the figure) or options such as drive mode (as with the Landscape screen shown at right in the figure).

Options vary by Basic Zone mode. Change Default Setting to the intensity you want.

Table 1.1 Selecting Ambience

Setting	Effect
Standard	This is the customized set of parameters for each Basic Zone mode, each tailored specifically for Portrait, Landscape, Close-Up, Sports, or other mode.
Vivid	Produces a look that is slightly sharper and with richer colors for the relevant Basic Zone mode.
Soft	Reduced sharpness for adult portraits, flowers, children, and pets.
Warm	Warmer, soft tones. An alternative setting for portraits and other subjects that you want to appear both soft and warm.
Intense	Darker tones with increased contrast to emphasize your subject. This setting is great for portraits of men.
Cool	Darker, cooler tones. Use with care on human subjects, which aren't always flattered by the icier look this setting can produce.
Brighter	Overall lighter image with less contrast.
Darker	Produces a darker image.
Monochrome	Choose from black-and-white, sepia, or blue (cyanotype) toning.



Figure 1.8 Creative Auto ambience settings (left) and the typical choices available when using other Basic Zone modes (right).

Choosing a Metering Mode

You might want to select a particular metering mode for your first shots, although the default Evaluative metering is probably the best choice as you get to know your camera. To change metering modes, press the metering button on top of the camera (it's the farthest button to the right immediately above the monochrome LCD) and spin the Main Dial to cycle among the choices shown in Figure 1.9:

- **Evaluative metering.** The standard metering mode; the 60D attempts to intelligently classify your image and choose the best exposure based on readings from 63 different zones in the frame, with emphasis on the autofocus points.
- **Partial metering.** Exposure is based on a central spot, roughly 6.5 percent of the image area.
- **Spot metering.** Exposure is calculated from a smaller central spot, about 2.3 percent of the image area.
- **Center-weighted averaging metering.** The 60D meters the entire scene, but gives the most emphasis to the central area of the frame.

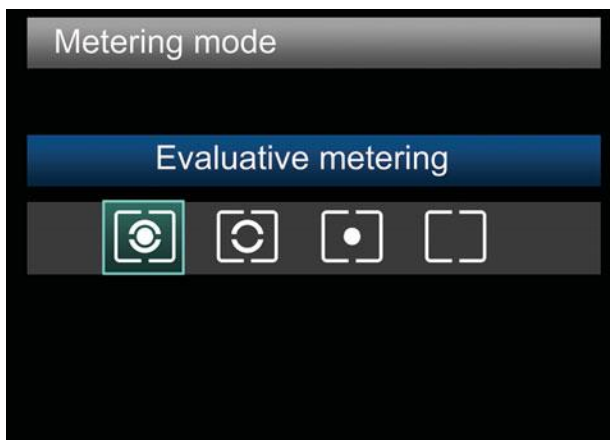


Figure 1.9
Metering modes
(left to right)
Evaluative,
Partial, Spot,
Center-weighted.

Choosing a Focus Mode

You can easily switch between automatic and manual focus by moving the AF/MF switch on the lens mounted on your camera. However, if you're using a semi-automatic shooting mode, you'll still need to choose an appropriate focus mode.

To set the focus mode, press the AF button on the top panel of the camera and spin the Main Dial until the mode you want appears in the top-panel LCD. (See Figure 1.10.) The three choices are as follows:

- **One-Shot.** This mode, sometimes called *single autofocus*, locks in a focus point when the shutter button is pressed down halfway, and the focus confirmation light glows in the viewfinder. The focus will remain locked until you release the button or take the picture. If the camera is unable to achieve sharp focus, the focus confirmation light will blink. This mode is best when your subject is relatively motionless.
- **AI Servo AF.** This mode, sometimes called *continuous autofocus*, sets focus when you partially depress the shutter button, but continues to monitor the frame and refocuses if the camera or subject is moved. This is a useful mode for photographing sports and moving subjects.
- **AI Focus.** In this mode, the 60D switches between One-Shot and AI Servo as appropriate. That is, it locks in a focus point when you partially depress the shutter button (One-Shot mode), but switches automatically to AI Servo if the subject begins to move. This mode is handy when photographing a subject, such as a child at quiet play, but who might move unexpectedly.

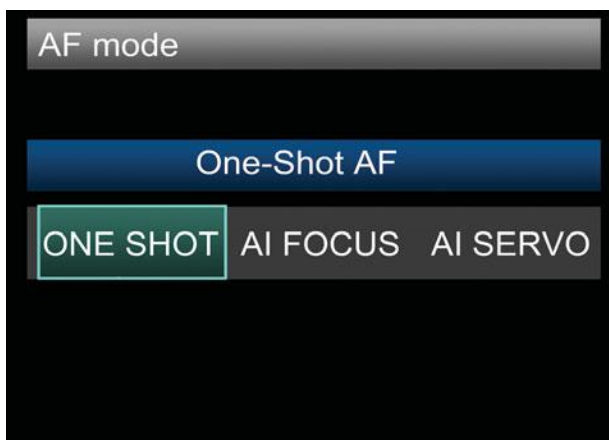


Figure 1.10
Set Autofocus
mode.

Selecting a Focus Point

When not using Live View, the Canon EOS 60D uses nine different focus points to calculate correct focus. (I'll address focusing in Live View in Chapter 6.) In any of the Basic Zone shooting modes, the focus point is selected automatically by the camera. In the other Creative Zone modes, you can allow the camera to select the focus point automatically, or you can specify which focus point should be used.

There are several methods to set the focus point manually. You can press the AF point selection button on the back right edge of the camera (it's marked with a blue magnifying glass with a plus sign inside), look through the viewfinder, and use the Multi-controller pad, located inside the Quick Control Dial to move the focus point to the zone you want to use. For example, press the Multi-controller straight up or down, and the top or bottom focus points are selected. To the left or right, and the side points are selected. Movements to the two o'clock, four o'clock, seven o'clock, or ten o'clock positions choose the in-between focus sensors. Press the Multi-controller in, and the center focus point becomes active. The display seen in the viewfinder is shown at left in Figure 1.11. You can also choose a focus point from the AF Point Selection screen that appears simultaneously on the LCD (at right in Figure 1.11).

You can also choose a focus point by pressing the AF point selection button and then rotating the Main Dial. The focus point will cycle among the edge points counterclockwise (if you turn the Main Dial to the left) or clockwise (if you spin the Main Dial to the right), ending/starting with the center focus point/all nine focus points. The Quick Control Dial can also be used.

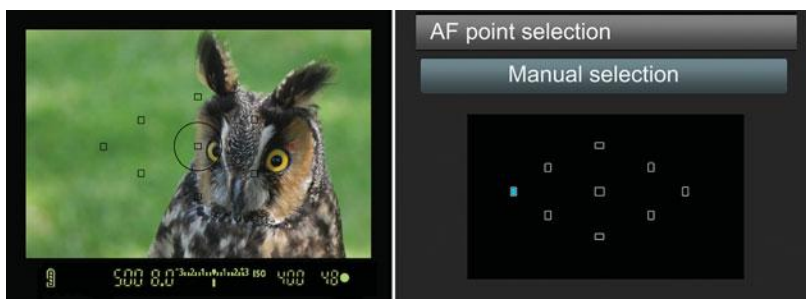


Figure 1.11 Select a focus point through the viewfinder (left) or from the LCD screen display (right).

Adjusting the ISO Sensitivity

If you like, you can custom tailor your ISO sensitivity settings. To start out, it's best to set ISO to ISO 100 or ISO 200 for daylight photos, and ISO 400 for pictures in dimmer light. You can adjust it now by pressing the ISO button and rotating the Main Dial until the setting you want appears on the status LCD on top of the camera.

Using the Self-Timer

If you want to set a short delay before your picture is taken, you can use the self-timer. Press the DRIVE button and rotate the Quick Control Dial or Main Dial until the self-timer icon (for a 10-second delay) or the self-timer icon accompanied by the numeral 2 (for a 2-second delay) appear on the top panel status LCD. Canon supplies a rubber eyepiece cover, which attaches to your camera strap and can be slid over the eyepiece in place of the rubber eyecup. This prevents light from entering through the eyepiece, which can confuse the exposure meter. I've found that extraneous light is seldom a problem unless a bright light source is coming from directly behind the camera, in which case I use my hand to shield the viewfinder.

Press the shutter release to lock focus and start the timer. The self-timer lamp will blink and the beeper will sound (unless you've silenced it in the menus) until the final two seconds, when the lamp remains on and the beeper beeps more rapidly.

USING THE QUICK CONTROL SCREEN

In Creative Zone modes, you can press the Quick Control (Q) button to produce the Quick Control screen (shown in Figure 1.7). (Press the INFO. button to cycle between the Quick Control screen, Camera Settings screen, and Electronic Level.) You can use the Multi-controller or QCD to navigate to settings (including ISO sensitivity and self-timer/drive mode, just described), press the SET button, and change them from the screen that appears.

Reviewing the Images You've Taken

The Canon EOS 60D has a broad range of playback and image review options, including the ability to jump ahead 10 or 100 images at a time. Here is all you really need to know, as shown in Figure 1.12:

- **Display image.** Press the Playback button (marked with a blue right-pointing triangle at the lower-right edge of the LCD) to display the most recent image in full-screen single image mode. If you last viewed your images using the thumbnail mode (described later in this list), the Index display appears instead.
- **View additional images.** Rotate the Quick Control Dial to review additional images, one at a time. Turn it counterclockwise to review images from most recent to oldest, or clockwise to start with the first image on the Secure Digital card and cycle forward to the newest.
- **Jump ahead or back.** If you want to zip through your shots more quickly to find a specific image, rotate the Main Dial to leap ahead or back 10 or 100 images, depending on the increment you've set using the last entry in the Playback 2 menu. I find the 60D's use of the Main Dial is faster.



Figure 1.12 Review your images.

You can also jump ahead by screens of images, by date, by folder, or by image type (such as Stills or Movies).

- **View image information.** Press the INFO. button repeatedly to cycle among overlays of basic image information, detailed shooting information, or no information at all.
- **Zoom in on an image.** When an image is displayed full-screen on your LCD, press the Magnify/Enlarge button repeatedly to zoom in. The Magnify/Enlarge button is located in the upper-right corner of the back of the camera, marked with a blue magnifying glass with a plus sign in it. The Reduce Image button, located to the left of the Magnify/Enlarge button, zooms back out. Press the Playback button to exit magnified display.
- **Scroll around in a magnified image.** Press the Magnify/Enlarge button, then use the Multi-controller pad to scroll around within a magnified image.
- **View thumbnail images.** You can also rapidly move among a large number of images using the Index mode described in the section that follows this list.

Cruising Through Index Views

You can navigate quickly among thumbnails representing a series of images using the 60D's index mode. Here are your options:

- **Display thumbnails.** Press the Playback button to display an image on the color LCD. If you last viewed your images using Index mode, an Index array of four or nine reduced-size images appears automatically. If an image pops up full-screen in single image mode, press the Reduce Image button (it's marked with a magnifying glass with a minus sign inside) once to view four thumbnails, or twice to view nine thumbnails. You can switch between four, nine, and single images by pressing the Reduce Image button to see more/smaller versions of your images, and the Magnify/Enlarge button to see fewer/larger versions of your images.
- **Navigate within a screen of index images.** In Index mode, use the QCD or Multi-controller joystick to move the blue highlight box around within the current Index display screen.
- **View more Index pages.** To view additional Index pages, rotate the Main Dial. The display will leap ahead or back by the Jump increment you've set in the Playback 2 menu, either 10 or 100 images, by index page, by date, folder, movies, or still images.
- **Check image.** When an image you want to examine more closely is highlighted, press the Magnify/Enlarge button until the single image version appears full-screen on your LCD.

Using the Built-in Flash

The built-in flash is easy enough to work with that you can begin using it right away, either to provide the main lighting of a scene, or as supplementary illumination to fill in the shadows. The 60D will automatically balance the amount of light emitted from the flash so that it illuminates the shadows nicely, without overwhelming the highlights and producing a glaring “flash” look.

To pop up the flash, just press the flash button on the left side of the front of the camera. When using these modes, the flash functions in the following way:

- **P (Program mode).** The 60D selects a shutter speed from 1/60th to 1/250th second and appropriate aperture automatically.
- **Tv (Shutter-priority mode).** You choose a shutter speed from 30 seconds to 1/250th second, and the 60D chooses the lens opening for you, while adjusting the flash output to provide the correct exposure.
- **Av (Aperture-priority mode).** You select the aperture you want to use, and the camera will select a shutter speed from 30 seconds to 1/250th second, and adjust the flash output to provide the correct exposure. In low light levels, the 60D may select a very slow shutter speed to allow the flash and background illumination to balance out, so you should use a tripod.
- **M (manual mode).** You choose both shutter speed and aperture, and the camera will adjust the flash output to produce a good exposure based on the aperture you've selected.

Transferring Photos to Your Computer

You can transfer the photos you've taken to your computer for printing, further review, or image editing. Your 60D allows you to print directly to PictBridge-compatible printers and to create print orders right in the camera, plus you can select which images to transfer to your computer.

For now, you'll probably want to transfer your images either by using a cable transfer from the camera to the computer or by removing the memory card from the 60D and transferring the images with a card reader. The latter option is usually the best, because it's usually much faster and doesn't deplete the battery of your camera. However, you can use a cable transfer when you have the cable and a computer, but no card reader (perhaps you're using the computer of a friend or colleague, or at an Internet café).

To transfer images from the camera to a Mac or PC computer using the USB cable:

1. Turn off the camera.
2. Pry back the rubber cover that protects the 60D's USB port, and plug the USB cable furnished with the camera into the USB port. (See Figure 1.13.)
3. Connect the other end of the USB cable to a USB port on your computer.
4. Turn on the camera. Your installed software usually detects the camera and offers to transfer the pictures, or the camera appears on your desktop as a mass storage device, enabling you to drag and drop the files to your computer.

To transfer images from a memory card to the computer using a card reader:

1. Turn off the camera.
2. Slide open the memory card door, and press on the card, which causes it to pop up so it can be removed from the slot.
3. Insert the memory card into your memory card reader. Your installed software detects the files on the card and offers to transfer them. The card can also appear as a mass storage device on your desktop, which you can open, and then drag and drop the files to your computer.



Figure 1.13

Images can be transferred to your computer using a USB cable.

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Chapter 2

Canon EOS 60D Roadmap

You should find this Streetsmart Roadmap of the functions of the 60D's controls more useful than the tiny black-and-white drawings in the manual packed with the camera, which has dozens of cross-references that send you on an information scavenger hunt through dozens of pages. Everything you need to know about the controls themselves is here. You'll find descriptions of menus and settings in Chapters 3 and 4.

Canon EOS 60D: Front View

Figure 2.1 shows a front view of the Canon 60D and a view from a 45-degree angle. The main components you need to know about are as follows:

- **Shutter release button.** Angled on top of the handgrip is the shutter release button. Press this button down halfway to lock exposure and focus (in One-Shot mode and AI Focus with non-moving subjects).
- **Main Dial.** This dial is used to change shooting settings. When settings are available in pairs (such as shutter speed/aperture), this dial will be used to make one type of setting, such as shutter speed, while the Quick Control Dial (on the back of the camera) will be used to make the other, such as aperture setting.
- **Remote control sensor.** This infrared sensor detects the invisible flash of a Canon remote control, like the RC-6.
- **Red-eye reduction/self-timer lamp.** This LED provides a blip of light shortly before a flash exposure to cause the subjects' pupils to close down, reducing the effect of red-eye reflections off their retinas. When using the self-timer, this lamp also flashes to mark the countdown until the photo is taken. (You can turn off the lamp if you don't want it.)
- **DC power cord cover.** This cover, on the inside edge of the hand grip, opens to allow the DC power cable to connect to the 60D through the battery compartment.



Figure 2.1

- **Hand grip.** This provides a comfortable hand-hold, and also contains the 60D's battery.
- **Memory card slot.** Slide the door over this slot towards the back of the camera to provide access to the memory card.
- **Depth-of-field preview button.** This button, adjacent to the lens mount, stops down the lens to the taking aperture so you can see in the viewfinder how much of the image is in focus. The view grows dimmer as the aperture is reduced.

Figure 2.2 shows a front view of the 60D from the other side, with the electronic flash elevated. The controls here include:

- **Flash button.** This button releases the built-in flash so it can flip up and start the charging process. If you decide you do not want to use the flash, you can turn it off by pressing the flash head back down. Note that in some auto modes it will keep popping back up.
- **Lens release button.** Press and hold this button to unlock the lens so you can rotate the lens to remove it from the camera.
- **Lens index mark.** Use this mark (a red hemispherical button on EF lenses, a raised white square on EF-S lenses) to line up the lens with a matching mark on the camera body when mounting a lens.
- **Lens switches.** Canon autofocus lenses have a switch to allow changing between automatic focus and manual focus, and, in the case of IS lenses, another switch (not shown) to turn image stabilization on and off.
- **Microphone.** Records monaural sound when capturing movie clips. If you want stereo sound, use an external stereo mic, as described later.



Figure 2.2

- **Speaker.** Plays back monaural sound when reviewing your movies.
- **Neck strap mount.** Attach your neck strap to this ring, and a matching ring on the other side of the camera.
- **Terminal cover.** This rubber cover keeps dust and moisture from your 60D's in/out ports when they are not being used.

Inside the Terminal cover are:

- **Microphone input.** Plug a stereo microphone into this jack.
- **Remote control terminal.** You can plug various Canon remote release switches, timers, and wireless controllers into this connector.
- **USB/Video Out port.** Plug in the USB cable furnished with your 60D and connect the other end to a USB port in your computer to transfer photos. Or, connect the AV cable and connect your camera to a television to view your photos on a large screen.
- **HDMI port.** Use a Type C HDMI cable (not included in the box with your camera) to direct the video and audio output of the 60D to a high-definition television (HDTV) or HD monitor.

The 60D's Back Panel

The back panel of the 60D bristles with more than a dozen different controls, buttons, and knobs. That might seem like a lot of controls to learn, but you'll find, as I noted earlier, that it's a lot easier to press a dedicated button and spin a dial than to jump to a menu every time you want to change a setting. Many of the buttons do double-duty to perform several functions. I've divided them into two groups. Figure 2.3 shows an overview of the back panel in various LCD configurations, and includes, as you can see in the upper-right corner of the camera:

- **Swiveling LCD.** The back panel LCD on the 60D can be rotated and swiveled, so that it can face inwards towards the camera back (protecting it from scratches), or positioned as shown in Figure 2.3.
- **Power switch.** Slide to the right to turn the 60D on; to the left to turn it off.
- **Erase button.** Press to erase the image shown on the LCD. A menu will pop up displaying Cancel and Erase choices. Rotate the Main Dial or the Quick Control Dial to select one of these actions, then press the SET button to activate your choice.

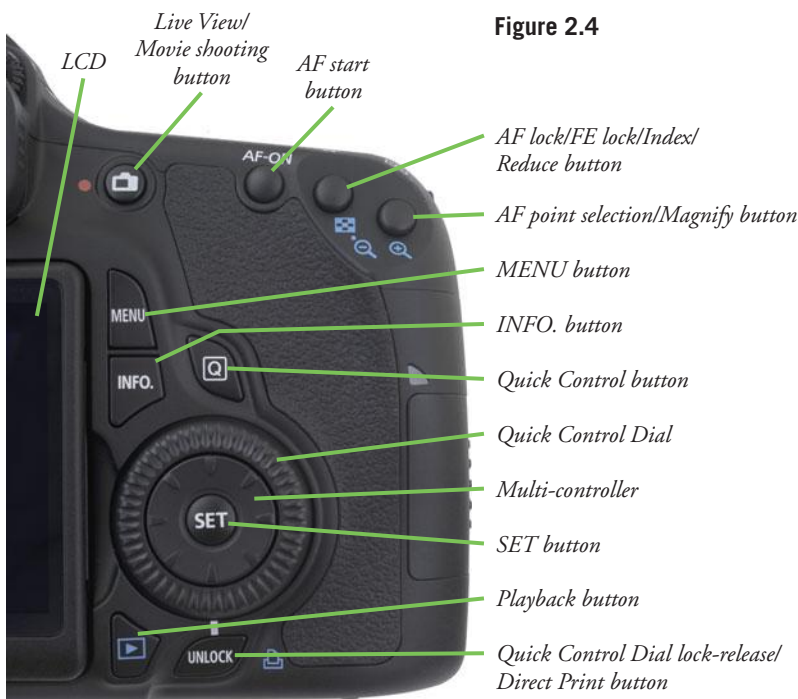


Figure 2.3

The most-used controls reside on the right side of the 60D. (See Figure 2.4.)

- **Live View/Movie shooting button.** Press once to start Live View if the Mode Dial is in any position other than the Movie position. Press again to exit Live View. To shoot movies, set the Mode Dial to the Movie position. Live View will start automatically, and you can stop/start movie shooting by pressing this button.
- **AF-ON.** Press this button to activate the autofocus system without needing to partially depress the shutter release. This control, used with other buttons, allows you to lock exposure and focus separately: Lock exposure by pressing the shutter release halfway, or by pressing the AE lock button; autofocus by pressing the shutter release halfway, or by pressing the AF-ON button.
- **AE/FE (autoexposure/flash exposure) lock/Thumbnail/Zoom Out button.** This button has several functions, which differ depending on the AF point and metering mode.

In shooting mode, it locks the exposure or flash exposure that the camera sets when you partially depress the shutter button. The exposure lock



indication (*) appears in the viewfinder. If you want to recalculate exposure with the shutter button still partially depressed, press the * button again. The exposure will be unlocked when you release the shutter button or take the picture. To retain the exposure lock for subsequent photos, keep the * button pressed while shooting.

When using flash, pressing the * button fires an extra pre-flash when you partially depress the shutter button that allows the unit to calculate and lock exposure prior to taking the picture.

In playback mode, press this button to switch from single-image display to nine-image thumbnail index. Move among the thumbnails with the Quick Control Dial. When an image is zoomed in, press this button to zoom out.

- **AF point selection/Zoom In button.** In shooting mode, this button activates autofocus point selection. In playback mode, this button zooms in on the image that's displayed, or the highlighted thumbnail index image.
- **Access lamp.** When lit or blinking, this lamp indicates that the memory card is being accessed.
- **Quick Control Dial.** Used to select shooting options, such as *f*/stop or exposure compensation value, or to navigate through menus. It also serves as an alternate controller for some functions set with other controls, such as AF point.
- **Multi-controller pad.** This joystick-like pad can be shifted up, down, side to side, and diagonally for a total of eight directions. It can be used for several functions, including AF point selection, scrolling around a magnified image, trimming a photo, or setting white balance correction.
- **SET button.** Selects a highlighted setting or menu option.
- **Quick Control button.** Pressing this button produces the Quick Control screen, which displays the current shooting settings on the rear color LCD monitor. You can use the Multi-controller to select one of the displayed functions, and rotate the Main Dial or Quick Control Dial to change the highlighted setting. (See the sidebar, "Using the Quick Control Screen" which follows this list.)
- **MENU button.** Summons/exits the menu displayed on the rear LCD of the 60D. When you're working with submenus, this button also serves to exit a submenu and return to the main menu.
- **INFO. button (shooting mode).** Changes the amount of picture information displayed. In shooting mode, pressing the INFO. button will display a plain screen (with just the image, and no other data overlaid on top), or up to three additional screens. I'll show you how to choose which of the

three other screens are displayed, using the Set-up 3 menu INFO. button display options choice, in Chapter 3. (You can choose none, any two, or all three, if you like.) The three additional screens that can be shown in a cycle when the INFO. button is pressed repeatedly are as follows:

- **Camera settings.** Shows a list of basic settings for the camera, including color space, white balance information, noise reduction status, and the actual number of free shots remaining on your memory card. (The counter on the top-panel LCD can display no more than 999 shots remaining.) (See Figure 2.5.)
- **Electronic level.** Displays the current degree of tilt of the camera, both rotation around the lens axis, and forward/back tilt. This capability is especially handy when you're mounting the camera on a tripod that does not have a built-in bubble level, and you want to square up the camera. (See Figure 2.6.)
- **Shooting functions.** Displays the current shooting settings of the camera, including shutter speed, aperture, ISO sensitivity, autofocus modes, battery status, and image quality settings. Press the Q button at the upper-left corner of the back of the camera, and you can adjust any of these that are user-selectable, from the Quick Control screen, as described in the section that follows. (See Figure 2.7.)

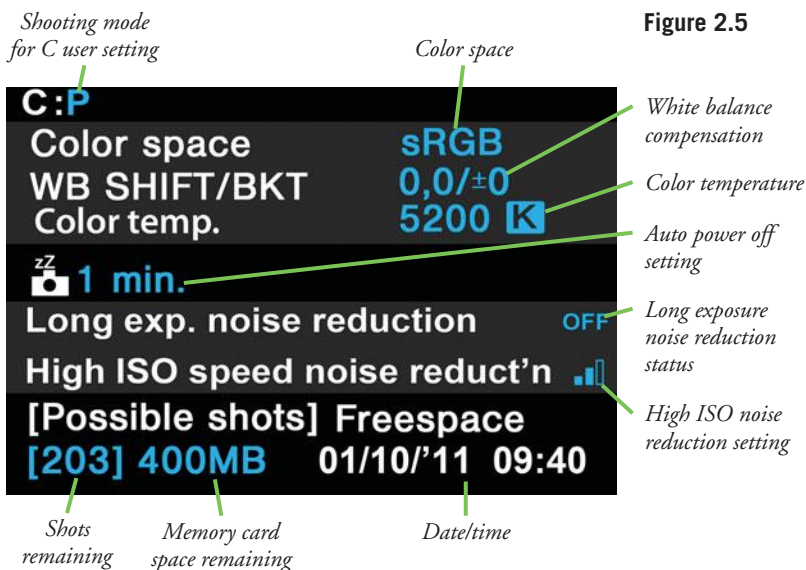


Figure 2.5

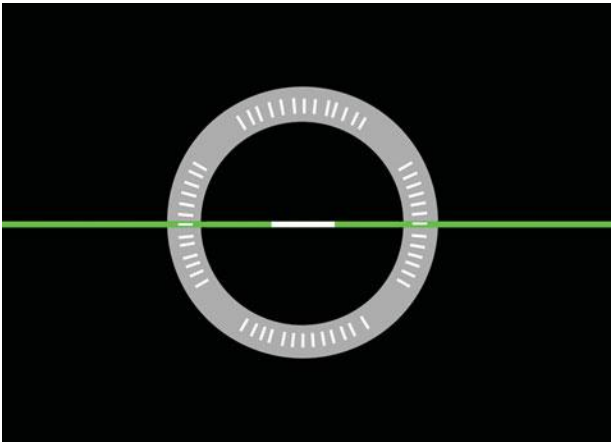


Figure 2.6

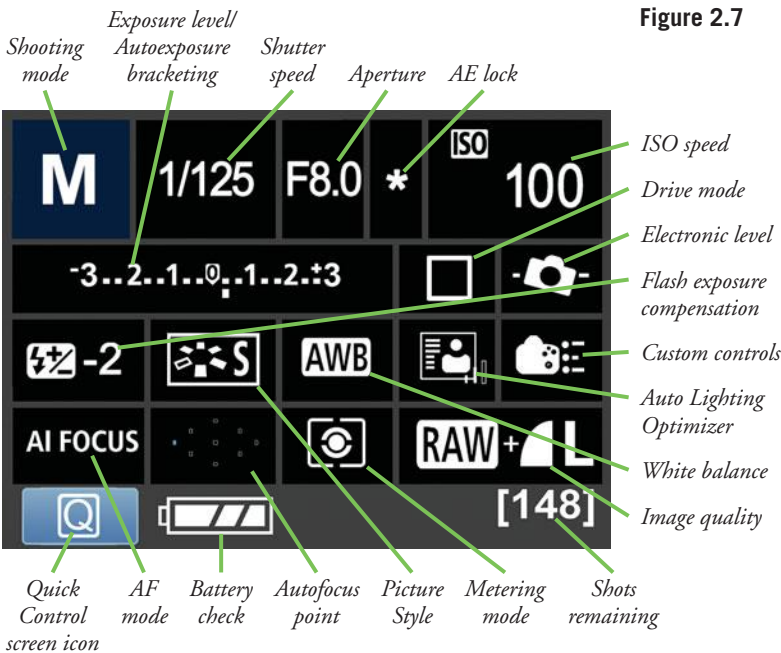


Figure 2.7

- **INFO. button (Live View/Movie mode).** When pressed repeatedly while using Live View or Movie mode, the INFO. button cycles among a slightly different set of informational screens.
- **INFO. button (other modes).** In playback mode, while reviewing images, pressing the INFO. button cycles among basic display of the image; a detailed display with a thumbnail of the image, shooting parameters, and a brightness histogram; and a display with less detail but with separate histograms for brightness, red, green, and blue channels. When setting Picture Styles, the INFO. button is used to select a highlighted Picture Style for modification. When trimming an image, the INFO. button selects the orientation.
- **Unlock.** When using Creative Zone exposure modes, you can enable locking of the Quick Control Dial (in the Set-up 2 menu, as described in Chapter 4) to prevent the QCD from accidentally changing exposure compensation (in P/Tv/Av modes) or the aperture setting (in Manual or Bulb exposure modes). If you've enabled QCD locking, pressing this button temporarily activates the button again. Press once and make your adjustment within four seconds (or within 16 seconds in Movie mode). This button also serves as the Direct Print button, transferring images you've marked for printing in the Playback menu to your PictBridge printer.
- **Playback button.** Displays the last picture taken. Thereafter, you can move back and forth among the available images by rotating the Quick Control Dial, to advance or reverse one image at a time, or the Main Dial, to jump forward or back using the jump method described in the discussion of the Playback menu in Chapter 3. To quit playback, press this button again. The 60D also exits playback mode automatically when you press the shutter button (so you'll never be prevented from taking a picture on the spur of the moment because you happened to be viewing an image).
- **LCD.** View your images and navigate through the menus on this screen, which has a glorious 920,000 dots. It's big, it's bright, and it shows enough detail that you can zoom in and examine focus, grain, and sharpness.

Using the Quick Control Screen

You can activate the Quick Control screen by pressing the Q button. In Creative Zone modes, you can change most of the parameters shown, except for exposure mode; instead, rotate the Mode Dial to Bulb, Manual, Av (Aperture-priority), Tv (Shutter-priority), or P (Program). The choices you can select change, depending on the position of the Mode Dial.

Here's how to change settings with the Quick Control screen:

1. **Activate Quick Control screen.** Press the Q button, located at the right of the 60D's back panel, directly above the Quick Control Dial.
2. **Select setting to change.** Use the Multi-controller pad to navigate around the screen and highlight the setting you want to change.
3. **Adjust setting quickly.** Once a setting is highlighted, you can change it by rotating the Main Dial or Quick Control Dial. Then, jump to Step 5.
4. **Adjust setting from a screen.** Alternatively, you can press the SET button to produce a screen of all available choices for the setting you have highlighted. Then use the Main Dial or QCD to navigate to the choice you want, and press the SET button again to return to the Quick Control screen.
5. **Adjust additional settings.** Any time the Quick Control screen is visible, you can make an adjustment, then move to another setting and adjust that, too. When finished, press the Q button to exit.

When using Basic Zone modes, including Full Auto and Creative Auto, your choices in the Quick Control menu are limited to the “ambience” settings and a few other parameters, as described in Chapter 1.

Going Topside

The top surface of the Canon EOS 60D has a few frequently accessed controls of its own. The key controls, shown in Figure 2.8, are as follows:

- **Shutter release button.** Partially depress this button to lock in exposure and focus. Press all the way to take the picture. Tapping the shutter release when the camera has turned off the autoexposure and autofocus mechanisms reactivates both. When a review image is displayed on the back-panel color LCD, tapping this button removes the image from the display and reactivates the autoexposure and autofocus mechanisms.
- **Mode Dial.** Rotate this dial to switch among exposure modes, and to choose the Camera User Setting (C).
- **Sensor focal plane.** Precision macro and scientific photography sometimes requires knowing exactly where the focal plane of the sensor is. The symbol on the side of the pentaprism marks that plane.
- **Flash hot shoe.** Slide an electronic flash into this mount when you need a more powerful Speedlite. A dedicated flash unit, like those from Canon, can use the multiple contact points shown to communicate exposure, zoom setting, white balance information, and other data between the flash and the camera. There's more on using electronic flash in Chapter 5.



Figure 2.8

- **LCD illuminator button.** Press this button to turn on the amber LCD panel lamp that backlights the LCD status panel for about six seconds, or to turn it off if illuminated. The lamp will remain lit beyond the six second period if you are using the Mode Dial or other shooting control.
- **Metering mode.** Rotate the Main Dial after pressing this button to change between Evaluative, Partial, Spot, or Center-weighted metering.
- **AF button.** Press once and then rotate the Main Dial to change between One-Shot, AI Focus, and AI Servo autofocus modes.
- **DRIVE button.** Press once and then rotate the Main Dial to change Drive mode, including Single shooting, High speed continuous shooting (up to 5.3 fps), Low speed continuous shooting (up to 3 fps), and 10- or 2-second self-timer/remote control.
- **ISO.** Press and rotate the Main Dial to choose an ISO setting.

- **Monochrome LCD status panel.** This LCD readout provides information about the status of your camera and its settings, including exposure mode, number of pictures remaining, battery status, and many other settings. I'll illustrate all these in the next section.
- **Main Dial.** This dial is used to make many shooting settings. When settings come in pairs (such as shutter speed/aperture in Manual shooting mode), the Main Dial is used for one (for example, shutter speed), while the Quick Control Dial is used for the other (aperture). When an image is on the screen during playback, this dial also specifies the leaps that skip a particular number of images during playback of the shots you've already taken. Jumps can be either 1 image, 10 images, 100 images, Jump by Date, or Jump by Screen (that is, by screens of thumbnails when using Index mode), Date, or Folder. (Jump method is selected in the Playback 2 menu, as described in Chapter 3.) This dial is also used to move among tabs when the MENU button has been pressed, and is used within some menus (in conjunction with the Quick Control Dial) to change pairs of settings.

LCD Panel Readouts

The top panel of the EOS 60D contains an amber-colored (when backlit) monochrome LCD readout that displays status information about most of the shooting settings. (See Figure 2.9.) All of the information segments available are shown in Figure 2.10. I've color-coded the display to make it easier to differentiate them; the information does *not* appear in color on the actual 60D. Many of the information items are mutually exclusive (that is, in the white balance area at upper left, only one of the possible settings illustrated will appear).

Some of the items on the status LCD also appear in the viewfinder, such as the shutter speed and aperture (pictured at top in blue in the figure), and the exposure level (in yellow at the bottom).

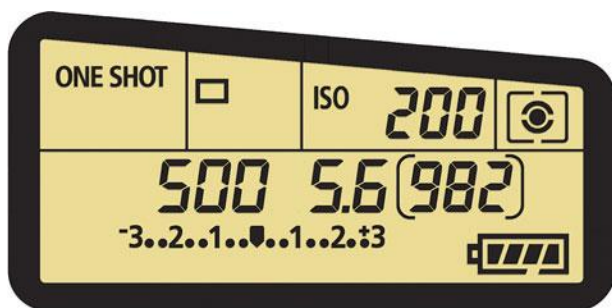


Figure 2.9

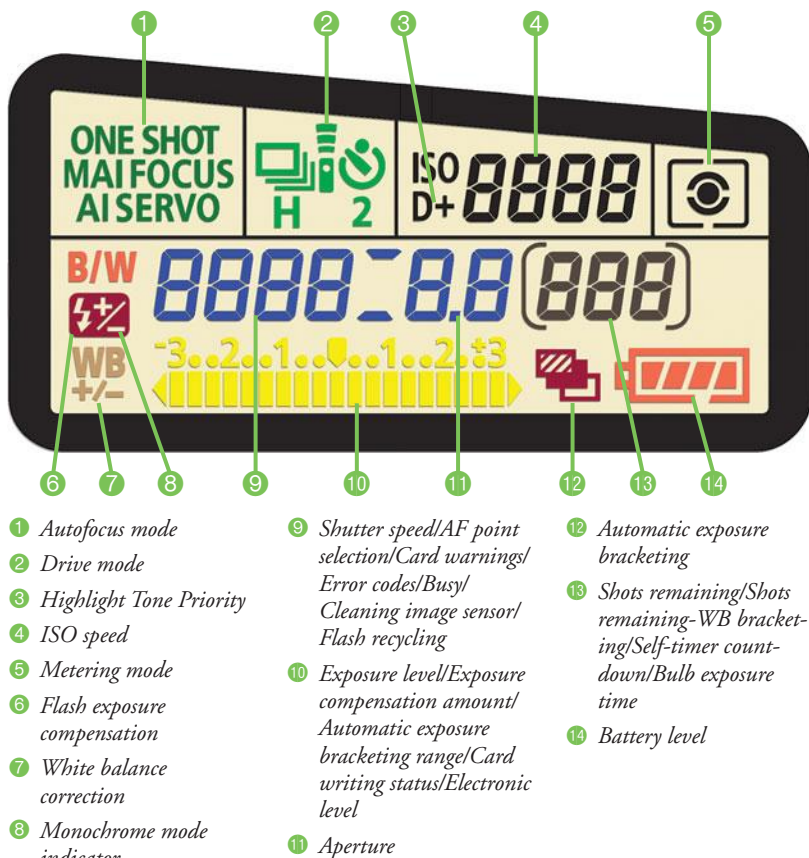


Figure 2.10

Underneath Your 60D

There's not a lot going on with the bottom panel of your EOS 60D. You'll find a tripod socket, which secures the camera to a tripod, and is also used to lock on the optional BG-E9 battery grip, which provides more juice to run your camera to take more exposures with a single charge. It also adds a vertically oriented shutter release, Main Dial, AE lock/FE lock, and AF point selection controls for easier vertical shooting.

Previous Canon models had a terminal connector under a rubber cover on the bottom of the camera to provide a connection between the battery grip and the camera for the controls on the grip, such as shutter release. The 60D simplifies

matters by including the terminal connector inside the battery compartment. To mount the grip, slide the battery door latch to open the door, then push down on the small pin that projects from the hinge. That will let you remove the battery door. Then slide the grip into the battery cavity, aligning the pin on the grip with the small hole on the other side of the tripod socket. Tighten the grip's tripod socket screw to lock the grip onto the bottom of your 60D.

Looking Inside the Viewfinder

Much of the important shooting status information is shown inside the viewfinder of the 60D. As with the displays shown on the color LCD, not all of this information will be shown at any one time. Figure 2.11 shows what you can expect to see. These readouts include the following:

- **Spot metering reference circle.** Shows the circle that delineates the metered area when Spot metering is activated.
- **Autofocus zones.** Shows the nine areas used by the 60D to focus. The camera can select the appropriate focus zone for you, or you can manually select one or all of the zones.
- **Autoexposure lock.** Shows that exposure has been locked. This icon also appears when an automatic exposure bracketing sequence is in process.
- **Flash ready indicator.** This icon appears when the flash is fully charged. It also shows when the flash exposure lock has been applied for an inappropriate exposure value.
- **Flash status indicator.** Appears along with the flash ready indicator: the H is shown when High-speed (focal plane) flash sync is being used. The * appears when flash exposure lock or a flash exposure bracketing sequence is underway.
- **Flash exposure compensation.** Appears when flash EV changes have been made.
- **Shutter speed/aperture readouts.** Most of the time, these readouts show the current shutter speed and aperture. This pair can also warn you of memory card conditions (full, error, or missing), ISO speed, flash exposure lock, and a buSY indicator when the camera is busy doing other things (including flash recycling).
- **Exposure level indicator.** This scale shows the current exposure level, with the bottom indicator centered when the exposure is correct as metered. The indicator may also move to the left or right to indicate under- or overexposure (respectively). The scale is also used to show the amount of EV and flash EV adjustments, the number of stops covered by the current automatic exposure bracketing range, and is used as a red-eye reduction lamp indicator.



- | | | |
|---|---|------------------------------------|
| 1 Autofocus points | 8 Flash exposure compensation | 12 Highlight Tone Priority |
| 2 Spot meter circle | 9 Shutter speed | 13 ISO sensitivity |
| 3 White balance correction | Other messages:
Busy/Card full/Card error/No card | 14 Monochrome mode |
| 4 Battery check | 10 Aperture | 16 Maximum burst |
| 5 Autoexposure lock/
Automatic exposure
bracketing in progress | 11 Exposure level indica-
tor/Exposure compensa-
tion amount/Flash
exposure compensation
amount/Autoexposure
bracketing range/Red-
eye reduction lamp on
indicator | 17 Focus confirmation
indicator |
| 6 Flash ready/Improper
FE lock | | |
| 7 High-speed FP flash
sync/Flash exposure
lock/Flash exposure
bracketing in progress | | |

Figure 2.11

- **ISO sensitivity.** This useful indicator shows the current ISO setting value. Those who have accidentally taken dozens of shots under bright sunlight at ISO 1600 because they forgot to change the setting back after some indoor shooting will treasure this addition.
- **B/W indicator.** Illuminates when the Monochrome Picture Style is being used. There's no way to restore color when you're shooting JPEGs without RAW, so this indicator is another valuable warning.
- **White balance correction.** Shows that white balance has been tweaked.
- **Maximum burst available.** Changes to a number to indicate the number of frames that can be taken in continuous mode using the current settings.
- **Focus confirmation.** This green dot appears when the subject covered by the active autofocus zone is in sharp focus.

Lens Components

The typical lens, like the ones shown in Figure 2.12, have several common features. Not every component appears on every lens. The 18-55mm lens on the left, for example, lacks the distance scale and distance indicator that the 17-85mm lens on the right has. Lenses that lack image stabilization will not have a stabilization switch.

- **Filter thread.** Lenses have a thread on the front for attaching filters and other add-ons. Some also use this thread for attaching a lens hood (you screw on the filter first, and then attach the hood to the screw thread on the front of the filter).
- **Lens hood bayonet.** This is used to mount the lens hood for lenses that don't use screw-mount hoods (the majority).
- **Zoom ring.** Turn this ring to change the zoom setting.
- **Zoom scale.** These markings on the lens show the current focal length selected.
- **Focus ring.** This is the ring you turn when you manually focus the lens.
- **Distance scale.** This is a readout that rotates in unison with the lens's focus mechanism to show the distance at which the lens has been focused. It's a useful indicator for double-checking autofocus, roughly evaluating depth-of-field, and for setting manual focus guesstimates.
- **Autofocus/Manual switch.** Allows you to change from automatic focus to manual focus.
- **Image stabilization switch.** Lenses with IS include a separate switch for adjusting the stabilization feature.

- **Electrical contacts.** On the back of the lens (not shown in the figure) are electrical contacts that the camera uses to communicate focus, aperture setting, and other information.
- **Lens bayonet.** This mount is used to attach the lens to a matching bayonet on the camera body.



Figure 2.12

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Chapter 3

Shooting and Playback Menu Settings

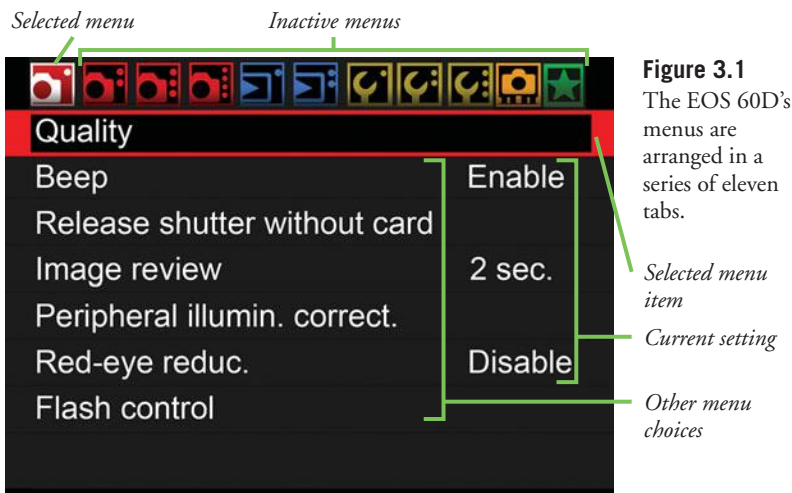
The Shooting and Playback menus determine how the 60D uses many of its shooting features to take a photo, and how it displays images on review. You'll find the Set-up, Custom Function menu, and My Menu settings in Chapter 4. The two Movie menus are described in Chapter 6.

Anatomy of the Canon EOS 60D's Menus

Tapping the MENU button brings up a typical menu like the one shown in Figure 3.1. When you're using any Mode Dial option other than Full Auto and Creative Auto, there are 11 menu tabs: Shooting 1, Shooting 2, Shooting 3, Shooting 4, Playback 1, Playback 2, Set-up 1, Set-up 2, Set-up 3, Set-up 4, Custom, and My Menu. In Full Auto and Creative Auto there are only six tabs: Shooting 1, Shooting 2, Playback 1, Playback 2, Set-up 1, and Set-up 2. (The Shooting 3, Shooting 4, Set-up 3, Custom, and My Menu choices are not available, and the options within the menus are slightly different.)

The 60D's tabs are color-coded: red for Shooting menus, blue for Playback menus, amber for Set-up menus, orange for the Custom menu, and green for the My Menu tab. The currently selected menu's icon is white within a white border, on a background corresponding to its color code. All the inactive menus are dimmed and the icon and their borders are color-coded.

- **Menu tabs.** In the top row of the menu screen, the menu that is currently active will be highlighted as described earlier. One, two, three, or four dots in the tab let you know if you are in, say Shooting 1, Shooting 2, Shooting 3, or Shooting 4. Just remember that the four red camera icons stand for shooting options; the two blue right-pointing triangles represent playback options; the three yellow wrench/hammer icons stand for set-up options; the orange camera denotes Custom Functions; and the green star stands for personalized menus defined for the star of the show—you.



- **Selected menu item.** The currently selected menu item will have a black background and will be surrounded by a box the same hue as its color code.
- **Other menu choices.** The other menu items visible on the screen will have a dark gray background.
- **Current setting.** The current settings for visible menu items are shown in the right-hand column, until one menu item is selected (by pressing the SET key). At that point all the settings vanish from the screen except for those dealing with the active menu choice.

When you've moved the menu highlighting to the menu item you want to work with, press the SET button or press the Multi-controller to select it. The current settings for the other menu items in the list will be hidden, and a list of options for the selected menu item (or a submenu screen) will appear. Within the menu choices, you can scroll up or down with the Quick Control Dial or Multi-controller; press SET and press the MENU button again to exit.

Shooting 1, 2, 3, and 4 Menu Options

The options you'll find in the red-coded Shooting menus include the following:

- Quality
- Beep
- Release shutter without card
- Image review

- Peripheral illumination correction
- Red-eye reduction
- Flash control
- Exposure compensation/AEB (Automatic Exposure Bracketing)
- Auto Lighting Optimizer
- Picture Style
- White balance
- Custom White Balance
- WB Shift/BKT
- Color Space
- Dust Delete Data
- ISO Auto
- Live View shooting
- AF mode
- Grid display
- Aspect ratio
- Exposure simulation
- Silent shooting
- Metering timer

Quality Settings

Options: Resolution, JPEG compression, JPEG, RAW, or both

You can choose the image quality settings used by the 60D to store its files. You have four choices to make:

- **Resolution.** The number of pixels captured determines the absolute resolution of the photos you shoot with your 60D. Your choices range from 18 megapixels (Large or L), measuring 5184×3456 ; 8 megapixels (Medium or M), measuring $3,456 \times 2,304$ pixels; 4.5 megapixels (Small 1 or S1), $2,592 \times 1,728$ pixels; 2.5 megapixels (Small 2 or S2), 1920×1280 ; and 350,000 pixels (Small 3 or S3), 720×480 .
- **JPEG compression.** To reduce the size of your image files and allow more photos to be stored on a given memory card, the 60D uses JPEG compression to squeeze the images down to a smaller size. This compacting reduces the image quality a little, so you're offered your choice of Fine compression and Normal compression.

- **JPEG, RAW, or both.** You can elect to store only JPEG versions of the images you shoot (6.4MB each at the Large Fine resolution setting) or you can save your photos as uncompressed, loss-free RAW files, which consume about four times as much space on your memory card (up to 20MB per file). Or, you can store both at once as you shoot. Many photographers elect to save *both* a JPEG and a RAW file, so they'll have a JPEG version that might be usable as-is, as well as the original "digital negative" RAW file in case they want to do some processing of the image later. You'll end up with two different versions of the same file: one with a JPG extension, and one with the CR2 extension that signifies a Canon RAW file.

To choose the combination you want, access the menus, scroll to **Quality**, and press the SET button. A screen similar to the one shown in Figure 3.2 will appear with two rows of choices, one for RAW formats on top, and one for JPEG formats on the bottom. A red box appears around the currently selected choice for both RAW and JPEG formats. The "--" (None) indicator at the left end of each row shows that you have not selected either RAW or JPEG resolution, and no file will be saved in that format.

Use the Main Dial to select any of the three RAW sizes (or leave the highlighting on None if you don't want to save a RAW version of your image). Rotate the Quick Control Dial or press the Multi-controller left/right buttons to choose any of the six JPEG options (Large/Fine; Large/Standard; Medium/Fine; Medium/Standard; Small 1/Fine; Small 1/Standard, Small 2, or Small 3), or None. (If you select None for *both* file formats, your 60D isn't fooled and sticks to the last format selected.) If you choose both a RAW format and a JPEG option, the screen displays the resolution of both in the second line. In practice, you'll probably use only the Large/Fine, RAW+Large/Fine, or RAW selections.

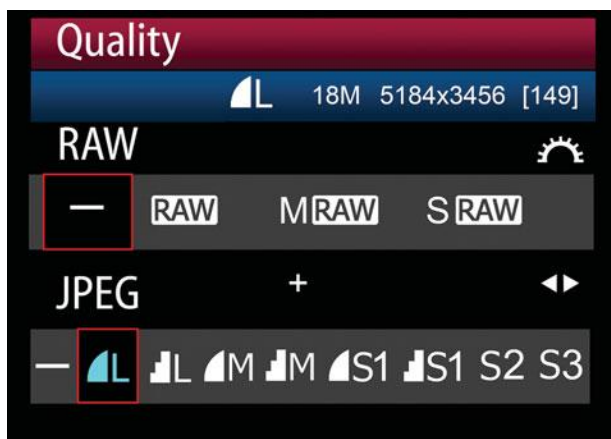


Figure 3.2
Select image
quality here.

Beep

Options: Enable, Disable

The 60D's internal beeper provides a helpful chirp to signify various functions, such as the countdown of your camera's self-timer. You can switch it off if you want to avoid the beep because it's annoying, impolite, or distracting (at a concert or museum), or undesired for any other reason.

Shoot without a Memory Card Installed

Options: Enable, Disable

This entry gives you the ability to snap off “pictures” without a memory card installed—or to lock the camera shutter release if that is the case. When using the “demo” mode, the message “Card” appears overlaid on the review image on the LCD.

Image Review

Options: Off, 2 sec., 4 sec., 8 sec., Hold

You can adjust the amount of time an image is displayed for review on the LCD after each shot is taken. You can elect to disable this review entirely (Off), or choose display times of 2, 4, or 8 seconds. You can also select Hold, an indefinite display, which will keep your image on the screen until you use one of the other controls, such as the shutter button, Main Dial, or Quick Control Dial. Turning the review display off or choosing a brief duration can help preserve battery power. However, the 60D will always override the review display when the shutter button is partially or fully depressed, so you'll never miss a shot because a previous image was on the screen. Choose Review Time from the Shooting 1 menu, and select Off, 2 sec., 4 sec., 8 sec., or Hold. If you want to retain an image on the screen for a longer period, but don't want to use Hold as your default, press the Erase button under the LCD monitor. The image will display until you choose Cancel or Erase from the menu that pops up at the bottom of the screen.

Peripheral Illumination Correction

Options: Enable, Disable

When you select this menu option from the Shooting 1 menu, the screen with the lens currently attached to the camera is shown, along with a notation whether correction data needed to brighten the corners is already registered in the camera. (Information about 25 of the most popular lenses is included in the 60D's

firmware.) If so, you can rotate the Quick Control Dial to choose Enable to activate the feature, or Disable to turn it off. Press the SET button to confirm your choice. Note that in-camera correction must be specified *before* you take the photo, so that the magical DIGIC 4 processing engine can lighten the corners of your photo before it is saved to the memory card.

If your lens is not registered in the camera, you can remedy that deficit using the EOS Utility. Just follow these steps:

1. **Link up your camera.** Connect your 60D to your computer using the USB cable supplied with the camera.
2. **Launch the EOS Utility.** Load the utility and click on Camera Settings/Remote Shooting from the splash screen that appears.
3. **Select the Shooting menu.** It's located on the menu bar located about mid-way in the control panel that appears on your computer display. The panel is shown at left in Figure 3.3. The Shooting menu icon is the white camera on a red background.
4. **Click on the Lens aberration correction choice.** The screen shown at right in Figure 3.3 will appear.
5. **Choose your lens.** Select the category containing the lens you want to register from the panels at the top of the new screen; then place a check mark next to all the lenses you'd like to register in the camera.

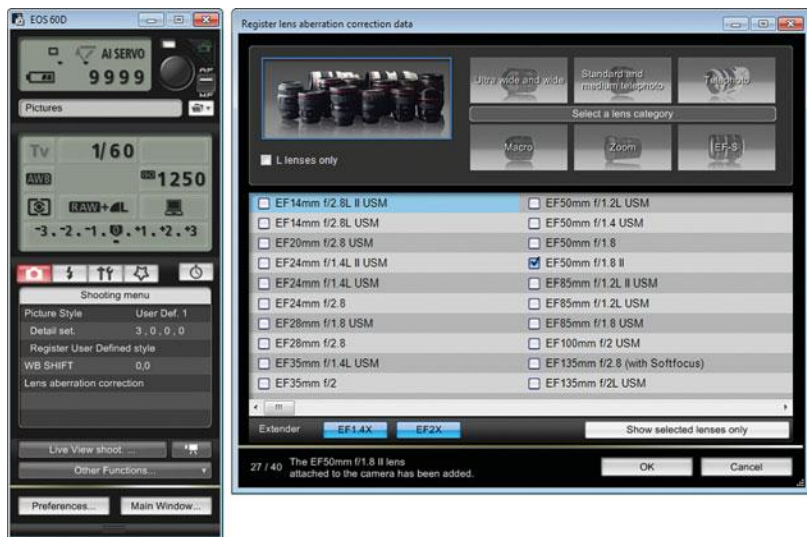


Figure 3.3 Select the lenses to be corrected.

6. **Confirm your choice.** Click OK to send the data from your computer to the 60D and register your lenses.
7. **Activate correction.** When a newly registered lens is mounted on the camera, you will be able to activate the anti-vignetting feature for that lens from the Set-up 1 menu.

Red-Eye Reduction

Options: Disable, Enable

Although your 60D has a fairly effective red-eye reduction flash mode, it is unable, on its own, to totally *eliminate* the red-eye effects that occur when an electronic flash (or, rarely, illumination from other sources) bounces off the retinas of the eye and into the camera lens. Animals seem to suffer from yellow or green glowing pupils, instead; the effect is equally undesirable. The effect is worst under low-light conditions (exactly when you might be using a flash) as the pupils expand to allow more light to reach the retinas. The best you can hope for is to *reduce* or minimize the red-eye effect.

The best way to truly eliminate red-eye is to raise the flash up off the camera so its illumination approaches the eye from an angle that won't reflect directly back to the retina and into the lens. The extra height of the built-in flash may not be sufficient, however. If you're working with your 60D's built-in flash, your only recourse may be to switch the Red-Eye Reduction feature menu choice. It causes a lamp on the front of the camera to illuminate with a half-press of the shutter release button, which may cause your subjects' pupils to contract, decreasing the amount of the red-eye effect. You may have to ask your subject to look at the lamp to gain maximum effect.

Flash Control

Options: Flash Firing, Built-in Flash function, External Flash function, External Flash C.Fn. Setting, Clear External Flash C.Fn. Setting

This multi-level menu entry includes five settings for controlling the Canon EOS 60D's built-in, pop-up electronic flash unit, as well as accessory flash units you can attach to the camera (see left, Figure 3.4).

Flash Firing

Use this option to enable or disable the built-in electronic flash. You might want to totally disable the 60D's flash (both built-in and accessory flash) when shooting in sensitive environments, such as concerts, in museums, or during religious ceremonies. When disabled, the flash cannot fire even if you accidentally elevate

Flash control		External flash func. setting	
Flash firing	Enable	Flash mode	E-TTL II
Built-in flash func. setting		Shutter sync.	1st. curtain
External flash func. setting		FEB	3..2..1..0..1..2..3
External flash C. Fn. setting		exp. comp.	3..2..1..0..1..2..3
Clear ext. flash C. Fn. set.		E-TTL II	Evaluative
		Zoom	Auto
MENU 		INFO	Clear flash settings

Figure 3.4 The Flash Control menu entry has five setting submenus (left).

it, or have an accessory flash attached and turned on. If you turn off the flash here, it is disabled in any exposure mode.

Built-in Flash Function Setting

There are five main choices for this menu screen, plus two additional options:

- **Flash mode.** Your choices here are E-TTL II and Manual flash.
- **Shutter sync.** You can choose 1st curtain sync, which fires the pre-flash used to calculate the exposure before the shutter opens, followed by the main flash as soon as the shutter is completely open. This is the default mode, and you'll generally perceive the pre-flash and main flash as a single burst. Alternatively, you can select 2nd curtain sync, which fires the pre-flash as soon as the shutter opens, and then triggers the main flash in a second burst at the end of the exposure, just before the shutter starts to close. (If the shutter speed is slow enough, you may clearly see both the pre-flash and main flash as separate bursts of light.) This action allows photographing a blurred trail of light of moving objects with sharp flash exposures at the beginning and the end of the exposure. This type of flash exposure is slightly different from what some other cameras produce using 2nd curtain sync.

If you have an external compatible Speedlite attached, you can also choose High-speed sync, which allows you to use shutter speeds faster than 1/250th second, using the External Flash Function Setting menu, described next.

- **Flash exposure compensation.** If you'd rather adjust flash exposure using a menu than with the ISO/Flash exposure compensation button, you can do that here. Select this option with the SET button, then dial in the amount of flash EV compensation you want using the Multi-controller or Quick Control Dial. The EV that was in place before you started to make your adjustment is shown as a blue indicator, so you can return to that value quickly. Press SET again to confirm your change, then press the MENU button twice to exit.

- **E-TTL II.** You can choose Evaluative (Matrix) or Average metering modes for the electronic flash exposure meter. Evaluative looks at selected areas in the scene to calculate exposure, while average calculates flash exposure by reading the entire scene.
- **Wireless functions.** These choices, which include Mode, Channel, Firing Group, and other options are used only when you're working in wireless mode to control an external flash. If you've disabled wireless functions, the other options don't appear on the menu.
- **Clear flash settings.** When the Built-in Flash Func. Setting (or External Flash Func. Setting) screen is shown, you can press the INFO. button to produce a screen that allows you to clear all the flash settings.

External Flash Function Setting

You can access this menu only when you have a compatible electronic flash attached and switched on. The settings available are shown at right in Figure 3.4. If you press the INFO. button while adjusting flash settings, both the changes made to the settings of an attached external flash and to the built-in flash will be cleared.

- **Flash mode.** This entry allows you to set the flash mode for the external flash, from E-TTL II, Manual Flash, MULTI Flash, TTL, AutoExtFlash, and Man.ExtFlash. The first three are identical to the built-in flash modes described earlier. The second three are optional metering modes available with certain flash units, such as the 580 EX II, and are available for those who might need one of those less sophisticated flash metering systems. While I don't recommend any of the latter three, you can find more information about them in your flash's manual.
- **Shutter sync.** As with the 60D's built-in flash, you can choose 1st curtain sync, which fires the flash as soon as the shutter is completely open (this is the default mode). Alternatively, you can select 2nd curtain sync, which fires the flash as soon as the shutter opens, and then triggers a second flash at the end of the exposure, just before the shutter starts to close.
- **FEB.** Flash Exposure Bracketing (FEB) operates similarly to ordinary exposure bracketing, providing a series of different exposures to improve your chances of getting the exact right exposure, or to provide alternative renditions for creative purposes.
- **Flash exposure compensation.** You can adjust flash exposure using a menu here. Select this option with the SET button, then dial in the amount of flash EV compensation you want using the Multi-controller or Quick Control Dial. The EV that was in place before you started to make your

adjustment is shown as a blue indicator, so you can return to that value quickly. Press SET again to confirm your change, then press the MENU button twice to exit.

- **E-TTL II.** You can choose Evaluative (matrix) or Average metering modes for the electronic flash exposure meter. Evaluative looks at selected areas in the scene to calculate exposure, while Average calculates flash exposure by reading the entire scene.
- **Zoom.** Some flash units can vary their coverage to better match the field of view of your lens at a particular focal length. You can allow the external flash to zoom automatically, based on information provided, or manually, using a zoom button on the flash itself. This setting is disabled when using a flash like the Canon 270EX II, which does not have zooming capability.

External Flash Custom Function Setting

Many external Speedlites from Canon include their own list of Custom Functions, which can be used to specify things like flash metering mode and flash bracketing sequences, as well as more sophisticated features, such as modeling light/flash (if available), use of external power sources (if attached), and functions of any slave unit attached to the external flash. This menu entry allows you to set an external flash unit's Custom Functions from your 60D's menu.

Clear External Flash Custom Function Setting

This entry allows you to zero-out any changes you've made to your external flash's Custom Functions, and return them to their factory default settings.

Exposure Compensation/Automatic Exposure Bracketing

Options: 1/3 stop increments, plus/minus stops

The first entry on the Shooting 2 menu is Expo. Comp./AEB, or Exposure Compensation and Automatic Exposure Bracketing. (See Figure 3.5.) Exposure Compensation (added/subtracted by rotating the Quick Control Dial while this menu screen is visible) increases or decreases exposure from the metered value.

Exposure bracketing using the 60D's AEB feature is a way to shoot several consecutive exposures using different settings, to improve the odds that one will be exactly right. Automatic Exposure Bracketing is also an excellent way of creating the base exposures you'll need when you want to combine several shots to create a High Dynamic Range (HDR) image.

To activate AEB, select this menu choice, then rotate the Main Dial to spread or contract the three dots beneath the scale until you've defined the range you want the bracket to cover, shown as full-stop jumps in Figure 3.6. Then, rotate the Quick Control Dial to move the brackets right or left, biasing the bracketing towards underexposure (rotate left) or overexposure (rotate right).

When AEB is activated, the three bracketed shots will be exposed in this sequence: metered exposure, decreased exposure, increased exposure (unless you've redefined the bracketing sequence to decreased exposure, metered exposure, increased exposure using C.Fn I-05).

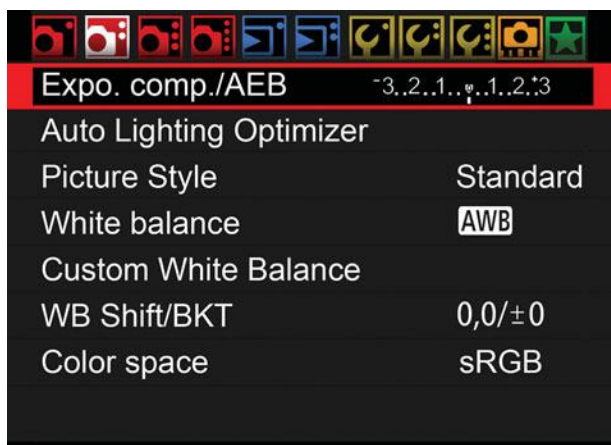


Figure 3.5

Exposure Compensation/Exposure Bracketing is the first entry in the Shooting 2 menu.



Figure 3.6

Set the range of the three bracketed exposures.

Auto Lighting Optimizer

Options: Disable, Low, Standard, Strong

Auto Lighting Optimizer provides a partial fix for JPEG images that are too dark or flat. The Auto Lighting Optimizer improves them—as you shoot—by increasing both the brightness and contrast as required. The feature is used automatically at the Standard setting in Basic Zone modes, but can be activated here for Creative Zone modes, Program, Aperture-priority, and Shutter-priority modes (but not Manual mode). You can select from four settings: Standard (the default value), Low, Strong, and Disable. I prefer to leave it set on Disable most of the time, and use Standard mode when I see that a particular scene is coming out too dark when I review the photos on the LCD. If that doesn't help, I may shift into Strong mode—but still take a few shots with the feature disabled in case I decide back at my computer screen that my lighting hasn't actually been “optimized.”

Picture Style

Options: Standard, Portrait, Landscape, Neutral, Faithful, Monochrome, User Def 1, User Def 2, User Def 3

The Canon EOS 60D has five preset color Picture Styles, for Standard, Portrait, Landscape, Neutral, and Faithful pictures, plus three user-definable settings called User Def. 1, User Def. 2, and User Def. 3, which you can define to apply to any sort of shooting situation you want, such as sports, architecture, or baby pictures. There is also a sixth Monochrome Picture Style that allows you to adjust filter effects or add color toning to your black-and-white images. See Figure 3.7 for the main Picture Style menu.

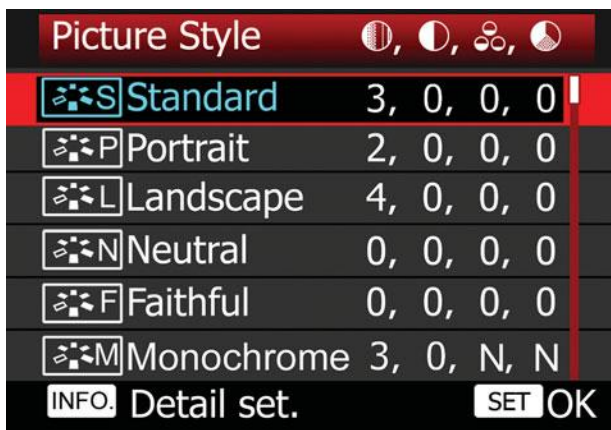


Figure 3.7

Nine different Picture Styles are available from this scrolling menu; these six plus three User Def. styles not shown.

Tip

As with the Color Space menu entry, the full range of Picture Styles can be applied directly *only* to JPEG images shot using P, Tv, Av, and M exposure modes. When using Full Auto, the Canon EOS 60D selects the Standard Picture Style. In Creative Auto, you can't access the full Picture Styles. You can choose from Standard, Portrait, Landscape, or Monochrome modes (only) using the Quick Control screen (press the Q button to access it). Any RAW format file can be adjusted to any Picture Style you want when the photo is imported into your image editor.

You can adjust any of those “canned” Picture Styles to settings you prefer, or work with the three User Definition files to create brand-new styles that are all your own. The parameters you work with are sharpness, contrast, and saturation. The predefined Picture Styles are as follows:

- **Standard.** This Picture Style, the default, applies a set of parameters, including boosted sharpness, that is useful for most picture taking, and which is applied automatically when using Basic Zone modes other than Portrait or Landscape.
- **Portrait.** This style boosts saturation for richer colors when shooting portraits, which is particularly beneficial for women and children, while reducing sharpness slightly to provide more flattering skin texture. The Basic Mode Portrait setting uses this Picture Style. You might prefer the Faithful style for portraits of men when you want a more rugged or masculine look, or when you want to emphasize character lines in the faces of older subjects of either gender.
- **Landscape.** This style increases the saturation of blues and greens, and increases both color saturation and sharpness for more vivid landscape images. The Basic Zone Landscape mode uses this setting.
- **Neutral.** This Picture Style is a less saturated and lower contrast version of the Standard style. Use it when you want a more muted look to your images, or when the photos you are taking seem too bright and contrasty (say, at the beach on a sunny day).
- **Faithful.** The goal of this style is to render the colors of your image as accurately as possible, roughly in the same relationships as seen by the eye.

- **Monochrome.** Use this Picture Style to create black-and-white photos in the camera. If you're shooting JPEG only, the colors are gone forever. But if you're shooting JPEG+RAW, sRAW1, or sRAW2, you can convert the RAW files to color as you import them into your image editor, even if you've shot using the Monochrome Picture Style. Your 60D displays the images in black-and-white on the screen during playback, but the colors are there in the RAW file for later retrieval.

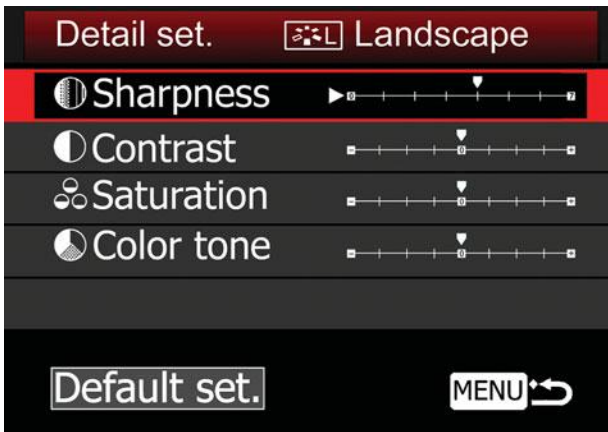
Selecting Picture Styles

One way is to choose Picture Styles from the Shooting 2 menu and press SET to produce the main Picture Style menu screen. Use the Quick Control Dial to rotate among the nine choices. The current settings for each Picture Style are shown on the right half of the screen. Press SET to activate your choice. Then press the MENU button to exit the menu system. You can also press the Q button and navigate to the Picture Styles section, and press SET. Then use the Quick Control Dial to scroll through the list of available styles on the screen that appears. When you use this method, the current settings for a particular style are shown *only* when you've highlighted that style. Press SET to activate the style of your choice.

Defining Picture Styles

You can change one of the existing Picture Styles or define your own whenever the Shooting 2 menu version of the Picture Styles menu, or the pop-up selection screen is visible. Just press the INFO. button when either screen is on the LCD. Follow these steps:

1. Use the Quick Control Dial to scroll to the style you'd like to adjust.
2. Press the INFO. button to choose Detail Set.
3. Use the Quick Control Dial to scroll among the four parameters, plus Default Set. at the bottom of the screen, which restores the values to the preset numbers.
4. Press SET to change the values of one of the four parameters. If you're redefining one of the default presets, the menu screen will look like the figure (Figure 3.8), which represents the Landscape Picture Style.
5. Use the Quick Control Dial to move the triangle to the value you want to use. Note that the previous value remains on the scale, represented by a gray triangle. This makes it easy to return to the original setting if you want.
6. Press the SET button to lock in that value, then press the MENU button three times to back out of the menu system.

**Figure 3.8**

Each parameter can be changed separately.

Any Picture Style that has been changed from its defaults will be shown in the Picture Style menu with blue highlighting the altered parameter. You don't have to worry about changing a Picture Style and then forgetting that you've modified it. A quick glance at the Picture Style menu will show you which styles and parameters have been changed.

Making changes in the Monochrome Picture Style is slightly different, as the Saturation and Color Tone parameters are replaced with Filter Effect and Toning Effect options. (Keep in mind that once you've taken a photo using a Monochrome Picture Style, you can't convert the image back to full color.) You can choose from Yellow, Orange, Red, Green filters, or None, and specify Sepia, Blue, Purple, or Green toning, or None. You can still set the Sharpness and Contrast parameters that are available with the other Picture Styles.

Adjusting Styles with the Picture Style Editor

The Picture Style Editor allows you to create your own custom Picture Styles, or edit existing styles, including the Standard, Landscape, Faithful, and other predefined settings already present in your EOS 60D. You can change sharpness, contrast, color saturation, and color tone—and a lot more—and then save the modifications as a PF2 file that can be uploaded to the camera, or used by Digital Photo Professional to modify a RAW image as it is imported.

Get More Picture Styles

I've found that careful Googling can unearth other Picture Styles that helpful fellow EOS owners have made available, and even a few from the helpful Canon company itself. Try the additional styles Canon offers.

FILTERS VS. TONING

Although some of the color choices overlap, you'll get very different looks when choosing between Filter Effects and Toning Effects. Filter Effects add no color to the monochrome image. Instead, they reproduce the look of black-and-white film that has been shot through a color filter. That is, Yellow will make the sky darker and the clouds will stand out more, whereas Orange makes the sky even darker and sunsets more full of detail. The Red filter produces the darkest sky of all and darkens green objects, such as leaves. Human skin may appear lighter than normal. The Green filter has the opposite effect on leaves, making them appear lighter in tone. Figure 3.9 (left) shows the same scene shot with no filter, then Yellow, Green, and Red filters.

The Sepia, Blue, Purple, and Green toning effects, on the other hand, all add a color cast to your monochrome image. Use these when you want an old-time look or a special effect, without bothering to recolor your shots in an image editor. Figure 3.9 (right) shows the various toning effects available.



Figure 3.9 Left: No filter (upper left); Yellow filter (upper right); Green filter (lower left); and Red filter (lower right). Right: Select from among four color filters in the Monochrome Picture Style, including Sepia (top left); Blue (top right); Purple (lower left); and Green (lower right).

They include:

- **Studio Portrait.** Compared to the Portrait style built into the camera, this one, Canon says, expresses translucent skin in smooth tones, but with less contrast. (Similar to films in the pre-digital age that were intended for studio portraiture.)
- **Snapshot Portrait.** This is another “translucent skin” style, but with increased contrast with enhanced contrast indoors or out.
- **Nostalgia.** This style adds an amber tone to your images, while reducing the saturation of blue and green tones.
- **Clear.** This style adds contrast for what Canon says is additional “depth and clarity.”
- **Twilight.** Adds a purple tone to the sky just before and after sunset or sunrise.
- **Emerald.** Emphasizes blues and greens.
- **Autumn Hues.** Increases the richness of browns and red tones seen in Fall colors.

White Balance

Options: Auto, Daylight, Shade, Cloudy/Twilight/Tungsten, White Fluorescent Light, Flash, or Custom.

This menu entry allows you to choose one of the white balance preset values from among Auto, Daylight, Shade, Cloudy/Twilight/Sunset, Tungsten, White Fluorescent Light, Flash, or Custom. Once you’ve selected White Balance from the Shooting 2 menu, use the Quick Control Dial to choose a setting from the two columns of entries, then press the SET button to lock it in. If you choose the “K” entry, you can select an exact color temperature from 2,500K to 10,000K using the Main Dial.

Custom White Balance

If automatic white balance or one of the six preset settings available (Daylight, Shade, Cloudy/Twilight/Sunset, Tungsten, White Fluorescent, or Flash) aren’t suitable, you can set a custom white balance using this menu option. The custom setting you establish will then be applied whenever you select Custom using the White Balance menu entry described earlier.

To set the white balance to an appropriate color temperature under the current ambient lighting conditions, focus manually (with the lens set on MF) on a plain white or gray object, such as a card or wall, making sure the object fills the Spot metering circle in the center of the viewfinder. Then, take a photo. Next press

the MENU button and select Custom WB from the Shooting 2 menu. Use the Quick Control Dial until the reference image you just took appears and press the SET button to store the white balance of the image as your Custom setting.

White Balance Shift and Bracketing

White balance shift allows you to dial in a white balance color bias along the blue-yellow/amber dimensions, and/or magenta/green scale. In other words, you can set your color balance so that it is a little bluer or yellower (only), a little more magenta or green (only), or a combination of the two bias dimensions. You can also bracket exposures, taking several consecutive pictures each with a slightly different color balance biased in the directions you specify.

The process is a little easier to visualize if you look at Figure 3.10. The center intersection of lines BA and GM (remember high school geometry!) is the point of zero bias. Move the point at that intersection using the Multi-controller to locate it at any point on the graph using the blue-yellow/amber and green-magenta coordinates. The amount of shift will be displayed in the SHIFT box to the right of the graph.

White balance bracketing is like white balance shifting, only the bracketed changes occur along the bias axis you specify. The three squares in Figure 3.10 show that the white balance bracketing will occur in two-stop steps along the blue-yellow/amber axis. The amount of the bracketing is shown in the lower box to the right of the graph.

This form of bracketing is similar to exposure bracketing, but with the added dimension of hue. Bias bracketing can be performed in any JPEG-only mode.

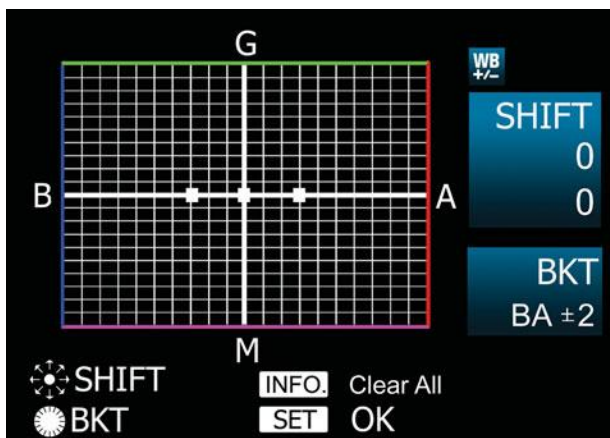


Figure 3.10

Use the Quick Control Dial to specify color balance bracketing using green-magenta bias or to specify blue-yellow/amber bias.

You can't use any RAW format or RAW+JPEG format because the RAW files already contain the information needed to fine-tune the white balance and white balance bias.

When you select WB SHIFT/BKT, the adjustment screen appears. First, you turn the Quick Control Dial to set the range of the shift in either the green/magenta dimension (turn the dial to the left to change the vertical separation of the three dots representing the separate exposures) or in the blue-yellow/amber dimension by turning the Quick Control Dial to the right. Use the Multi-controller to move the bracket set around within the color space, and outside the green-magenta or blue-yellow/amber axes.

Color Space

Options: Adobe RGB, sRGB

You can select one of two different color spaces (also called *color gamuts*) using this menu entry. One color space is named *Adobe RGB* (because it was developed by Adobe Systems in 1998), while the other is called *sRGB* (supposedly because it is the *standard* RGB color space). These two color gamuts define a specific set of colors that can be applied to the images your 60D captures.

The Color Space menu choice applies directly to JPEG images shot using P, Tv, Av, and M exposure modes. When you're using Full Auto or Creative Auto modes, the 60D uses the sRGB color space for all the JPEG images you take. RAW, mRAW, or sRAW images are a special case. They have the information for *both* sRGB and Adobe RGB, but when you load such photos into your image editor, it will default to sRGB (with Full Auto or Creative Auto shots) or the color space specified here unless you change that setting while importing the photos.

Dust Delete Data

Options: None (Captures data used to erase dust spots)

This menu choice, the first in the Shooting 3 menu screen (not illustrated in this book, it contains only two entries), lets you “take a picture” of any dust or other particles that may be adhering to your sensor. The 60D will then append information about the location of this dust to your photos, so that the Digital Photo Professional software can use this reference information to identify dust in your images and remove it automatically. You should capture a Dust Delete Data photo from time to time as your final line of defense against sensor dust.

To use this feature, select Dust Delete Data. Select OK and press the SET button. The camera will first perform a self-cleaning operation by applying ultrasonic vibration to the low-pass filter that resides on top of the sensor. Then, a screen will appear asking you to press the shutter button. Point the 60D at a solid white card with the lens set on manual focus and rotate the focus ring to infinity. When you press the shutter release, the camera takes a photo of the card using Aperture-priority and *f/22* (which provides enough depth-of-field [actually, in this case *depth-of-focus*] to image the dust sharply). The “picture” is not saved to your memory card but, rather, is stored in a special memory area in the camera. Finally, a Data Obtained screen appears. If the 60D was unable to capture the data, you’ll be asked to repeat the process. Make sure the camera is pointed at a plain white surface that’s evenly illuminated.

The Dust Delete Data information is retained in the camera until you update it by taking a new “picture.” The 60D adds the information to each image file automatically.

ISO Auto

When you select Auto for your ISO sensitivity setting, the 60D will choose an ISO appropriate for the amount of illumination available; that is, a higher ISO in dimmer conditions, and a lower ISO for brighter scenes. The actual ISO in use will be displayed on the top-panel LCD when you press the shutter button halfway, so you aren’t necessarily in the dark (so to speak) about the ISO setting being applied. The actual range used depends on the shooting mode you’re working with, and the maximum you set using this menu entry.

This menu entry allows you to place a limitation on the ranges selected as outlined in Table 3.1 in certain shooting modes. Specifically:

- **P, Tv, Av, M modes.** You can select a maximum ISO that will be selected when using any of these modes. Choose from ISO 400, 800, 1600, 3200, or 6400. Use this capability to minimize the amount of noise that might result by blocking the 60D’s ability to automatically select an ISO sensitivity higher than the limit you choose.
- **P and Basic Zone modes (except Night Portrait) with bounce flash.** If you select ISO 400 or ISO 800 as your maximum, then the 60D will adhere to that limitation when choosing an ISO speed with bounce flash and an external Speedlite. If you set the max to ISO 1600 or higher, then the 60D will apply the ISO 400-1600 range when using bounce flash with external flash units in these modes.

Table 3.1 Automatic ISO Ranges

Shooting Mode	ISO Range
Basic Zone modes other than Portrait mode	ISO 100-3200 (Auto)
Portrait mode	ISO 100 (Fixed)
Bulb	ISO 400 (Fixed)
All modes, direct flash	ISO 400 (Fixed, except if overexposure results, then ISO 100-400)
Program mode/Basic Zone modes except Night Portrait, with bounce flash and external Speedlite	ISO 400-1600 (Auto)
Program, Tv, Av, M modes	ISO 100-6400 (Auto)

Live View Shooting Settings

Options: Enable/Disable

This menu entry is the first in the Shooting 4 menu (see Figure 3.11). All of the settings on this tab pertain to the 60D's Live View functions. This first one is easy; it has just two options, Enable and Disable. When set to Enable, you can activate Live View by pressing the Start/Stop button on the back of the camera (it's located immediately to the right of the viewfinder window). Choose Disable, and use of Live View is blocked.

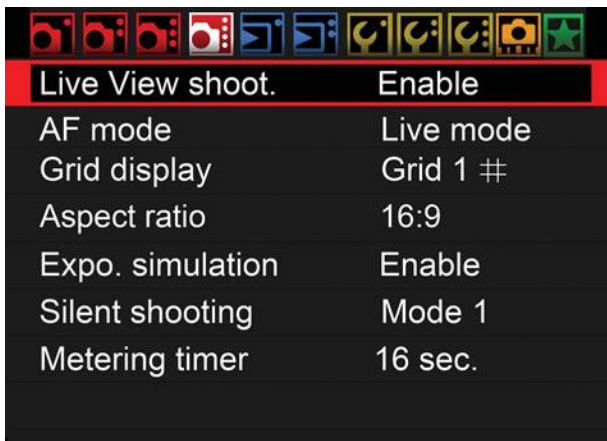


Figure 3.11

Most of the settings on the Shooting 4 menu involve Live View functions.

AF Mode

Options: Quick Mode, Live Mode, Live Mode (Face Detection)

Indicates the autofocus mode used for Live View shooting: Quick Mode, Live Mode, and Live Mode (Face Detection), as described in Chapter 6.

Grid Display

Options: Enable, Disable

This provides a Live View “rule of thirds” grids on the LCD to help with alignment and composition. You can enable a separate grid for the optical viewfinder, using the VF Grid Display option in the Set-up 2 menu, described in Chapter 4.

Aspect Ratio

Options: 3:2, 4:3, 16:9, 1:1

Select the proportions of an image captured in Live View, from 3:2 (standard) to 4:3, 16:9, and 1:1 (square).

Exposure Simulation

Options: Enable, Disable

Causes the Live View LCD to mimic the amount of exposure, underexposure, or overexposure your image will have when taken using the current *f*/stop, shutter speed, and ISO setting. Your choices are Enable and Disable.

Silent Shooting

Options: Mode 1, Mode 2

Provides a quieter shutter sound when taking pictures using Live View. You can select from two modes: Mode 1 reduces the noise level of the shutter, but allows taking several shots in succession, including continuous shooting at about 5 fps. Mode 2 reduces the noise even further by delaying the action when you press the shutter release down (only a slight click is heard). When you let up slightly on the shutter release, the shot is taken, producing another soft click. Continuous shooting is not possible in Mode 2. Silent shooting can also be disabled entirely.

Metering Timer

Options: 4, 16, 10 sec., 1, 10, 30 min.

This option turns off the exposure meter after a specified period of time (4, 16, or 30 seconds, plus 1, 10, and 30 minutes) to save power, as Live View can be quite a juice hog when you're displaying an image on the LCD for more than a few seconds at a time.

Playback 1 & 2 Menu Options

The two blue-coded Playback menus are where you select options related to the display, review, and printing of the photos you've taken. The choices you'll find include:

- Protect images
- Rotate
- Erase images
- Print order
- Creative filters
- Resize
- RAW image processing
- Highlight alert
- AF point disp.
- Histogram
- Image jump with Main Dial
- Slide show
- Rating
- Ctrl over HDMI

Protect

Option: Protect, Unprotect Images

This is the first of seven entries in Playback 1 menu (see Figure 3.12). If you want to keep an image from being accidentally erased (either with the Erase button or by using the Erase Images menu entry), you can mark that image for protection. To protect one or more images, press the MENU button and choose Protect. Then, select from the following options:

- Select images
- All images in folder
- Unprotect all images in folder
- All images on card
- Unprotect all images on card

If you choose the first option, you can view and select individual images by pressing the SET button when they are displayed on the screen. A key icon will appear at the upper edge of the information display while still in the protection screen, and when reviewing that image later. To remove protection, repeat the process. You can scroll among the other images on your memory card and protect/unprotect them in the same way. Image protection will not save your images from removal when the card is reformatted.

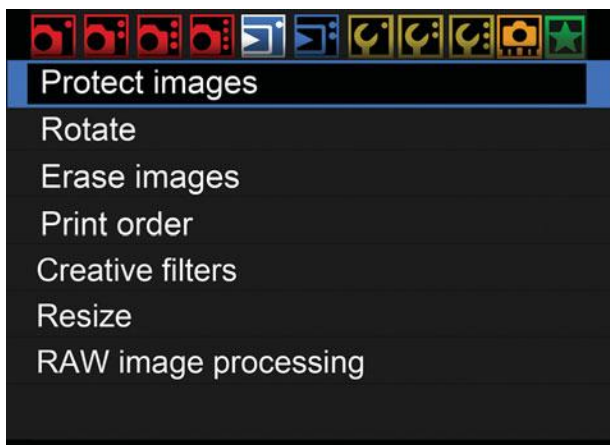


Figure 3.12
The Playback 1 menu.

Rotate

While you can set the EOS 60D to automatically rotate images taken in a vertical orientation using the Auto Rotate option in the Set-up 1 menu (as described in Chapter 4), you can manually rotate an image during playback using this menu selection. Select Rotate from the Playback 1 menu, use the Quick Control Dial to page through the available images on your memory card until the one you want to rotate appears, then press SET. The image will appear on the screen rotated 90 degrees, as shown in Figure 3.13. Press SET again, and the image will be rotated 270 degrees.



Figure 3.13 A vertically oriented image that isn't rotated appears larger on the LCD, but rotation allows viewing the photo without turning the camera.

Erase Images

Options: Select, All Images

Choose this menu entry and you'll be given three choices: Select and Erase Images, All Images in Folder, and All Images on Card. The first option displays the most recent image. Press SET to mark that image for deletion, and then rotate the Quick Control Dial to view other images, using the SET button to mark those you want to delete. When finished marking pictures, press the Trash button, and you'll see a screen that says Erase Selected Images with two options, Cancel and OK. Use the Quick Control Dial to choose OK, then press the SET button to erase the images, or select Cancel and press the SET button to return to the selection screen. Press the MENU button to unmark your selections and return to the menu.

If you choose All Images in Folder, you'll be shown a list of available folders on your memory card. The All Images on Card choice deletes all the pictures on the card, except for those you've marked with the Protect command, and does not reformat the memory card.

Print Order

Options: Assemble Print Order

The EOS 60D supports the DPOF (Digital Print Order Format) that is now almost universally used by digital cameras to specify which images on your memory card should be printed, and the number of prints desired of each image. This information is recorded on the memory card, and can be interpreted by a compatible printer when the camera is linked to the printer using the USB cable, or when the memory card is inserted into a card reader slot on the printer itself. Photo labs are also equipped to read this data and make prints when you supply your memory card to them.

Creative Filters

This menu entry allows you to apply some interesting effects to images you've already taken, and save a copy alongside the original. You can select images, and then choose from among four effects:

- **Grainy B/W.** Creates a grainy monochrome image. You can adjust contrast among Low, Normal, and Strong settings.
- **Soft Focus.** Blur your image using Low, Normal, and Strong options.
- **Toy Camera Effect.** Darkens the corners of an image, much as a toy camera does, and adds a warm or cool tone (or none), as you wish.

- **Miniature Effect.** This is a clever option, which mimics tilt/shift lens effects that angle the lens off the axis of the sensor plane to drastically change the plane of focus, producing the sort of look you get when viewing some photographs of a diorama, or miniature scene. All you need to do is specify the area of the image that you want to remain sharp and you'll end up with a version like the one shown in Figure 3.14.



Figure 3.14 Choose the area for sharp focus by moving the white box within the frame. The resulting image looks like a miniature town, perhaps for a toy train layout.

Resize

If you've already taken an image and would like to create a smaller version (say, to send by e-mail), you can create one from this menu entry. Just follow these steps:

1. **Choose Resize.** Select this menu entry from the Playback 1 menu.
2. **View images to resize.** You can scroll through the available images with the QCD, or press the Thumbnail/Reduce Image button to view thumbnails and select from those. Only images that can be resized are shown. They include JPEG Large, Medium, Small 1, and Small 2 images. Small 3 and RAW images of any type cannot be resized.
3. **Select an image.** Press SET to select an image to resize. A pop-up menu will appear on the screen offering the choice of reduced size images. These include M (Medium: 8MP, 3456 × 2304 pixels); S1 (Small 1: 4.5MP, 2592 × 1728 pixels); S2 (Small 2: 2.5MP, 1920 × 1280 pixels); or S3 (Small 3, .3MP, 720 × 480 pixels). You cannot resize an image to a size that is larger than its current size; that is, you cannot save a JPEG Medium image as JPEG Large.
4. **Resize and save.** Press SET to save as a new file, and confirm your choice by selecting OK from the screen that pops up, or Cancel to exit without saving a new version. The old version of the image is untouched.

RAW Image Processing

This entry allows you to take a RAW image you've captured, and change some of the settings before saving a new copy as a JPEG image. Now you've got Digital Photo Professional right in your camera—except that you must work with full RAW images; this capability doesn't function with mRAW or sRAW images.

Just select the image you want to process, and use the Multi-controller left/right/up/down buttons to select from among the available settings. Use the Quick Control Dial to modify a highlighted setting. To cancel your changes, press the INFO. button. The parameters you can change include Brightness, White Balance, Picture Style, Auto Lighting Optimizer, High ISO Speed Noise Reduction, Image Quality and Resolution, Color Space, Peripheral Illumination Correction, Distortion Correction, and Chromatic Aberration Correction. The original RAW file remains unchanged, and a new version is saved as a JPEG file with a new number in a new folder.

Highlight Alert

Option: Enable, Disable

This menu entry, the first item on the Playback 2 menu tab (shown in Figure 3.15), has just two options: Enable and Disable. When set to Enable, overexposed highlight areas in your image will blink during picture review. That's your cue to consider using exposure compensation to reduce exposure, unless a minus-EV setting will cause loss of shadow detail that you want to preserve.



Figure 3.15
Playback 2
menu.

Autofocus Points Display

Options: Enable, Disable

The 60D can display the autofocus point (or points) that was active when the picture was taken as a tiny red square when the full information display is chosen for playback. (Some users mistake the red square in the playback thumbnail as a “hot” pixel.) Choose AF Point Disp. in the Playback 2 menu and select Enable or Disable. There is little reason not to view this information, so most leave this setting switched on at all times.

Histogram

The 60D can show either a Brightness histogram or set of three separate Red, Green, and Blue histograms in the full information display during picture review, or, it can show you both types of histogram in the partial information display.

Brightness histograms give you information about the overall tonal values present in the image. The RGB histograms can show more advanced users valuable data about specific channels that might be “clipped” (details are lost in the shadows or highlights). This menu choice determines only how they are displayed during picture review. The amount of information displayed cycles through the following list as you repeatedly press the INFO. button:

- **Single image display.** Only the image itself is shown, with basic shooting information displayed in a band across the top of the image, as you can see at upper left in Figure 3.16.
- **Single image display+Image-recording quality.** Identical to Single image display, except that the image size, RAW format (if selected), and JPEG compression (if selected) are overlaid on the image in the lower-left corner of the frame.
- **Histogram display.** Both RGB and brightness histograms are shown, along with partial shooting information. This menu choice has no effect on the histograms shown in this display, which you can see at upper right in Figure 3.16.
- **Shooting information display.** Full shooting data is shown, along with either a brightness histogram (bottom left in Figure 3.16) or RGB histogram (bottom right in Figure 3.16). The type of histogram on view in this screen is determined by the setting you make in this menu choice. Select Histogram from the Playback 2 menu and choose Brightness or RGB.

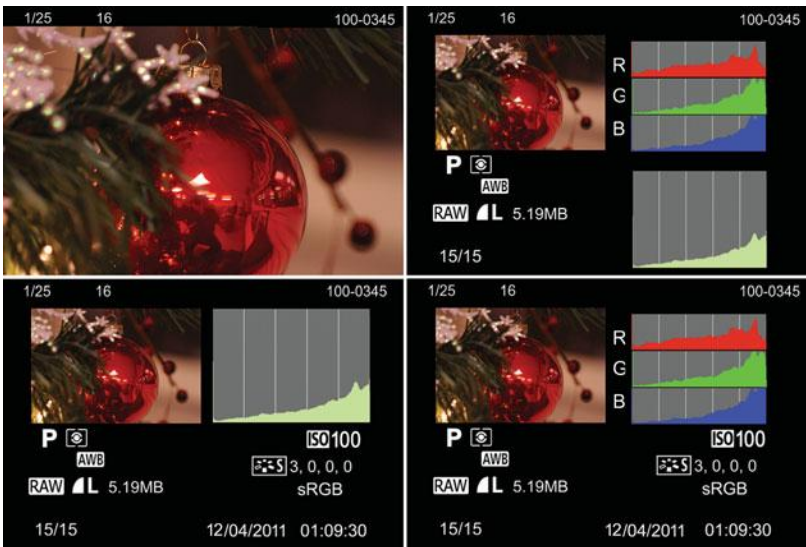
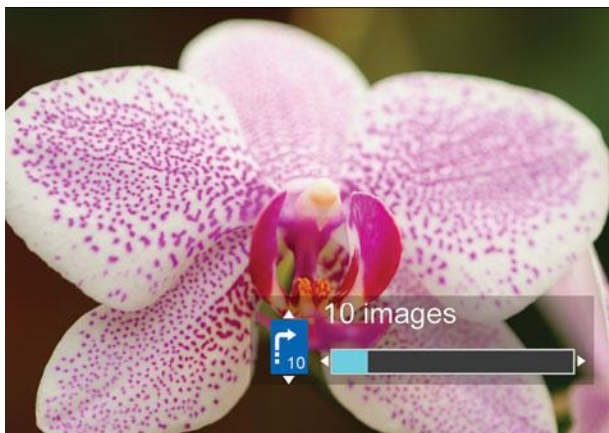


Figure 3.16 Press the INFO. button to cycle between Single image display (upper left); Single image display+Image-recording quality (not shown); Histogram display (upper right); Shooting information display with brightness histogram (bottom left); or RGB histogram (bottom right).

Image Jump with Main Dial

As first described in Chapter 2, you can leap ahead or back during picture review by rotating the Main Dial, using a variety of increments that you can select using this menu entry. The Jump method is shown briefly on the screen as you leap ahead to the next image displayed, as shown in Figure 3.17. Your options are as follows:

- **1 image.** Rotating the Main Dial one click jumps forward or back 1 image.
- **10 images.** Rotating the Main Dial one click jumps forward or back 10 images.
- **100 images.** Rotating the Main Dial one click jumps forward or back 100 images.
- **Date.** Rotating the Main Dial one click jumps forward or back to the first image taken on the next or previous calendar date.
- **Folder.** Rotating the Main Dial one click jumps forward or back to the first image in the next folder available on your memory card (if one exists).

**Figure 3.17**

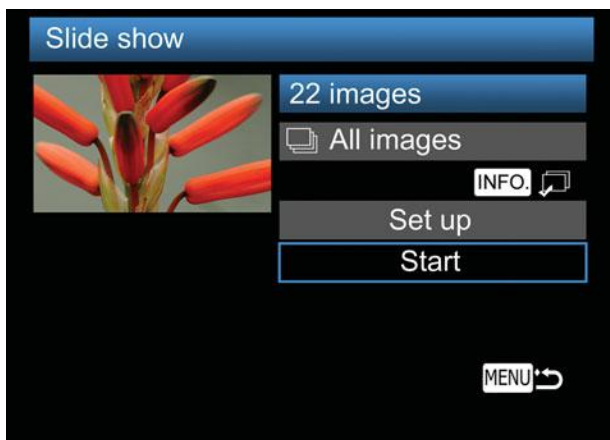
The Jump method is shown on the LCD briefly when you leap forward or back using the Main Dial.

- **Movies.** Rotating the Main Dial one click jumps forward or back, displaying movies you captured only.
- **Stills.** Rotating the Main Dial one click jumps forward or back, displaying still images only.
- **Rating.** Rotating the Main Dial one click jumps forward or back, displaying images by the ratings you've applied (as described next). Rotate the Main Dial to choose the rating parameter.

Slide Show

Slide Show (also called Auto Playback) is a convenient way to review images one after another, without the need to manually switch between them. To activate, just choose Slide Show from the Playback 2 menu. During playback, you can press the SET button to pause the “slide show” (in case you want to examine an image more closely), or the INFO. button to change the amount of information displayed on the screen with each image. For example, you might want to review a set of images and their histograms to judge the exposure of the group of pictures. To set up your slide show, follow these steps:

1. **Begin set up.** Choose Slide Show from the Playback 2 menu, pressing SET to display the screen shown in Figure 3.18.
2. **Choose image selection method.** Rotate the Quick Command Dial to All Images, and press SET. Then rotate the QCD to choose from All Images, Folder, or Date. Press SET to activate that selection mode. If you selected All Images, skip to Step 4.

**Figure 3.18**

Set up your slide show using this screen.

3. **Choose images.** If you've selected Folder or Date, press the INFO. button to produce a screen that allows you to select from the available folders, or the available image creation dates on your memory card. When you've chosen a folder or date, press SET to confirm your choice.
4. **Choose Play time and Repeat options.** Rotate the Quick Command Dial to highlight Set-up and press SET to produce a screen with playing time (1, 2, 3, or 5 seconds per image), and repeating options (On or Off). When you've specified either value, press the MENU button to confirm your choice, and then MENU once more to go back to the main Slide Show screen.
5. **Start the show.** Rotate the QCD to highlight Start and press SET to begin your show. (If you'd rather cancel the show you've just set up, press MENU instead.)
6. **Use show options during display.** Press SET to pause/restart; INFO. to cycle among the four information displays described in the section before this one; MENU to stop the show.

Rating

If you want to apply a quality rating to images or movies you've shot (or use the rating system to represent some other criteria), you can use this entry to give particular images one, two, three, four, or five stars; or turn the rating system off. The Image Jump function can display only images with a given rating.

1. Choose the Rating menu item.
2. Rotate the QCD to select an image or movie. Press the Thumbnail/Reduce Image button to display three images at once.

3. When an image or movie is visible, press the up/down buttons of the Multi-controller to apply a one- to five-star rating. The display shows how many images have been assigned each rating so far.
4. When finished rating, press the MENU button to exit.

Ctrl over HDMI

When your camera is connected to a TV that is compatible with the HDMI CEC standard, you can use the remote control to activate playback functions. You'll need a compatible TV, remote control, and an HDMI cable to connect your camera to the television. Then, choose Enable in this menu entry, and then follow the directions that came with your television and remote for selecting still photo and movie playback features. If your TV does not allow use of the remote, return to the menu selection and choose Disable to give the camera control of playback.

Chapter 4

Set-up 1, 2, 3, Custom Functions, and My Menu Settings

This chapter shows you how and why to use each of the options in the Set-up, Custom Functions, and My Menu sections of your 60D's menu system.

Set-up 1, 2, and 3 Menu Options

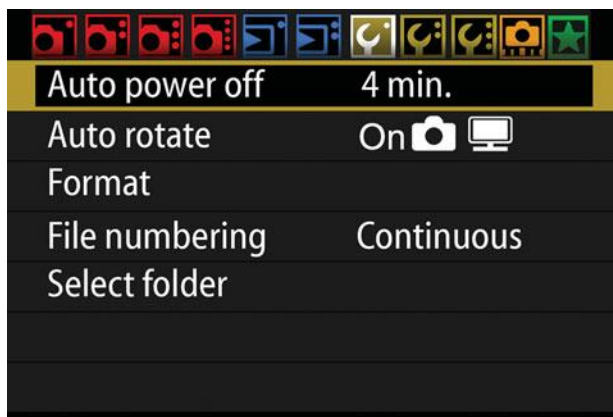
There are three yellow/gold-coded Set-up menus where you make adjustments on how your camera *behaves* during your shooting session, as differentiated from the Shooting menu, which adjusts how the pictures are actually taken. Your choices include the following:

- Auto power off
- Auto rotate
- Format
- File numbering
- Select folder
- LCD brightness
- Date/Time
- Language
- Video system
- Sensor cleaning
- Lock
- Battery info.
- INFO. button display options
- Camera user setting
- Copyright information
- Clear all camera settings
- Firmware Ver.

Auto Power Off

Options: 30 seconds, 1 min., 2 min., 4 min., 8 min., 15 min., Off

This menu entry is the first in the Set-up 1 menu (see Figure 4.1). It allows you to determine how long the 60D remains active before shutting itself off. You can select 30 sec., 1 min., 2 min., 4 min., 8 min., or 15 min., or Off, which leaves

**Figure 4.1**

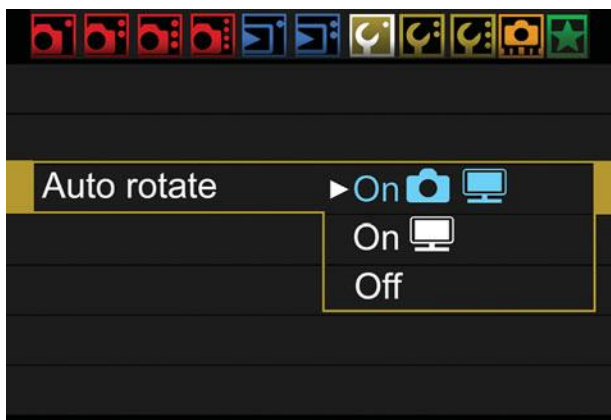
Select an automatic shut-off period to save battery power.

the camera turned on indefinitely—or until 30 minutes have passed. However, even if the camera has shut itself off, if the power switch remains in the On position, you can bring the camera back to life by pressing the shutter button halfway, or the DISP., Playback, or SET buttons.

Auto Rotate

Options: Camera/Computer, Computer Only, Off

You can turn this feature On or Off. When activated, the 60D rotates pictures taken in vertical orientation on the LCD screen so you don't have to turn the camera to view them comfortably. However, this orientation also means that the longest dimension of the image is shown using the shortest dimension of the LCD, so the picture is reduced in size. You have three options. The image can be autorotated when viewing in the camera *and* on your computer screen using your image editing/viewing software. The image can be marked to autorotate *only* when reviewing your image in your image editor or viewing software. This option allows you to have rotation applied when using your computer, while retaining the ability to maximize the image on your LCD in the camera. The third choice is Off. The image will not be rotated when displayed in the camera or with your computer. Note that if you switch Auto Rotate off, any pictures shot while the feature is disabled will not be automatically rotated when you turn Auto Rotate back on; information embedded in the image file when the photo *is taken* is used to determine whether autorotation is applied. (See Figure 4.2.)

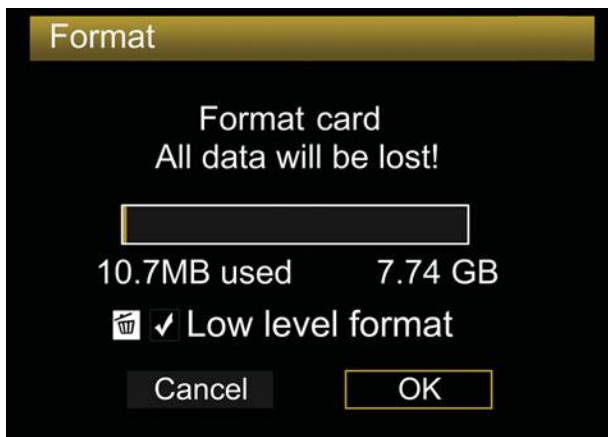
**Figure 4.2**

Choose autorotation both in the camera and on your computer display (top); only on your computer display (middle); or no automatic rotation (bottom).

Format

Options: Cancel, OK

Use this item to erase everything on your memory card and set up a fresh file system ready for use. When you select Format, you'll see a display like Figure 4.3, showing the capacity of the card, how much of that space is currently in use, and two choices at the bottom of the screen to Cancel or OK (proceed with the format). A yellow-gold bar appears on the screen to show the progress of the formatting step. (The optional low-level format invoked with the Trash button is a slower, but more thorough reformatting that can help restore a memory card that has picked up some bad sectors that aren't locked out by the normal format step.)

**Figure 4.3**

You must confirm the format step before the camera will erase a memory card.

File Numbering

Options: Continuous, Automatic Reset, Manual Reset

The 60D will automatically apply a file number to each picture you take, using consecutive numbering for all your photos over a long period of time, spanning many different memory cards, starting over from scratch when you insert a new card, or when you manually reset the numbers. Numbers are applied from 0001 to 9999, at which time the camera creates a new folder on the card (100, 101, 102, and so forth), so you can have 0001 to 9999 in folder 100, then numbering will start over in folder 101.

On the surface, the numbering system seems simple enough: In the menu, you can choose Continuous, Automatic Reset, or Manual Reset.

- **Continuous.** If you're using a blank/reformatted memory card, the 60D will apply a number that is one greater than the number stored in the camera's internal memory. If the card is not blank and contains images, then the next number will be one greater than the highest number on the card *or* in internal memory. (In other words, if you want to use continuous file numbering consistently, you must always use a card that is blank or freshly formatted.)
- **Automatic reset.** If you're using a blank/reformatted memory card, the next photo taken will be numbered 0001. If you use a card that is not blank, the next number will be one greater than the highest number found on the memory card. Each time you insert a memory card, the next number will either be 0001 or one higher than the highest already on the card.
- **Manual reset.** The 60D creates a new folder numbered one higher than the last folder created, and restarts the file numbers at 0001. Then, the camera uses the numbering scheme that was previously set, either Continuous or Automatic Reset, each time you subsequently insert a blank or non-blank memory card.

Select Folder

Options: Select Folder

Choose this menu option to create a folder where the images you capture will be stored on your memory card, or to switch between existing folders. Just follow these steps:

1. **Choose Select Folder.** Access the option from the Set-up 1 menu.
2. **View list of available folders.** The Select Folder screen pops up, with a list of the available folders on your memory card, with names like 100EOS60D, 101EOS60D, etc.
3. **Choose a different folder.** To store subsequent images in a different existing folder, rotate the Quick Control Dial to highlight the label for the folder

you want to use. When a folder that already has photos is selected, two thumbnails representing images in that folder are displayed at the right side of the screen.

4. **Confirm the folder.** Press SET to confirm your choice of an existing folder.
5. **Create new folder.** If you'd rather create a new folder, highlight Create Folder in the Select Folder screen and press SET. The name of the folder that will be created is displayed, along with a choice to Cancel or OK creating the folder. Press SET to confirm your choice.
6. **Exit.** Press MENU to return to the Set-up 1 menu.

LCD Brightness

Options: Adjust LCD Brightness

Choose this menu option, the first on the second Set-up menu tab (see at left in Figure 4.4), and a thumbnail image with a grayscale strip appears on the LCD, as shown at right in Figure 4.4. You can select both automatic brightness and manually set brightness.

- **Automatic brightness.** Use the Main Dial to toggle between Auto and Manual brightness settings. You may see the LCD dim when switching to Auto, as the camera adjusts for the light level.
- **Manual brightness.** If you select Manual, you can use the Quick Control Dial or the Multi-controller to adjust the brightness to a comfortable viewing level. Use the gray bars as a guide; you want to be able to see both the lightest and darkest steps at top and bottom, and not lose any of the steps in the middle. Brighter settings use more battery power, but can allow you to view an image on the LCD outdoors in bright sunlight. When you have the brightness you want, press the SET button to lock it in and return to the menu.

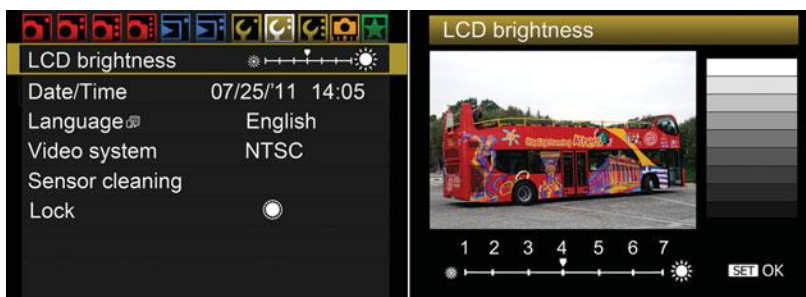


Figure 4.4 The Set-up 2 menu includes six options (left), including LCD brightness (right).

Date/Time

Options: Date/Time, Date Format

Use this option to set the date and time, which will be embedded in the image file along with exposure information and other data. As first outlined in Chapter 1, you can set the date and time by following these steps:

1. Access this menu entry from the Set-up 2 menu.
2. Rotate the (QCD) to move the highlighting down to the Date/Time entry.
3. Press the SET button in the center of the QCD to access the Date/Time Setting screen, shown in Figure 4.5.
4. Rotate the QCD to select the value you want to change. When the gold box highlights the month, day, year, hour, minute, second, or year format you want to adjust, press the SET button to activate that value. Time is set using a 24-hour clock. A pair of up/down pointing triangles appears above the value.
5. Rotate the QCD to adjust the value up or down. Press the SET button to confirm the value you've entered.
6. Repeat steps 4 and 5 for each of the other values you want to change. The date format can be switched from the default mm/dd/yy to yy/mm/dd or dd/mm/yy.
7. When finished, rotate the QCD to select either OK (if you're satisfied with your changes) or Cancel (if you'd like to return to the Set-up menu 2 screen without making any changes). Press SET to confirm your choice.
8. When finished setting the date and time, press the MENU button to exit, or just tap the shutter release.

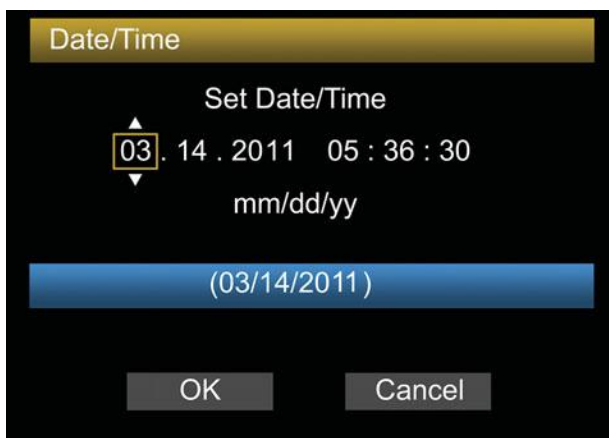


Figure 4.5

Adjust the time and date.

Language

Options: 25 languages

Choose from 25 languages for menu display, rotating the Quick Control Dial or using the Multi-controller until the language you want to select is highlighted. Press the SET button to activate. Your choices include English, German, French, Dutch, Danish, Portuguese, Finnish, Italian, Ukrainian, Norwegian, Swedish, Spanish, Greek, Russian, Polish, Czech, Magyar, Romanian, Turkish, Arabic, Thai, Simplified Chinese, Traditional Chinese, Korean, and Japanese.

Video System

Options: NTSC, PAL

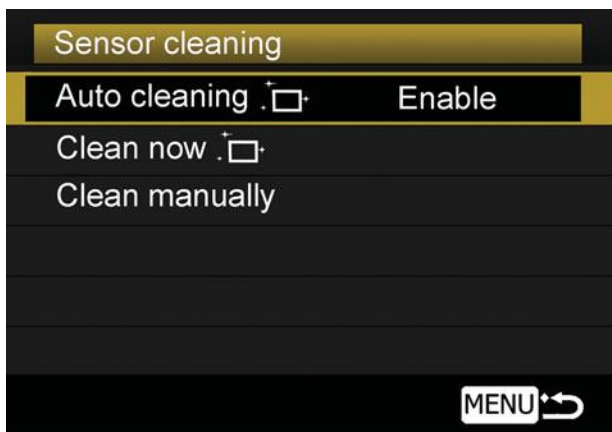
This setting controls the output of the 60D through the AV cable when you're displaying images on an external monitor. You can select either NTSC, used in the United States, Canada, Mexico, many Central, South American, and Caribbean countries, much of Asia, and other countries or PAL, which is used in the UK, much of Europe, Africa, India, China, and parts of the Middle East.

Sensor Cleaning

Option: Enable, Disable, Clean Now

One of the Canon EOS 60D's most useful features is the automatic sensor cleaning system that reduces or eliminates the need to clean your camera's sensor manually using brushes, swabs, or bulb blowers. Canon has applied anti-static coatings to the sensor and other portions of the camera body interior to counter charge build-ups that attract dust. A separate filter over the sensor vibrates ultrasonically each time the 60D is powered on or off, shaking loose any dust, which is captured by a sticky strip beneath the sensor.

Use this menu entry to enable or disable automatic sensor cleaning on power up and power down (select Auto Cleaning to choose) to activate automatic cleaning during a shooting session (select Clean Now). You can also choose the Clean Manually option to flip up the mirror and clean the sensor yourself with a blower, brush, or swab. If the battery level is too low to safely carry out the cleaning operation, the 60D will let you know and refuse to proceed, unless you use the optional AC Adapter Kit ACK-E6. (See Figure 4.6.)

**Figure 4.6**

Use this menu choice to activate automatic sensor cleaning or enable/disable it on power up.

Lock

Options: Enable/Disable

Use this to Enable/Disable the Quick Control Dial lock. The option works like this:

- **Enable.** When activated, the Quick Control Dial is locked when using Creative Zone modes, so that rotating it does not change exposure compensation in P, Tv, or Av modes, or the aperture when using Manual or Bulb exposure modes. All other uses of the QCD, such as menu navigation, are allowed. To temporarily unlock the QCD, press the UNLOCK button under the Quick Control Dial, and then rotate the dial to make your adjustment within about four seconds (sixteen seconds in Movie mode). Use this setting if you want to avoid accidental changes.
- **Disable.** The Quick Control Dial is always active, and if rotated will change exposure compensation values (in P, Tv, and Av modes) or the aperture in M or B modes. Use this setting if you don't want to bother with the UNLOCK button and/or aren't concerned about making accidental changes.

Battery Info.

Options: Register Batteries

This entry, the first in the Set-up 3 menu (see Figure 4.7) is an exceptionally useful feature that allows you to view battery condition information and performance, and track the data among several different batteries. Your EOS 60D can



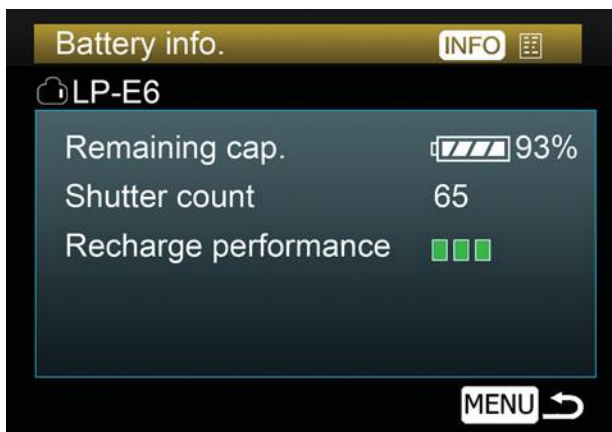
Figure 4.7
The Set-up 3
menu.

keep track of multiple LP-E6 batteries because each of them is given a unique serial number (which is printed on an included sticker you can affix to the battery). When you select this menu choice, a Battery Info screen appears, with a wealth of information (if you use two LP-E6 packs in a BG-E9 grip, information about both packs will appear): battery position (in camera or hand grip), power type, remaining capacity, shutter count on current battery, and recharge performance.

Registering Your Battery Packs

The EOS 60D can “remember” information about up to six LP-E6 battery packs, and provide readouts of their status individually. To register the battery currently in your camera, follow these steps:

1. Access the Battery Info. screen from the Shooting 3 menu. (See Figure 4.8.)
2. Press the INFO. button, located to the right of the LCD screen.
3. Information about the current battery, including its serial number and the current date will be shown on a new screen.
4. Choose Register to log the battery; if the pack has already been registered, you can choose Delete Info. to remove the battery from the list. (You’d want to do this if you already had registered the limit of six batteries and want to add another one.)
5. Press SET to add the battery to the registry.
6. If you’re deleting a battery, the 60D shows you a Battery Info. Delete screen instead. (You can delete a battery pack without having that battery installed in the camera. Just select the battery serial number.)
7. Press MENU to back out of any of the Battery Info. screens.

**Figure 4.8**

View the battery type and position, remaining capacity, number of pictures taken with the current charge, and the performance of your pack.

8. Once a battery has been registered, you can check on its remaining capacity at any time (even if it isn't currently installed in the 60D) from the Battery Info page. The camera remembers and updates the status of each registered battery whenever it is inserted in the 60D. The date the battery was last used is also shown.

INFO. Button

Options: Displays camera settings, electronic level, displays shooting functions

The INFO. button on the back panel of the Canon EOS 60D by default rotates among the display of several different screens, which can vary, depending on how you've set up this menu option. Just follow these steps:

1. When you select the menu entry, the INFO. button display options screen appears with three choices; Displays Camera Settings, Electronic Level, or Displays Shooting Functions. Use the Quick Control Dial or Multi-controller to highlight any of the three and press SET to mark or unmark that option.
2. Always mark at least one of the three. The 60D won't allow you to disable all of the display options.
3. When finished, use the QCD to move highlighting down to OK (to confirm your changes) or Cancel.
4. Press SET to OK or Cancel and exit the screen. (If you exit in any other way, your changes will not be entered.) Once you've left this options screen, you can press MENU or tap the shutter release to return to shooting mode.
5. Thereafter, the 60D will cycle among the choices you've activated, plus a blank screen, each time you press the INFO. button.

Camera User Setting

Options: Register, Clear

This entry allows you to register your EOS 60D's current camera shooting settings and file them away in the C position on the Mode Dial. Doing this overwrites any settings previously stored at that camera user position. You can also clear the settings for the C position, returning it to its factory default values.

Table 4.1 shows the settings you can store.

Register your favorite settings for use in particular situations. You can store settings in the C position for sports, portraits, or landscapes. If you switch to C and forget what settings you've made, just press the INFO. button to view the current settings. Keep in mind that My Menu settings (described later in this chapter) are not stored individually. You can have only one roster of My Menu entries available for all of the Mode Dial's positions.

Table 4.1 Stored Camera User Settings

Shooting Settings	Menu Settings
Shooting mode	Shooting 1: Image quality; Beep; Image review time; Release shutter without card; Peripheral illumination correction; Red-eye reduction; Flash control settings
ISO sensitivity	Shooting 2: Exposure compensation/AEB; Auto Lighting Optimizer; Picture Style; White balance settings; Color space
Autofocus mode	Shooting 3: ISO Auto
Autofocus point	Shooting 4: Live View settings; AF mode; Grid display; Exposure simulation; Silent shooting; Metering timer
Metering mode	Playback 2: Highlight alert; AF point display; Histogram; Image Jump; Slide Show
Drive mode	Set-up 1: Auto power off; Auto rotate; File numbering
Exposure compensation value	Set-up 2: LCD brightness; Sensor cleaning; Lock
Flash exposure compensation value	Set-up 3: INFO. button display options Custom Functions: All C.Fn. settings

This menu choice has only two options: Register (which stores your current settings in the C slot) and Clear Settings (which erases the settings). Note that you must use this menu entry to clear your settings; when using the C slot, the Clear Settings option in the Set-up 3 menu is disabled. The Clear All Custom Func. (C.Fn.) option in the Custom Functions menu is disabled as well. To clear those settings, choose a mode other than C.

To perform either of these tasks, just follow these steps:

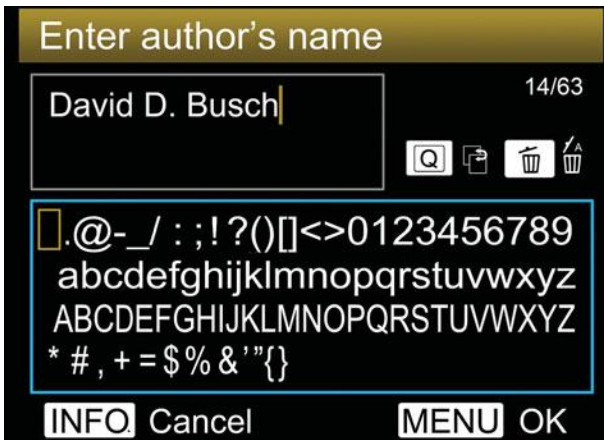
1. **Make your settings.** Set the EOS 60D to a Creative Zone exposure.
2. **Access camera user settings.** Navigate to the Camera User Setting option in Set-up 3 menu, and press SET.
3. **Choose function.** Rotate the Quick Control Dial to choose Register if you want to store your 60D's current settings in C; or select Clear Settings if you want to erase the settings stored. Press SET to access the settings screen for your choice.
4. **Clear settings.** You'll be given a choice to proceed or cancel.
5. **Exit.** When you confirm, you'll be returned to the Setting 3 menu. Press the MENU button or tap the shutter release button to exit the menu system entirely.

Copyright Settings

Options: Copyright info, author's name, copyright details, delete information

You can embed your name and copyright information in the Exif (Exchangeable Image File format) data appended to each photo that you take. When you choose this menu entry (see Figure 4.9), you have four options:

- **Display copyright info.** Shows the current author and copyright data.
- **Enter author's name.** Produces a text entry screen like the one shown in Figure 4.9. See "Entering Text" for instructions on how to type in text for this screen and the Copyright Details screen.
- **Enter copyright details.** Produces the same text entry screen, allowing you to enter copyright details. Oddly enough, no copyright symbol is available (although the @ sign is provided so you can type in your e-mail address!). Just use the parentheses and a lowercase c: (c).
- **Delete copyright information.** Removes the current copyright information (both author and copyright data). Once you delete the data, or if you haven't entered it yet, this option and the Display Copyright Info. option are grayed out and unavailable.

**Figure 4.9**

Access text entry screens for entering the name of the photographer and copyright details here.

Entering Text

Entering text into the Author's Name or Copyright Details screens is done in the same way, using a screen like the one shown in Figure 4.9. Just use these instructions:

- **Choose areas.** Either the text area (at top left) or available characters area (bottom half of the screen) will be highlighted with a blue outline. Switch between them by pressing the Q button on the right side of the back of the camera.
- **Scroll among text.** When the text area is highlighted, you can scroll among the text using the Quick Control Dial or Multi-controller left/right buttons. Up to 63 alphanumeric characters can be entered/displayed.
- **Enter characters.** When the available characters list is highlighted, use the QCD or Multi-controller to move among the alphanumeric characters shown. Press the SET button to enter that character at the cursor position in the text area above. You can delete the current character by pressing the Delete/Trash button.
- **Finish/Cancel.** When finished entering text, press the MENU button to confirm your choice, or press the INFO button to cancel and return to the Copyright Information screen.

Clear All Camera Settings

Options: Clear Settings

Table 4.2 Camera Setting Defaults

Shooting Settings	Default Value
AF mode	One-Shot AF
AF point selection	Auto selection
Metering mode	Evaluative
ISO speed	Auto
Drive mode	Single shooting
Exposure compensation/AEB	Canceled
Flash exposure compensation	0
Lock	Disable
Custom Functions	Unchanged
Image-Recording Settings	Default Value
Quality	JPEG Large/Fine
Picture Style	Standard
Auto Lighting Optimizer	Standard
Peripheral illumination correction	Enable/correction data preserved
Color space	SRGB
White balance	Auto
Custom White balance	Canceled
White balance correction	Canceled
WB-BKT	Canceled
File numbering	Continuous
Auto cleaning	Enable
Dust Delete Data	Erased
Live View Settings	Default Value
Live view shooting	Enable
AF mode	Live mode
Grid display	Off
Aspect Ratio	3:2
Exposure simulation	Enable
Silent shooting	Mode 1
Metering timer	16 seconds

Table 4.2 Camera Setting Defaults (continued)

Camera Settings	Default Value
Auto power off	1 minute
Beep	Enable
Release shutter without card	Enable
Image Review	2 seconds
Highlight alert	Disable
AF point display	Disable
Histogram	Brightness
Image jump with Main Dial	10 images
Auto rotate	On/Camera/Display
LCD brightness	Centered
Date/Time	Unchanged
Language	Unchanged
Video system	Unchanged
INFO. button display	All items selected
Camera user settings	Unchanged
Copyright information	Unchanged
Control over HDMI	Disable
Eye-Fi transmission	Disable
My Menu settings	Unchanged
Movie Settings	Default Value
Movie Exposure	Auto
AF mode	Live mode
AF w/shutter button during movie shooting	Disable
AF and metering buttons for movie shooting	0
Movie shooting highlight tone priority	Disable
Movie-recording size	1920 × 1080, 30fps
Sound recording	Auto
Silent shooting	Mode 1
Metering timer	16 sec.
Grid display	Off

Firmware Version

Options: See Version, Update Firmware

You can see the current firmware release in use in the menu listing. If you want to update to a new firmware version, insert a memory card containing the binary file, and press the SET button to begin the process.

Custom Functions I/II/III/IV

Custom Functions let you customize the behavior of your camera in a variety of different ways, ranging from whether or not the flash fires automatically to the function carried out when the SET button is pressed. The four categories, shown in Figure 4.10, are Exposure, Image, Autofocus/Drive, Operation/Others. The menu also has an option for clearing all the Custom Functions and returning them to their default values. I'm going to explain each of the categories of Custom Functions separately, but first you need your introduction into the mysteries of Canon's method of setting them.

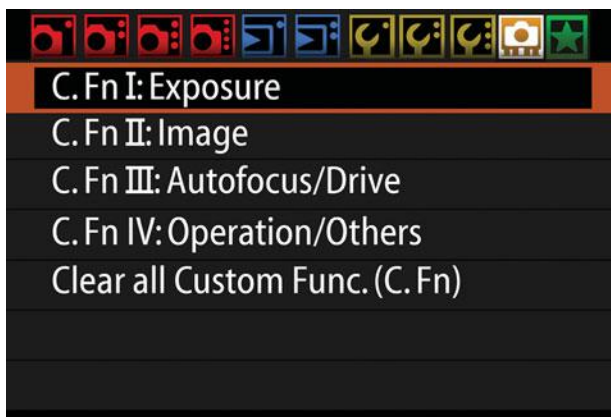


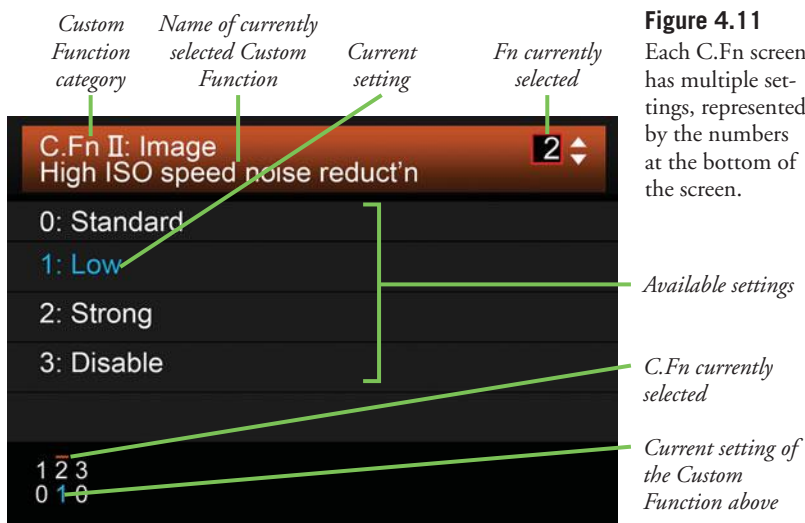
Figure 4.10

The 20 Custom Functions are divided into sub-menus in four categories.

Each of the Custom Functions is set in exactly the same way, except for C.Fn III-06 and IV-01, so I'm not going to bog you down with a bunch of illustrations showing how to make this setting or that (see Figure 4.11). Here are the key parts of the Custom Function screen:

- **Custom Function category.** At the top of the Settings screen is a label that tells you which category that screen represents.

- **Current Function name.** Use the Quick Control Dial to select the function you want to adjust. The name of the function currently selected appears at the top of the screen, and its number is marked with an overscore in the row of numbers at the bottom of the screen. You don't need to memorize the function numbers.
- **Function number.** The function number appears in two places. In the upper-right corner you'll find a box with the current function clearly designated. In the lower half of the screen are two lines of numbers, from 1 to 13 (or fewer). The currently selected function will have an orange superscore above it.
- **Available settings.** Within the dark gray blocks appear numbered setting options. The current setting is highlighted in blue. Press the SET button, rotate the Quick Control Dial to highlight the setting option you want, then press the SET button to select it, and finally press the MENU button twice to back out of the Custom Functions menus. (Only C.Fn IV-04 has more than five options available, and a scroll bar appears at the right, and you can use the Quick Control Dial to scroll down to the hidden option.)
- **Current setting.** Underneath each Custom Function is a number from 0 to 10 that represents the current setting for that function.
- **Option selection.** When a function is selected, the currently selected option appears in a highlighted box. As you scroll up and down the option list, the setting in the box changes to indicate an alternate value.

**Figure 4.11**

Each C.Fn screen has multiple settings, represented by the numbers at the bottom of the screen.

Custom Function I (C.Fn I): Exposure

This is the Custom Function category you can use to set the increments for exposure and ISO, define bracketing parameters, and other settings.

C.Fn I-01: Size of Exposure Adjustments

Exposure Level Increments. This setting tells the EOS 60D the size of the “jumps” it should use when making exposure adjustments—either one-third or one-half stop. The increment you specify here applies to *f*/stops, shutter speeds, EV changes, and autoexposure bracketing.

Options: 0: 1/3 stop, 1: 1/2 stop

C.Fn I-02: Size of ISO Sensitivity Adjustments

ISO Speed Setting Increments. This setting determines the size of the “jumps” it should use when making ISO adjustments—either one-third or one full stop.

Options: 0: 1/3 stop, 1: 1 stop

C.Fn I-03: Whether ISO 12800 Is Available or Disabled

ISO Expansion. Ordinarily, only ISO settings from 100 to 6400 are available (ISO 200–6400 if Highlight Tone Priority [C.Fn II-3] is enabled). The ISO Expansion function is disabled by default to prevent you from unintentionally using ISO settings higher than ISO 6400. If you want to use the H (ISO 12800) setting, it must be activated using this Custom Function.

Options: 0: Off, 1: On

CAUTION

Be aware that if you've activated Highlight Tone Priority (described later), the H setting (and ISO values less than ISO 200) will not be available even if you have enabled ISO expansion.

C.Fn I-04: Whether Bracketing Is Cancelled Automatically

Bracketing Auto Cancel. You can set the EOS 60D so that AEB (Auto Exposure Bracketing) and WB-BKT (White Balance Bracketing) are turned off automatically, or whether they remain in effect until you manually disable them. I know a photographer who brackets *everything*, and prefers that her camera keep her bracketing settings active all the time. It's more efficient not to have to remember to activate bracketing each time she uses the camera.

Options: 0: Off, 1: On

C.Fn I-05: Order in Which Bracketing Changes Are Applied

Bracketing Sequence. You can define the sequence in which AEB and WB-BKT series are exposed. Some photographers, particularly those from the film era, are accustomed to using manual bracketing. They may start with the metered exposure, then shift the shutter speed to one speed increment slower, then click twice in the opposite direction and shoot a third image at one increment faster than the “ideal” exposure.

It also controls the order in which white balance bracketing is done. For example, if your bias preference is set to blue/amber, the white balance sequence when option 0 is selected will be: current WB, more blue, more amber. If your bias preference is set to magenta/green, then the sequence for option 0 will be: current WB, more magenta, more green.

Options: 0: Exposure sequence is metered exposure, decreased exposure, increased exposure (0, –, +). White balance sequence is current standard WB, more blue/more magenta (depending on how your bias is set), more amber/more green. **1:** decreased exposure, metered exposure, increased exposure (–, 0, +). White balance sequence is more blue/more magenta, current standard WB, more amber/more green.

C.Fn I-06: Overriding Your Preference in Aperture Priority or Shutter Priority Modes

Safety Shift. Ordinarily, both Aperture-priority and Shutter-priority modes work fine, because you'll select an *f*/stop or shutter speed that allows the 60D to produce a correct exposure using the other type of setting (shutter speed for Av; aperture for Tv). However, when lighting conditions change, it may not be possible to select an appropriate setting with the available exposure options, and the camera will be unable to take a picture at all. Safety Shift will make similar adjustments if your scene suddenly becomes too bright; although, in practice, you'll find that the override will be needed most often when using Tv mode.

Options: 0: Disable, 1: Enable

C.Fn I-07: Flash Synchronization Speed when Using Aperture-Priority

Flash Sync. Speed in Av mode. You'll find this setting useful when using flash. When you're set to Aperture-priority mode, you select a fixed *f*/stop and the EOS 60D chooses an appropriate shutter speed. That works fine when you're shooting by available light. However, when you're using flash, the flash itself provides virtually all of the illumination that makes the main exposure, and the shutter speed determines how much, if any, of the ambient light contributes to a second, non-flash exposure. Indeed, if the camera or subject is moving, you can end

up with two distinct exposures in the same frame: the sharply defined flash exposure, and a second, blurry “ghost” picture created by the ambient light. If you *don't* want that second exposure, you should use the highest shutter speed that will synchronize with your flash (that's 1/250th second with the EOS 60D). If you do want the ambient light to contribute to the exposure (say, to allow the background to register in night shots, or to use the ghost image as a special effect), use a slower shutter speed. For brighter backgrounds, you'll need to put the camera on a tripod or other support to avoid the blurry ghosts.

Options: 0: Auto, 1: 1/250-1/60 sec. Auto, 2: 1/250 sec. (Fixed)

Custom Function II (C.Fn II): Image

There are only three settings in the C.Fn II: Image section; two for controlling noise reduction features, and one for enabling or disabling Highlight Tone Priority.

C.Fn II-01: Reducing Noise Effects at Shutter Speeds of One Second or Longer

Long Exposure Noise Reduction. Visual noise is that awful graininess that shows up as multicolored specks in images, and this setting helps you manage it. In some ways, noise is like the excessive grain found in some high-speed photographic films. However, while photographic grain is sometimes used as a special effect, it's rarely desirable in a digital photograph.

Options: **0: Off.** Disables long exposure noise reduction, **1: Auto.** The EOS 60D examines your photo taken with an exposure of one second or longer, and if long exposure noise is detected, a second, blank exposure is made and compared to the first image. **2: On.** Dark frame subtraction to all exposures longer than 1 second.

C.Fn II-02: Eliminating Noise Caused by Higher ISO Sensitivities

High ISO speed noise reduction. This setting applies noise reduction that is especially useful for pictures taken at high ISO sensitivity settings.

Options: 0: Standard, 1: Low, 2: Strong, 3: Disable

C.Fn II-03: Improving Detail in Highlights

Highlight Tone Priority. This setting concentrates the available tones in an image from the middle grays up to the brightest highlights, in effect expanding the dynamic range of the image at the expense of shadow detail. You'd want to activate this option when shooting subjects in which there is lots of important

detail in the highlights, and less detail in shadow areas. Highlight tones will be preserved, while shadows will be allowed to go dark more readily. Bright beach or snow scenes, especially those with few shadows (think high noon, when the shadows are smaller) can benefit from using Highlight Tone Priority.

Options: 0: Disable, 1: Enable

Custom Function III (C.Fn III): Autofocus/Drive

Here you'll find the important options for controlling how the Canon EOS 60D's autofocus system operates, along with settings for Live View and mirror lockup.

C.Fn III-01: How the Autofocus System Behaves When Autofocus Fails

Lens Drive When AF Impossible. This setting controls how the 60D's autofocus system handles hard-to-autofocus (or impossible-to-autofocus) situations. Canon's AF system operates on differences in contrast using a Phase Detection system. When a subject displays the greatest amount of contrast, the camera's rangefinder-like system can "line up" details in the image, and the subject is deemed to be in sharp focus. When a scene has little inherent contrast (say, a blank wall or the sky) or if there isn't enough illumination to allow determining contrast accurately (in low light levels, or with lenses having maximum apertures of less than $f/5.6$), a lens may be unable to achieve autofocus. Use this setting to tell the 60D either to keep trying to focus if AF seems to be impossible or to stop seeking focus.

Options: 0: Focus search on, 1: Focus search off

C.Fn III-02: Control Used to Select an Autofocus Point

AF Point Selection Method. This control allows you to specify how the active AF point is chosen.

Options: 0: Point selection button activate/Multi-controller select. Press the point selection button (in the upper-right corner of the back of the camera, marked with an asterisk) to activate point selection, then choose the AF point using the Multi-controller directional buttons. **1: Point selection button auto select/Multi-controller manual select.** If you press the point selection button, the AF point will be chosen automatically. Or, you can override this by using the Multi-controller directional buttons, without needing to press the point selection button first (which is the case with the 0 setting). If you choose this mode, you cannot assign a function to the SET button, which resides in the center of the Multi-controller pad.

C.Fn III-03: Whether the Autofocus Points Are Highlighted in the Viewfinder

Superimposed Display. The Superimposed Display function controls whether the AF points are illuminated in the viewfinder when autofocus is locked. Some people find the glowing red brackets distracting.

Options: 0: On. One or more focus points glow in red when focus locks. **1: Off.** The focus points are not illuminated unless one is selected manually.

C.Fn III-04: Activation of the Autofocus Assist Lamp

AF-assist Beam Firing. This setting determines when the AF assist lamp is activated to emit a pulse of light that helps provide enough contrast for the EOS 60D to focus on a subject.

Options: 0: Enable. The AF assist light is emitted by the camera's built-in flash or from a Canon Speedlite whenever light levels are too low for accurate focusing using the ambient light. **1: Disable.** The AF assist illumination is disabled. You might want to use this setting when shooting at concerts, weddings, or darkened locations where the light might prove distracting or discourteous.

2: Only external flash emits. The built-in AF assist light is disabled, but if a Canon EX dedicated flash unit is attached to the camera, its AF assist feature will be used when needed. **3: IR AF assist beam only.** Deactivates the use of an external flash's series of small flash bursts as an AF assist light. Only Canon Speedlites that have an infrared AF-assist light (such as the 580EX II) will be used as an autofocus aid when this option is selected. Use this option when you want to avoid the distraction of a visible electronic flash burst used as an AF assist light.

C.Fn III-05: Whether It Is Possible to Lock Up the Viewing Mirror Prior to an Exposure

Mirror Lockup. The Mirror Lockup function determines whether the reflex viewing mirror will be flipped up out of the way in advance of taking a picture, thereby eliminating any residual blurring effects caused by the minuscule amount of camera shake that can be produced if (as is the case normally) the mirror is automatically flipped up an instant before the actual exposure. When shooting telephoto pictures with a very long lens, or close-up photography at extreme magnifications, even this tiny amount of vibration can have an impact.

Options: 0: Disable. Mirror lockup is not possible. **1: Enable.** Mirror lockup is activated and will be used for every shot until disabled.

Custom Function IV (C.Fn IV): Operation/Others

Within this category of Custom Functions, you'll find four options for adjusting the behavior of controllers and buttons, specifying the focusing screen in use and other features.

C.Fn IV-01: What Happens When You Partially Depress the Shutter Release/Press the AF-ON Button/Press the AE Lock Button

AF and Metering Buttons. This setting controls the behavior of the shutter release, AF-ON button, and AE lock buttons. It allows you to control *which* button on the camera (shutter release, AF-ON button, or AE lock button) is used to start or stop the autofocus mechanism and/or exposure metering. There are ten different combinations listed below. Selection of one over another is purely a matter of personal preference.

Options:

- 0: **Shutter:** Meter and AF start; **AF-ON:** Meter and AF Start; **AE lock:** AE lock
- 1: **Shutter:** Metering start; **AF-ON:** Meter and AF Start; **AE lock:** AE lock
- 2: **Shutter:** Metering start; **AE lock:** AE lock; **AE lock:** Meter and AF start
- 3: **Shutter:** AE lock; **AF-ON:** Meter and AF Start; **AE lock:** AE lock
- 4: **Shutter:** AE lock; **AF-ON:** AE lock; **AE lock:** Meter and AF start
- 5: **Shutter:** Meter and AF start; **AF-ON:** AE lock; **AE lock:** Meter and AF start
- 6: **Shutter:** Meter and AF start; **AF-ON:** AF Stop; **AE lock:** AE lock
- 7: **Shutter:** Meter and AF start; **AF-ON:** AE lock; **AE lock:** AF stop
- 8: **Shutter:** Meter and AF start; **AF-ON:** No function; **AE lock:** AE lock
- 9: **Shutter:** Meter and AF start; **AF-ON:** AE lock; **AE lock:** No function

C.Fn IV-02: Using the SET Button as a Function Key

Assign SET Button. You already know that the SET button is used to select a choice or option when navigating the menus. However, when you're taking photos, it has no function at all. You can easily remedy that with this setting. This setting allows you to assign one of five different actions to the SET key.

Options: 0: Normal (disabled). This is the default during shooting. Nothing happens when you press the SET button while in Shooting mode. **1: Image quality.** Pressing the SET button produces the Quality menu screen on the color LCD. Rotate the Main Dial to change RAW options, or the Quick Control Dial

to change JPEG options. Press SET again to lock in your choice. **2: Picture Style.** The SET button summons the Picture Style menu to the back-panel LCD. Use the Quick Control Dial to select the Picture Style you want to use and press SET again to activate the style. **3: White balance.** Pressing SET produces the 60D's white balance adjustment screen on the LCD. Select the white balance you want, then press SET again to confirm. **4: Flash exposure compensation.** Pressing SET produces the 60D's flash exposure compensation adjustment screen on the LCD. Select the value you want, then press SET again to confirm. **5: Viewfinder.** Displays the electronic level.

C.Fn IV-03: Reverse Dial Direction When Using Shutter-Priority or Aperture-Priority

Dial Direction during Tv/Av. This setting reverses the result when rotating the Quick Control Dial and Main Dial when using Shutter-priority or Aperture-priority (Tv and Av). That is, increasing rotating the Main Dial to the right will decrease the shutter speed rather than increase it; *f*/stops will become larger rather than smaller. Use this if you find the default rotation scheme in Tv and Av modes are not to your liking. Activating this option also reverses the dial direction in Manual exposure mode. In other shooting modes, only the Main Dial's direction will be reversed.

Options: 0: Normal, 1: Reverse direction

C.Fn IV-04: Which Focusing Screen Is Installed

Focusing Screen. If you exchange the focus screen provided with your EOS 60D for one of the optional focus screens, you need to tell the camera which screen has been installed to ensure proper autofocus and exposure metering.

Options: **0: EF-A.** The Standard Precision Matte focusing screen is installed.
1: EF-D. The Precision Matte focus screen with alignment grid is installed.
2: EF-S. The Super Precision Matte focus screen, optimized for lenses with an *f*/2.8 or larger maximum aperture (the screen itself has a darker texture, and needs the extra illumination) has been installed.

C.Fn IV-05: Activating Data Verification Feature

Add Original Decision Data. The EOS 60D has a special feature that allows determining whether a specific image has been modified using a special Canon Data Verification Kit OSK-E2, which consists of a dedicated SM (secure mobile) card reader-writer and verification software that must be used with a computer to verify an image. The Add Original Decision Data function determines whether the information needed to verify an image is included in the image file.

Data verification is especially useful for law enforcement, legal, and scientific purposes, but not required for everyday shooting (which is why the feature is turned off by default).

Options: 0: Disable, 1:Enable

Clear All Custom Func (C.Fn) Settings

Options: Cancel, OK

This choice, located at the same level as the Custom Function categories, can be used to clear all camera Custom Functions. Press the SET button, then rotate the Quick Control Dial to choose either Cancel or OK. Press the SET button to confirm. All Custom Functions will be reset to their default 0 values.

My Menu

The Canon EOS 60D has a great feature that allows you to define your own menu, with just the items listed that you want. Remember that the 60D always returns to the last menu and menu entry accessed when you press the MENU button. So you can set up My Menu to include just the items you want, and jump to those items instantly by pressing the MENU button. Or, you can set your camera so that My Menu appears when the MENU button has been pressed, regardless of what other menu entry you accessed last.

To create your own My Menu, you have to *register* the menu items you want to include. Just follow these steps:

1. Press the MENU button and use the Main Dial or Multi-controller to select the My Menu tab. When you first begin, the personalized menu will be empty except for the My Menu Settings entry. Press the SET button to select it. You'll then see a screen like the one shown at left in Figure 4.12.
2. Rotate the Quick Control Dial to select Register, then press the SET button.
3. Use the Quick Control Dial to scroll down through the continuous list of menu entries to find one you would like to add. Press SET.
4. Confirm your choice by selecting OK in the next screen and pressing SET again.
5. Continue to select up to six menu entries for My Menu.
6. When you're finished, press the MENU button twice to return to the My Menu.

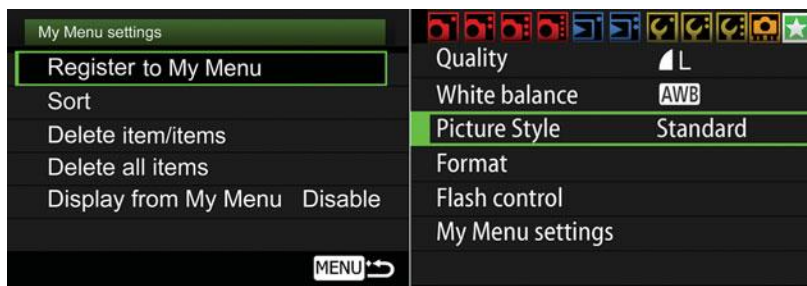


Figure 4.12 In the My Menu Settings screen you can add menu items, delete them, and specify whether My Menu always pops up when the MENU button is pressed.

In addition to registering menu items, you can perform other functions at the My Menu Settings screen:

- **Changing the Order.** Choose Sort to reorder the items in My Menu. Select the menu item and press the SET button. Rotate the Quick Control Dial to move the item up and down within the menu list. When you've placed it where you'd like it, press the MENU button to lock in your selection and return to the previous screen.
- **Delete/Delete All Items.** Use these to remove an individual menu item or all menu items you've registered in My Menu.
- **Display from My Menu.** As I mentioned earlier, the 60D (almost) always shows the last menu item accessed. That's convenient if you used My Menu last, but if you happen to use another menu, then pressing the MENU button will return to that item instead. If you enable the Display from My Menu option, pressing the MENU button will *always* display My Menu first. You are free to switch to another menu tab if you like, but the next time you press the MENU button, My Menu will come up again. Use this option if you work with My Menu a great deal and make settings with other menu items less frequently.

Chapter 5

Using the Flash

Your 60D has a flip-up electronic flash unit built in, but you can also use an external flash (or, “strobe” or “Speedlite”), either mounted on the 60D’s accessory shoe or used off-camera and linked with a cable or triggered by a slave light (which sets off a flash when it senses the firing of another unit). Consider using electronic flash:

- **When you need extra light.** Flash provides extra illumination in dark environments where existing light isn’t enough for a good exposure, or is too uneven to allow a good exposure even with the camera mounted on a tripod.
- **When you don’t need a precise preview of lighting effects.** Although some external units have a modeling flash feature that gives a preview of the strobe’s effects, that “modeling” flash may not give you a precise look at what you’re going to get. Unless you’re using a studio flash with a full-time modeling lamp, electronic flash works best when you are able to visualize its effects in your mind, or don’t need a precise preview.
- **When you need to stop action.** The brief duration of electronic flash serves as a very high “shutter speed” when the flash is the main or only source of illumination for the photo. Your 60D’s shutter speed may be set for 1/250th second during a flash exposure, but if the flash illumination predominates, the *effective* exposure time will be the 1/1,000th to 1/50,000th second or less duration of the flash, because the flash unit reduces the amount of light released by cutting short the duration of the flash. However, if the ambient light is strong enough, it may produce a secondary, “ghost” exposure, as I’ll explain later in this chapter.
- **When you need flexibility.** Electronic flash’s action-freezing power allows you to work without a tripod in the studio (and elsewhere), adding flexibility and speed when choosing angles and positions. Flash units can be easily filtered, and, because the filtration is placed over the light source rather than the lens, you don’t need to use high-quality filter material.

- **When you can use—or counter—flash’s relatively shallow “depth-of-light” (the inverse square law).** Electronic flash units don’t have the sun’s advantage of being located 93 million miles from the subject, and suffer from the effects of their proximity. The *inverse square law* dictates that as a light source’s distance increases from the subject, the amount of light reaching the subject falls off proportionately to the square of the distance. In plain English, that means that a flash or lamp that’s eight feet away from a subject provides only one-quarter as much illumination as a source that’s four feet away (rather than half as much). (See Figure 5.1.) You can *use* this effect to separate subjects located at different distances thanks to the differing amount of illumination each receives. But when you want a larger area blanketed more evenly with illumination, you have to *counter* the effects of the inverse square law, with supplemental lighting, slow shutter speeds (which allow ambient light to register along with the flash), or by repositioning your subjects so all are within your flash’s depth-of-light coverage.

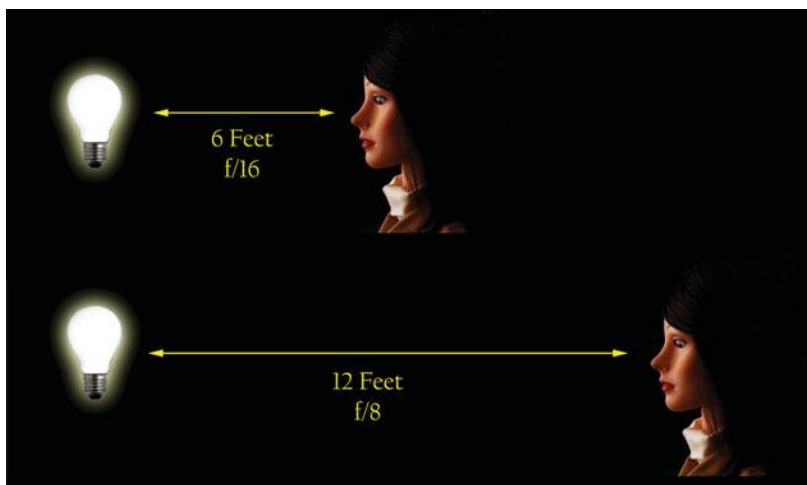


Figure 5.1 A light source that is twice as far away provides only one-quarter as much illumination.

Using the Built-in Flash

The Canon EOS 60D’s built-in flash is a handy accessory because it is available as required, without the need to carry an external flash around with you constantly. This section explains how to use the flip-up flash in the various Basic Zone and Creative Zone modes.

Basic Zone Flash

When the 60D is set to one of the Basic Zone modes (except for Landscape, Sports, or Flash Off modes), the built-in flash will pop up when needed to provide extra illumination in low-light situations, or when your subject matter is backlit and could benefit from some fill flash. The flash doesn't pop up in Landscape mode because the flash doesn't have enough reach to have much effect for pictures of distant vistas in any case; nor does the flash pop up automatically in Sports mode, because you'll often want to use shutter speeds faster than 1/250th second and/or be shooting subjects that are out of flash range. Pop-up flash is disabled in Flash Off mode for obvious reasons.

If you happen to be shooting a landscape photo and do want to use flash (say, to add some illumination to a subject that's closer to the camera), or you want flash with your sports photos, or you *don't* want the flash popping up all the time when using one of the other Basic Zone modes, switch to an appropriate Creative Zone mode and use that instead.

Creative Zone Flash

When you're using a Creative Zone mode, you'll have to judge for yourself when flash might be useful, and flip it up yourself by pressing the Flash button on the side of the pentaprism. The behavior of the internal flash varies, depending on which Creative Zone mode you're using.

- **P.** In Program mode, the 60D fully automates the exposure process, giving you subtle fill flash effects in daylight, and fully illuminating your subject under dimmer lighting conditions. The camera selects a shutter speed from 1/60th to 1/250th second and sets an appropriate aperture.
- **Av.** In Aperture-priority mode, you set the aperture as always, and the 60D chooses a shutter speed from 30 seconds to 1/250th second. Use this mode with care, because if the camera detects a dark background, it will use the flash to expose the main subject in the foreground, and then leave the shutter open long enough to allow the background to be exposed correctly, too. If you're not using an image-stabilized lens, you can end up with blurry ghost images even of non-moving subjects at exposures longer than 1/30th second, and if your camera is not mounted on a tripod, you'll see these blurs at exposures longer than about 1/8th second even if you are using IS.

To disable use of a slow shutter speed with flash, access C.Fn I-7 Flash Sync. Speed in Av mode and change from the default setting (0: Auto) to either 1: 1/250-1/60sec. auto or 2: 1/250sec. (fixed), as described in Chapter 4.

- **Tv.** When using flash in Shutter-priority mode, you set the shutter speed from 30 seconds to 1/250th second, and the 60D will choose the correct aperture for the correct flash exposure. If you accidentally set the shutter speed higher than 1/250th second, the camera will reduce it to 1/250th second when you're using the flash.
- **M/B.** In Manual or Bulb exposure modes, you select both shutter speed (30 seconds to 1/250th second) and aperture. The camera will adjust the shutter speed to 1/250th second if you try to use a faster speed with the internal flash. The E-TTL II system will provide the correct amount of exposure for your main subject at the aperture you've chosen (if the subject is within the flash's range, of course). In Bulb mode, the shutter will remain open for as long as the release button on top of the camera is held down, or the release of your remote control is activated.

Flash Range

The illumination of the 60D's built-in flash varies with distance, focal length, and ISO sensitivity setting.

- **Distance.** The farther away your subject is from the camera, the greater the light fall-off, thanks to the inverse square law discussed earlier. Keep in mind that a subject that's twice as far away receives only one-quarter as much light, which is two *f*/stops' worth.
- **Focal length.** The built-in flash "covers" only a limited angle of view, which doesn't change, but which is sufficient for most lenses, including the 18-55mm kit lens. With lenses wider than 18mm, however, the frame may not be covered fully, and you'll experience dark areas, especially in the corners. As you zoom in using longer focal lengths, some of the illumination is outside the area of view and is "wasted." (This phenomenon is why some external flash units, such as the 580EX II, "zoom" to match the zoom setting of your lens to concentrate the available flash burst onto the actual subject area.)
- **ISO setting.** The higher the ISO sensitivity, the more photons captured by the sensor. So, doubling the sensitivity from ISO 100 to 200 produces the same effect as, say, opening up your lens from *f*/8 to *f*/5.6.

Flash Control Menus

Here's a recap of this multi-level Shooting 1 menu entry, described in Chapter 3. It includes five settings for controlling the Canon EOS 60D's built-in, pop-up electronic flash unit, as well as dedicated Canon Speedlites you can attach to the camera (see Figure 5.2).

Flash control		External flash func. setting	
Flash firing	Enable	Flash mode	E-TTL II
Built-in flash func. setting		Shutter sync.	1st. curtain
External flash func. setting		FEB	3..2..1..0..1..2..3
External flash C. Fn. setting		exp. comp.	-2..-1..0..1..2
Clear ext. flash C. Fn. set.		E-TTL II	Evaluative
		Zoom	Auto
MENU		INFO	Clear flash settings

Figure 5.2 The Flash Control Menu entry (left) has five submenus, including External Flash Function settings (right).

Flash Firing

Use this option to enable or disable the built-in or accessory electronic flash. When disabled, the flash cannot fire even if you accidentally elevate it, or have an accessory flash attached and turned on when using Creative Zone modes.

Built-in Flash Function Setting

There are five main choices for this menu choice. Pressing the INFO. button to the left of the LCD while this menu screen is visible clears the current flash settings. There are also additional settings that apply when using an external flash, such as Channel and Firing Group.

- **Flash mode.** Your choices here are E-TTL II and Manual flash explained in the following section.
- **Shutter sync.** You can choose 1st curtain sync (which fires the main flash as soon as the shutter is completely open) or 2nd curtain sync (which waits until just before the shutter starts to close to fire the main flash). If you have a compatible Canon Speedlite attached, you can also select High-speed sync (HSS), which allows using shutter speeds faster than 1/250th second, from the External Flash Function Setting menu.
- **E-TTL II.** When you're using E-TTL II mode, you can specify here whether the 60D uses Evaluative (Matrix) or Average metering modes for the electronic flash exposure meter. Evaluative metering intelligently looks at selected areas in the scene and compares its measurements to a database of typical scene "layouts" to calculate exposure, while Average calculates flash exposure by reading the entire scene. Your choice becomes active when you select E-TTL II as your flash mode, using the entry listed first on this menu screen, and described in more detail in the next section.

- **Flash exposure compensation.** If you'd rather adjust flash exposure using a menu than with the ISO-Flash exposure compensation button, you can do that here. Select this option with the SET button, then dial in the amount of flash EV compensation you want using the Multi-controller or Quick Control Dial. The EV that was in place before you started to make your adjustment is shown as a blue indicator, so you can return to that value quickly. Press SET again to confirm your change, then press the MENU button twice to exit.
- **Wireless functions.** These choices, which include Mode, Channel, Firing Group, and other options are used only when you're working with an external flash in wireless mode.

Ghost Images

The difference between triggering the flash when the shutter just opens, or just when it begins to close might not seem like much. But whether you use 1st-curtain sync (the default setting) or 2nd-curtain sync (an optional setting) can make a significant difference to your photograph *if the ambient light in your scene also contributes to the image*.

At faster shutter speeds, particularly 1/250th second, there isn't much time for the ambient light to register, unless it is very bright. It's likely that the electronic flash will provide almost all the illumination, so 1st-curtain sync or 2nd-curtain sync isn't very important. However, at slower shutter speeds, or with very bright ambient light levels, there is a significant difference, particularly if your subject is moving, or the camera isn't steady.

In any of those situations, the ambient light will register as a second image accompanying the flash exposure, and if there is movement (camera or subject), that additional image will not be in the same place as the flash exposure. It will show as a ghost image and, if the movement is significant enough, as a blurred ghost image trailing in front of or behind your subject in the direction of the movement.

As I noted, when you're using 1st-curtain sync, the flash's main burst goes off the instant the shutter opens fully (a pre-flash used to measure exposure in auto flash modes fires *before* the shutter opens). This produces an image of the subject on the sensor. Then, the shutter remains open for an additional period (30 seconds to 1/250th second, as I said). If your subject is moving, say, towards the right side of the frame, the ghost image produced by the ambient light will produce a blur on the right side of the original subject image, making it look as if your sharp (flash-produced) image is chasing the ghost. For those of us who grew up with lightning-fast superheroes who always left a ghost trail *behind them*, that looks unnatural (see Figure 5.3).

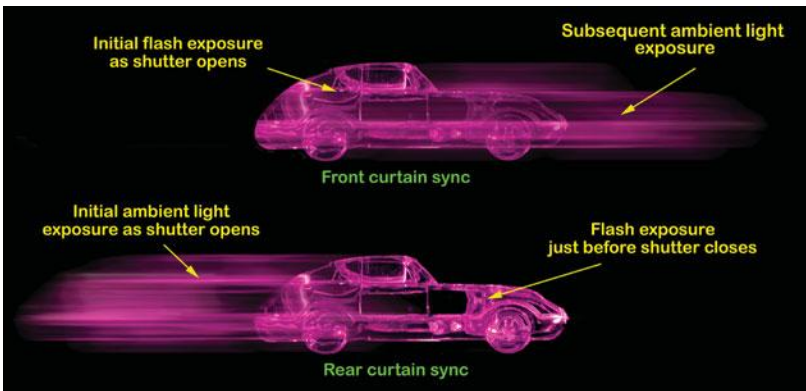


Figure 5.3 1st-curtain sync produces an image that trails in front of the flash exposure (top), while 2nd-curtain sync creates a more “natural looking” trail behind the flash image.

So, Canon uses 2nd-curtain sync to remedy the situation. In that mode, the shutter opens, as before. The shutter remains open for its designated duration, and the ghost image forms. If your subject moves from the left side of the frame to the right side, the ghost will move from left to right, too. *Then*, about 1.5 milliseconds before the second shutter curtain closes, the flash is triggered, producing a nice, sharp flash image *ahead* of the ghost image.

External Flash Function Setting

This menu is available only when you have a compatible dedicated Canon Speedlite electronic flash attached and switched on. The settings available are shown at right in Figure 5.2. If you press the DISP. button while adjusting flash settings, both the changes made to the settings of an attached external flash and to the built-in flash will be cleared.

- **Flash mode.** This entry allows you to set the flash mode for the external flash, from E-TTL II, Manual flash, MULTI flash, TTL, AutoExFlash, and ManEx flash. The first two are identical to the modes described earlier. The third, MULTI flash, allows stroboscopic/repeating flash effects, and will be described next. The remaining three are optional metering modes available with certain flash units, such as the 580 EX II, and are available for those who might need one of those less sophisticated flash metering systems. TTL measures light bouncing back from your subject through the lens to calculate exposure but, unlike E-TTL II, does not use a pre-flash or intelligent evaluation of the measurements to adjust for different types of scenes. AutoExFlash and ManEx flash don't measure light through the lens at all,

but, instead, meter the illumination falling on an external sensor (with an unvarying 20-degree angle of view) that's built into the flash. The former method performs automatic exposure calculation using this information, while the latter provides data you can use for manual flash exposure.

- **Shutter sync.** As with the 60D's internal flash, you can choose 1st curtain sync, which fires the flash as soon as the shutter is completely open (this is the default mode). Alternatively, you can select 2nd curtain sync, which fires the flash as soon as the shutter opens, and then triggers a second flash at the end of the exposure, just before the shutter starts to close. If a compatible Canon flash, such as the Speedlite 580EX II is attached and turned on, you can also select High-speed sync. and shoot using shutter speeds faster than 1/250th second. HSS does not work in wireless mode.
- **FEB.** Flash Exposure Bracketing (FEB) operates similarly to ordinary exposure bracketing, providing a series of different exposures to improve your chances of getting the exact right exposure, or to provide alternative renditions for creative purposes.
- **Flash exposure compensation.** You can adjust flash exposure for external flash using a menu here. Select this option with the SET button, then dial in the amount of flash EV compensation you want using the Multi-controller or Quick Control Dial. The EV that was in place before you started to make your adjustment is shown as a blue indicator, so you can return to that value quickly. Press SET again to confirm your change, then press the MENU button twice to exit.
- **E-TTL II.** You can choose Evaluative (Matrix) or Average metering modes for the electronic flash exposure meter. Evaluative looks at selected areas in the scene to calculate exposure, while Average calculates flash exposure by reading the entire scene.
- **Zoom.** Some flash units can vary their coverage to better match the field of view of your lens at a particular focal length. You can allow the external flash to zoom automatically, based on information provided, or manually, using a zoom button on the flash itself. This setting is disabled when using a flash like the Canon 270EX II, which does not have zooming capability.
- **Wireless func.** These functions are available when using wireless flash.

External Flash Custom Function Setting

Many external Speedlites from Canon include their own list of Custom Functions, which can be used to specify things like flash metering mode and flash bracketing sequences, as well as more sophisticated features, such as modeling light/flash (if available), use of external power sources (if attached), and functions of any slave unit attached to the external flash. This menu entry allows you to set an external flash unit's Custom Functions from your 60D's menu.

Clear External Flash Custom Function Setting

This entry allows you to zero-out any changes you've made to your external flash's Custom Functions, and return them to their factory default settings.

Using FE Lock and Flash Exposure Compensation

If you want to lock flash exposure for a subject that is not centered in the frame, you can use the FE lock button (*) to lock in a specific flash exposure, although the procedure is made tricky because of the sequence of steps that the 60D requires. Depress and hold the shutter button halfway to lock in focus, then center the viewfinder on the subject you want to correctly expose, and press the * button. (It's quite difficult to hold the camera, hold the shutter release down halfway, and then press the * button. To make things more interesting, Canon also recommends that you look into the viewfinder to make sure the flash-ready icon is still lit while doing this.) If you're successful, the pre-flash fires and calculates exposure, displaying the FEL (flash exposure lock) message in the viewfinder. Then, recompose your photo and press the shutter down the rest of the way to take the photo.

You can also manually add or subtract exposure to the flash exposure calculated by the 60D. Just select the Choose the Flash Control entry in Shooting 1 menu, choose Built-in Flash, then the Built-in Flash function, and choose Select Flash Exp. Comp. Then use the left/right cross keys to enter flash exposure compensation plus or minus two f/stops. The exposure index scale on the LCD and in the viewfinder will indicate the change you've made, and a flash exposure compensation icon will appear to warn you that an adjustment has been made. As with non-flash exposure compensation, the compensation you make remains in effect for the pictures that follow, and even when you've turned the camera off, remember to cancel the flash exposure compensation adjustment by reversing the steps used to set it when you're done using it.

Using External Electronic Flash

Canon offers a broad range of accessory electronic flash units for the EOS 60D. They can be mounted to the flash accessory shoe, or used off-camera with a dedicated cord that plugs into the flash shoe to maintain full communications with the camera for all special features. (Non-dedicated flash units, such as studio flash, can be connected using a PC terminal adapter slipped into the flash shoe.) They range from the Speedlite 580EX II, which can correctly expose subjects up to 17 feet away at f/11 and ISO 100, to the 270EX, which is good out to 8 feet at f/11 and ISO 100. (You'll get greater ranges at even higher ISO settings, of course.) There are also two electronic flash units specifically for specialized close-up flash photography.

Speedlite 580EX II

This flagship of the Canon accessory flash line is the most powerful unit the company offers, with a GN of 190, and a manual/automatic zoom flash head that covers the full frame of lenses from 24mm wide angle to 105mm telephoto. (There's a flip-down wide-angle diffuser that spreads the flash to cover a 14mm lens's field of view, too.) All angle specifications given by Canon refer to full-frame sensors, but this flash unit automatically converts its field of view coverage to accommodate the crop factor if you also use it on a cropped sensor camera like the EOS 60D. (Handy if you own both.)

The unit offers full-swivel, 180-degrees in either direction, and has its own built-in AF assist beam and an exposure system that's compatible with the eleven focus points of the 60D. Powered by economical AA-size batteries, the unit recycles in 0.1 to 6 seconds, and can squeeze 100 to 700 flashes from a set of batteries.

The 580EX II automatically communicates white balance information to your camera, allowing it to adjust WB to match the flash output. You can even simulate a modeling light effect: When you press the depth-of-field preview button on the 60D, the 580EX II emits a one-second burst of light that allows you to judge the flash effect. If you're using multiple flash units with Canon's wireless E-TTL system, this model can serve as a master flash that controls the slave units you've set up (more about this later) or function as a slave itself.

It's easy to access all the features of this unit, because it has a large backlit LCD panel on the back that provides information about all flash settings. There are 14 Custom Functions that can be controlled from the flash, numbered from 00 to 14. These functions are (the first setting is the default value):

- C.Fn-00** Distance indicator display (Meters/Feet)
- C.Fn-01** Auto power off (Enabled/Disabled)
- C.Fn-02** Modeling flash (Enabled-DOF preview button/Enabled-Test firing button/Enabled-Both buttons/Disabled)
- C.Fn-03** FEB Flash exposure bracketing auto cancel (Enabled/Disabled)
- C.Fn-04** FEB Flash Exposure Bracketing Sequence (Metered > Decreased > Increased Exposure/Decreased > Metered > Increased Exposure)
- C.Fn-05** Flash metering mode (E-TTL/II-E-TTL/TTL/External metering: Auto/External metering: Manual)
- C.Fn-06** Quickflash with continuous shot (Disabled/Enabled)
- C.Fn-07** Test firing with autoflash (1/32/Full power)
- C.Fn-08** AF-assist beam firing (Enabled/Disabled)

- C.Fn-09** Auto zoom adjusted for image/sensor size (Enabled/Disabled)
- C.Fn-10** Slave auto power off timer (60 minutes/10 minutes)
- C.Fn-11** Cancellation of slave unit auto power off by master unit (Within 8 Hours/Within 1 Hour)
- C.Fn-12** Flash recycling on external power (Use internal and external power/Use only external power)
- C.Fn-13** Flash exposure metering setting button (Speedlite button and dial/Speedlite dial only)

Speedlite 430EX II

This less pricey electronic flash has a GN of 141, with automatic and manual zoom coverage from 24mm to 105mm, and the same wide-angle pullout panel found on the 580EX II that covers the area of a 14mm lens on a full-frame camera, and automatic conversion to the cropped frame area of the 60D and other 1.6X crop Canon DSLRs. The 430EX II also communicates white balance information with the camera, and has its own AF assist beam. Compatible with Canon's wireless E-TTL system, it makes a good slave unit, but cannot serve as a master flash. It, too, uses AA batteries, and offers recycle times of 0.1 to 3.7 seconds for 200 to 1,400 flashes, depending on subject distance.

Speedlite 320EX

One of two new flash units (with the Speedlite 270EX II, described next) introduced early in 2011, this \$249 flash has a GN of 105. Lightweight and more pocket-sized than the 430 EX II or 580 EX II, this bounceable (both horizontally and vertically) flash has some interesting features, including a built-in LED video light that can be used for shooting movies with the 60D, or as a modeling light or even AF assist beam when shooting with Live View. Canon says that this efficient LED light can provide up to four hours of illumination with a set of AA batteries. It can be used as a wireless slave unit, and has a new flash release function that allows the shutter to be triggered remotely with a two-second delay.

Speedlite 270EX II

This \$170 ultra-compact unit is Canon's entry-level Speedlite, and suitable for 60D owners who want a simple strobe for occasional use, without sacrificing the ability to operate it as a wireless slave unit. With a GN of 89, it provides a little extra pop for fill flash applications. It has vertical bounce capabilities of up to 90 degrees, and can be switched between Tele modes to Normal (28mm full-frame coverage) at a reduced guide number of 72.

The 270EX II functions as a wireless slave unit triggered by any Canon EOS unit or flash (such as the 580 EX II) with a Master function. It also has the new flash release function, with a two-second delay that lets you reposition the flash. There's a built-in AF assist beam, and this 5.5-ounce, $2.6 \times 2.6 \times 3$ -inch unit is powered by just two AA-size batteries.

Wireless Flash

Complete instruction in using the 60D's wireless flash capabilities is beyond the scope of this Compact Field Guide, but I'm going to provide a few checklists you can use as reminders once you've mastered the basics.

NOT A TUTORIAL

I repeat: this section is a review you can use out in the field. It is not intended to teach you how to use wireless flash. You should gain some familiarity with the EOS 60D's wireless capabilities, either from your camera manual or the manual furnished with your flash, or my full-length book on the 60D, which has an entire chapter on wireless flash.

Setting up your camera:

1. **Using the built-in flash as wireless flash controller.** With the 60D set for a Creative Zone mode, start by popping up the camera's built-in flash. You can use this flash either in conjunction with your remote, off-camera strobes (adding some illumination to your photos) or just to control them (with no illumination from your pop-up flash contributing to the exposure). The built-in flash needs to be in the up position to use the 60D's wireless flash controller either way.
2. **Enable internal flash.** Press the MENU button and navigate to the Shooting 1 menu. Choose the Flash Control entry, as described in Chapter 3, and press the SET button (it's the one in the center of the Quick Control Dial). This brings up the Flash Control menu (which is at the bottom of the menu). Press the SET button to enter the Flash Control menu. Next, select the Flash Firing setting (by turning the Quick Control Dial) and set the camera to Enable. This activates the built-in flash, which makes wireless flash control with the 60D possible.
3. **Confirm/Enable E-TTL II exposure.** Although you can use wireless flash techniques and manual flash exposure, you're better off learning to use wireless features with the EOS 60D set to automatic exposure. So, from the Flash Control menu, use the Quick Control Dial to move to the Built-in

Flash Func. Setting option (second from the top in Figure 5.2 left) and press the SET button again. If Flash Mode is not already set for E-TTL II, select the entry, press SET, and change from Manual Flash or Multi Flash back to E-TTL II. (See Figure 5.2 right.)

4. **Enable wireless functions.** Back at the Built-in Flash Func. Setting menu, use the QCD to scroll down to the Wireless Func. entry and press SET. (See Figure 5.4.) The four options available, represented by icons, are Disable, Ratio Set, Wireless (External) Flash Only, and Wireless (External) Flash Plus Built-in Flash. To use wireless flash, you'll need to switch from Disable to one of the three other choices, which I will explain in the following sections.



Figure 5.4

Enable wireless flash by choosing one of three wireless flash functions (described next).

Once you've completed the four steps above, your 60D is set up to begin using wireless flash. But first, you'll need to specify a few other options, including wireless functions, channels, and groups. I'll show you each of these one at a time.

Selecting Wireless Functions

As I noted, the Wireless Func. entry in the Built-In Flash Func. Setting menu has four options: Disable, Internal/External Flash Ratio Setting, Wireless Flash Only, and Wireless Flash Plus Built-in Flash. You probably understand the function of Disable fairly well, but here's a discussion of the other three choices.

Internal/External Flash Ratio Setting

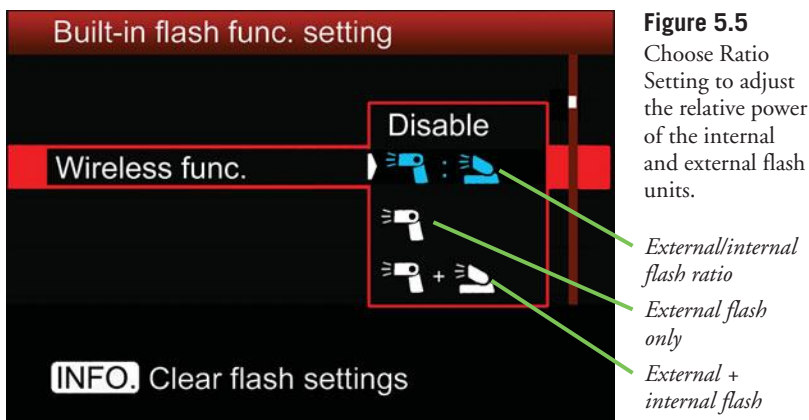
This option lets you choose a power ratio between your built-in flash and your wireless flash units—the relative strength of each. It can be especially useful if you want to use the built-in flash for just a little fill light while letting your

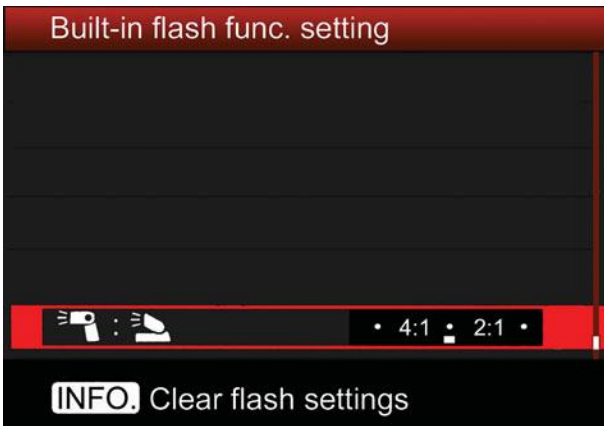
off-camera units do the heavy work. This setting is the top choice in the Wireless Function menu. It has icons that show an external flash and a raised camera flash.

Having the ability to vary the power of each flash unit or group of flash units wirelessly gives you greater flexibility and control. Varying the light output of each flash unit makes it possible to create specific types of lighting (such as traditional portrait lighting which frequently calls for a 3:1 lighting ratio between main light and fill light) or to use illumination to highlight one part of the photo while reducing contrast in another.

Here's how to set the lighting ratio between the internal flash and one external wireless flash unit:

1. **Choose Ratio Setting in Wireless Func. menu.** In the Built-In Flash Func. Setting menu, highlight Wireless Func., press SET, and choose Ratio Setting (it's the first entry under Disable, as shown in Figure 5.5). Press SET again to confirm and return to the previous menu.
2. **Access the Power Ratio entry.** Now you can set the power ratio by scrolling down to the entry just below the Firing Group entry, represented by a pair of icons corresponding to an external and internal flash unit.
3. **Set the control.** Press the SET button.
4. **Choose the desired ratio.** Then use the Quick Control Dial to choose the setting you want. (See Figure 5.6.) Your choices range from 1:1 (the off-camera and built-in flash have equal output) to 8:1 (the off-camera flash supplies 8X output compared to the internal flash). Set the ratio to 4:1, for example, and the external flash will produce four times as much light as the on-camera flash, which is then used as fill illumination.
5. **Confirm.** Press SET to confirm your ratio.



**Figure 5.6**

Select a ratio
from 8:1 to 1:1.

Wireless Flash Only

This setting, represented by an icon of a flash unit alone, allows you to turn off the flash output of your 60D's built-in flash, while allowing it to emit a wireless controller flash that signals the external flash units you're working with. You'll still see a burst from your camera's built-in flash, but that burst will not contribute to the exposure. It will only be used to tell the remote/slave flash units to fire.

This is the setting to choose if you only want to use the flash controller to operate your remote flashes. It's probably the most commonly used choice when you don't want to use the internal flash for fill light, since firing the built-in flash increases the risk of red-eye effects.

Here are the steps to follow when using wireless flash only (whether you're working with a single external flash, or multiple units).

1. **Choose Wireless Flash Only.** Navigate to the Wireless Func. menu as you did earlier, but choose Wireless Flash Only (the single-flash icon two rows below the Disable setting).
2. **Confirm.** Press the SET button to confirm the Wireless Flash Only setting.
3. **Set the Power Ratio (optional).** If you are using more than one external flash, and have assigned flash units to different groups (Groups A, B, and C are available), you can then set the power ratios between groups. (I'll explain groups later in this chapter.) If you are using only one flash, or all the flash units are assigned to the same group, you don't need to do this; setting a power ratio won't make any difference.

Using Wireless and Built-in Flash

This option in the Wireless Func. screen, represented by an icon showing an external flash and raised camera flash, adds the built-in flash to whatever wireless groups you're using. You can then use the built-in flash in conjunction with whatever firing groups you've set up. In this case you're still using the external flash units as the main sources of light, but the built-in flash can either serve to provide some extra fill (such as to illuminate the face under the brim of a hat) or to provide a second light when you only have one off-camera flash available.

It is also possible to set up a two-light portrait using an off-camera flash as a main light (about 45 degrees to the model) and the built-in flash as the fill light, as discussed earlier. Use the External/Internal Flash Ratio setting to adjust their relative contribution to the image.

Working with Groups

With what you've already learned, you can shoot wirelessly using your camera's built-in flash and one or more external flash units. All these strobes will work together with the 60D for automatic exposure using E-TTL II exposure mode. You can vary the power ratio between your built-in flash and the external units. As you become more comfortable with wireless flash photography, you can even switch the individual external flash units into manual mode, and adjust their lighting ratios manually.

But there's a lot more you can do if you've splurged and own two or more compatible external flash units (some photographers I know own five or six Speedlite 580EX II units). Canon wireless photography lets you collect individual strobes into *groups*, and control all the Speedlites within a given group together. You can operate as few as two strobes in two groups or three strobes in three groups, while controlling more units if desired. You can also have them fire at equal output settings (A+B+C mode) versus using them at different power ratios (A:B or A: B C modes). Setting each group's strobes to different power ratios gives you more control over lighting for portraiture and other uses.

The ST-E2 is a hot shoe mount device that offers wireless flash control for a wide variety of Canon wireless flash capable strobes and can even control flash units wireless for High-speed sync (HSS) photography (a capability the 60D doesn't offer). The ST-E2 can only control two flash groups though, not three like the 60D and also can support flash exposure bracketing. Its range isn't as great as the 60D's though.

Canon flash units that can be operated wirelessly include: 580EX II, 580EX, 550EX, 430EX, 420EX, MR-14EX, and MT-24EX. The 270EX, 220EX,

380EX and earlier Canon flash units cannot be operated wirelessly via Canon's wireless flash system. There are third-party flash units that can, but you must use one designed to work with Canon's wireless flash system only.

Here's how you set up groups:

1. **Determine lighting set-up.** Decide whether you're using the built-in flash as part of your lighting scheme or just using the external flash units. If you do want the internal flash to contribute to the exposure, then you can scroll down to the External Flash/Built-in Flash Lighting Ratio Control (if you're using lighting ratios) and set that control (from 8:1 to 2:1, as noted earlier).
2. **Access lighting groups.** If you're not using the built-in flash, scroll down to the Firing Group entry and press SET. The screen shown in Figure 5.7 appears.
3. **Select the group configuration you want.** From top to bottom, the choices shown in Figure 5.7 are:
A+B+C. Multiple external flash units functioning as one big flash.
A:B. Multiple external units in two groups.
A:B C. Multiple external strobes in three groups.
 I'll explain exactly what these three configurations do next.
4. **Allocate flash units into groups.** You must do this at the flash unit itself. You'll need to tell each flash which group it "belongs" to, so it will respond, along with any other strobes (if any) in its group, to wireless commands directed at that particular group. The procedure for setting each flash unit's slave ID/group varies depending on what flash you are using, so consult your Speedlite's manual.

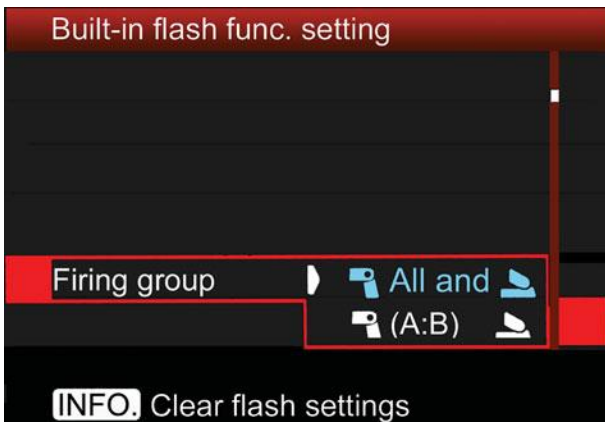


Figure 5.7
Setting the firing group controls.

SETTING SLAVE/GROUP ID WITH THE 580EX II

1. Press the Zoom button for two seconds or longer until the display blinks.
2. Rotate the Control Dial until the Slave indicator blinks.
3. Press the Control Dial button to confirm Slave operation.
4. To change from Group A to another group, press the Zoom button until the Group A indicator blinks.
5. Rotate the Control Dial until the A indicator is replaced by the B or C indicators.
6. Press the Control Dial button to confirm the group ID.

Group Configurations

As noted above, you can choose any of three different group configurations, with one or more than one flash allocated to each group. Here is what each group allocation does.

- **A+B+C.** This is the configuration to use when you want to illuminate a large area. All the Speedlites in each of up to three groups will fire simultaneously and at the same power level. The EOS 60D will meter the exposure from the pre-flash and adjust the output of all the units to provide the optimal exposure. (See Figure 5.8.)
- **A:B.** You can allocate one or more external slaves to Groups A or B, and then adjust the power ratio between the groups to achieve the lighting effect you want. In this configuration, all the slaves in Group A function as a single unit, and all those in Group B function as a single unit. Use the A:B fire

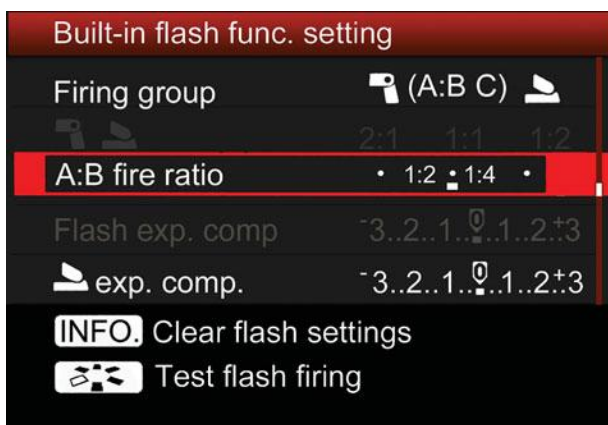


Figure 5.8

Setting the firing group controls.

ratio entry in the Built-In Flash Func. Setting screen to adjust the power ratios between the two groups. Note that the possible settings include 8:1 to 1:1 (with Group A equal to, or more powerful than Group B), or 1:1 to 1:8 (in which Group B will be set to a higher power level relative to Group A). You can bump up/down the output of all the flash units in Groups A and B by using the Flash Exp. Comp setting, shown in Figure 5.9.

- **A:B C.** In this configuration, you can control the power levels of A:B relative to one another, as described above. However, a third collection of slave units, Group C, is added to the mix. You can adjust the relative output of Group C, compared to Groups A and B, using the Group C Exp. Comp. entry, shown in Figure 5.10. A similar exposure compensation setting (A,B Exp. Comp.) is available to add/subtract from the output of all the units in Groups A and B.

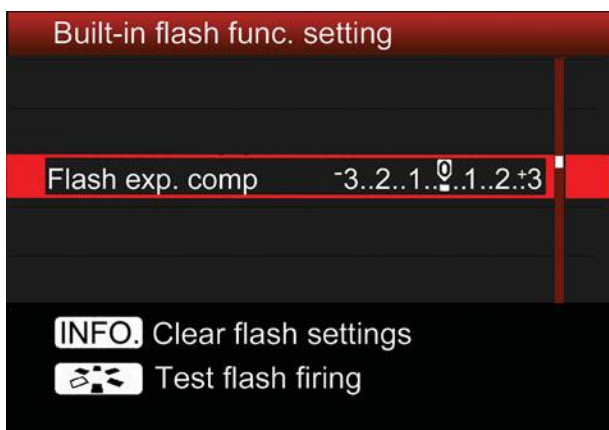


Figure 5.9
Use Flash Exposure Compensation to adjust the output of Group A and B strobes.

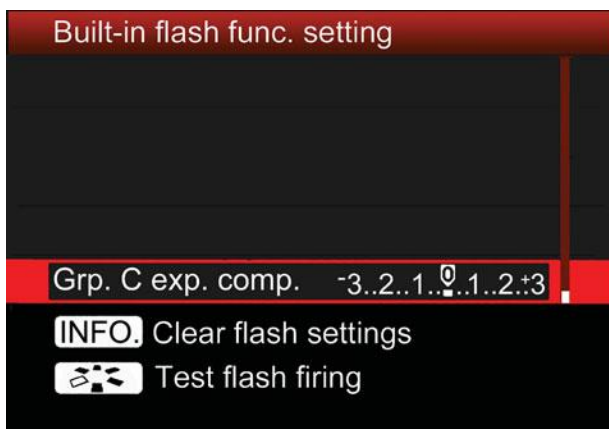


Figure 5.10
If you've activated Group C, exposure compensation is available for that group, too.

FLASH EXPOSURE COMPENSATION

Remember that when you set the exposure compensation to anything but 0, you're telling the flash to fire at a different output than the E-TTL would normally choose. You can select anywhere from three f/stops worth of compensation over or under the normal output in 1/3 f/stop increments. This is different from setting a power ratio, which affects the light output of the different flash units in relation to one another, but still operating under the control of Canon's E-TTL exposure technology.

It's possible to set exposure compensation for one flash group versus another, for all flash groups, or for the camera's ambient light (non-flash) exposure.

Choosing a Channel

Canon's wireless flash system can work on any of four channels, so if more than one photographer is using the Canon system, each can set his gear to a different channel so they don't accidentally trigger each other's strobes. You need to be sure all of your gear is set to the same channel.

It's always a good idea to double check your flash units before you set them up to make sure they're all set to the same channel and this should also be one of your first trouble shooting questions if a flash doesn't fire the first time you try to use it wirelessly.

You do this as follows:

1. **Set flash units to the channel you want to use for all your groups.** Each flash unit may use its own procedure for setting that strobe's channel. Consult your Speedlite's manual for instructions. With the 580EX II, press the Zoom button until the CH. Indicator blinks, then rotate the Control Dial to select Channel 1, 2, 3, or 4. Press the Control Dial center button to confirm.
2. **Navigate to the 60D's channel selection option.** In the Built-In Flash Func. Settings screen, use the Quick Control Dial to scroll down to the Channel setting and push the SET button.
3. **Select the channel your flashes are set to.** You can then use the Quick Control Dial to advance the channel number from 1 to 4 or back down again (you have to reverse the Quick Control Dial direction to get back to one; you can't just keep advancing it to get there—it doesn't “wrap around”).
4. **Double check to make sure your flash units are set to the appropriate channel.** Your wireless flash units must be set to the same channel as the 60D's wireless flash controller; otherwise, the Speedlites won't fire.

Chapter 6

Shooting Movies with Live View

Live View and shooting movies with the 60D go hand in hand: you need to activate Live View to display the current scene as viewed on the lens on the LCD. Thereafter, you can take still photos by pressing the shutter release button, or activate Movie mode and shoot video. While capturing movies, you can still press the shutter release and take a still photo. This chapter tells you how to use Live View first, and then explains the movie shooting options.

Enabling Live View

You need to take some steps before using Live View or shooting movies. This workflow prevents you from accidentally using Live View when you don't mean to, thus potentially losing a shot, and it also helps ensure that you've made all the settings necessary to successfully use the feature efficiently. Here are the steps to follow:

1. **Choose a shooting mode.** Live View works with any exposure mode, including Full Auto and Creative Auto. You can even switch from one Basic Zone mode to another or from one Creative Zone mode to another while Live View is activated. (If you change from Basic to Creative, or vice versa while Live View is on, it will be deactivated and must be restarted.)
2. **Enable Live View.** You'll need to activate Live View by choosing Live View Shoot, setting from the Shooting 4 menu (when the Mode Dial is set to a Creative Zone mode; if you're using a Basic Zone mode, an abbreviated list of Live View options is found in the Shooting 2 menu). Press SET and use the Quick Control Dial to select Enable and press the SET button again to exit.

TIP

Note that even if you've disabled Live View, you can still set the Mode Dial to Movie and shoot video.

3. **Choose other Live View functions.** Select from the other Live View functions in the Shooting 4 menu (described next), then press the MENU button to exit from the Live View Function Settings menu. Make sure you're using a Creative Zone mode if you want to view the full array of Live View function options.
4. **Specify Movie or Live View shooting.** Rotate the Mode Dial to the Movie position if you want to shoot video instead of stills.
5. **Activate Live View.** Press the Start/Stop button on the right side of the viewfinder to begin or end Live View, or to begin/end video capture.

There are seven choices in the Live View menu (Shooting 4 menu when using a Creative Zone mode). (See Figure 6.1.) They include:

- **Live View Shoot.** Enable/disable Live View shooting here. As I mentioned, disabling Live View does not affect movie shooting, which is activated by rotating the Mode Dial to the Movie position.
- **Autofocus mode (Quick mode, Live mode, Live “Face Detection” mode).** This option, explained next, lets you choose between Phase Detection, Contrast Detection, and Contrast Detection with “Face” Recognition.
- **Grid Display (Off, Grid 1, Grid 2).** Overlays Grid 1, a “rule of thirds” grid, on the screen to help you compose your image and align vertical and horizontal lines; or Grid 2, which consists of four rows of six boxes, which allow finer control over placement of images in your frame.

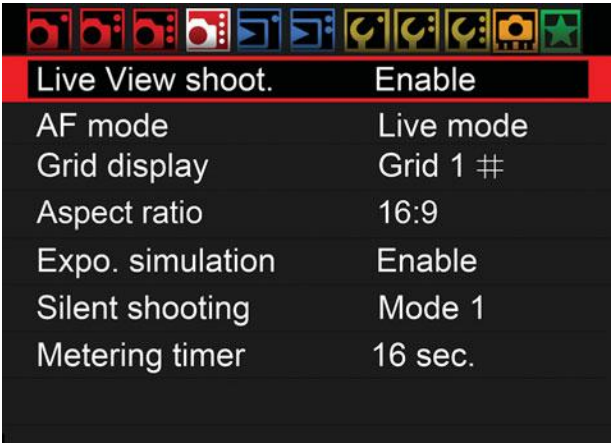


Figure 6.1
You can choose grids, metering timeout, and autofocus mode when using Live View.

- **Aspect Ratio (3:2, 4:3, 16:9, or 1:1).** Selecting proportions other than the 3:2/18-megapixel default results in a cropped image. At the Large or RAW size setting, you end up with images that measure 4608×3456 pixels/16MP (4:3 ratio); 5184×2912 pixels/15.1MP (16:9 ratio); and 3456×3456 pixels/11.9MP (1:1 ratio). At Medium (M), Small 1 (S1), Small 2 (S2), Small 3 (S3), and mRAW or sRAW, the images are proportionately smaller.
- **Expo. Simulation (Enable/Disable).** When disabled, the LCD will show the Live View image at standard brightness. Use this option when you want to see an approximation of the brightness of the actual image. If you simply want an image that is easier to view in bright or dark conditions, you can adjust the LCD image using the LCD brightness option in the Set-up 2 menu, as described in Chapter 4. Enable Exposure Simulation when you want the brightness of the LCD image to mimic the brightness level of the image you will capture. You can use this feature to roughly gauge whether the exposure is correct, without the need to reference a histogram. Exposure Simulation is faster to use, but may not work as well under dim lighting.
- **Silent shooting (Mode 1, Mode 2, Disable).** This option turns on or off optional quiet modes that reduce shutter noise. I'll explain your choices in more detail later.
- **Metering timer (4 sec. to 30 min.).** This option allows you to specify how long the EOS 60D's metering system will remain active before switching off. Tap the shutter release again to re-activate the metering timer.

Activating Live View

When you're ready to activate Live View, press the dedicated Live View button on the back of the camera, to the immediate right of the viewfinder window and marked with a red dot. The mirror will flip up, and the sensor image will appear on the LCD. Here are some things you should keep in mind when Live View is active:

- **Shooting functions don't interrupt.** You can change settings or review images normally when in Live View mode. Press the AF, DRIVE, or ISO buttons on the top of the camera, and an overlay appears superimposed on the Live View screen. (Metering mode cannot be changed, so the Metering button is disabled.) You can use the Quick Control Dial and Main Dial to change those settings. You can also press the Q button on the right side of the back of the camera to make adjustments to the Focusing or Drive modes, White Balance Picture Style, Auto Lighting Optimizer, Image Quality, Image Size, and Flash Exposure Compensation. If you've chosen AF Quick autofocus mode, you can set the AF point and AF area selection mode.

- **Live View continues.** When you press the shutter release, the 60D will take a photo, then display the image you just shot for review, as normal. When picture review is finished, the camera returns to Live View mode. You can take as many consecutive shots using Live View as you like, barring sensor overheating. To exit Live View entirely, press the Start/Stop button.
- **Metering mode cannot be changed.** As I said earlier in this list, you cannot change to Partial, Spot, or Center-weighted metering when Live View is active. Evaluative metering linked to the focus frame is always used.
- **Fixed continuous exposure.** If you shoot in Continuous mode, the exposure determined for the first image will be used for all subsequent images in the series.
- **Press DOF button to check focus and exposure.** If you press the depth-of-Field button on the left side of the lens mount (when holding the camera in shooting position) while using Live View, the lens will stop down to the taking aperture and you'll see the effective focus range, as well as approximate image brightness.
- **Flash OK.** You can use flash when working with Live View, but the FE (flash exposure) lock, modeling flash, and test firing of the flash are not possible. In addition, to change an external Speedlite's own custom functions, you'll need to use the camera's menus in the Flash Control section of the Shooting 1 menu. The flash's own Custom Function setting capability is disabled.
- **Watch for overheating.** Leaving Live View on for extended periods increases the temperature of the sensor, potentially causing noise or odd colors in your image. If you want to take a long exposure, turn off Live View for several minutes before shooting, to allow your sensor to cool. Live View will shut off automatically after 30 minutes, and a high temperature icon warns you when things start to heat up.
- **Information display.** During Live View, useful information is shown on the screen, such as battery status, Picture Style, and most of the shooting information (shutter speed, *f*/stop, ISO setting, number of exposures remaining) you'd see through the viewfinder. Press the INFO. button to change the amount of information shown. (See Figure 6.2.)

Focusing in Live View

Press the AF-ON button or press the shutter button halfway to activate autofocus using the currently set Live View autofocus mode. Those modes are Live mode, Live "Face Detection" mode, and Quick mode. You can also use manual focus. I'll describe each of these separately.

Select the focus mode for Live View from the Live View entries in the Shooting 4 menu, described earlier. You can also change focus mode while using Live View by pressing the Q button, highlighting the focus options with the Multi-controller keys (it's at the top right of the column, as you saw in Figure 6.2). Then rotate the QCD or Main Dial until one of the following three focus modes is selected.

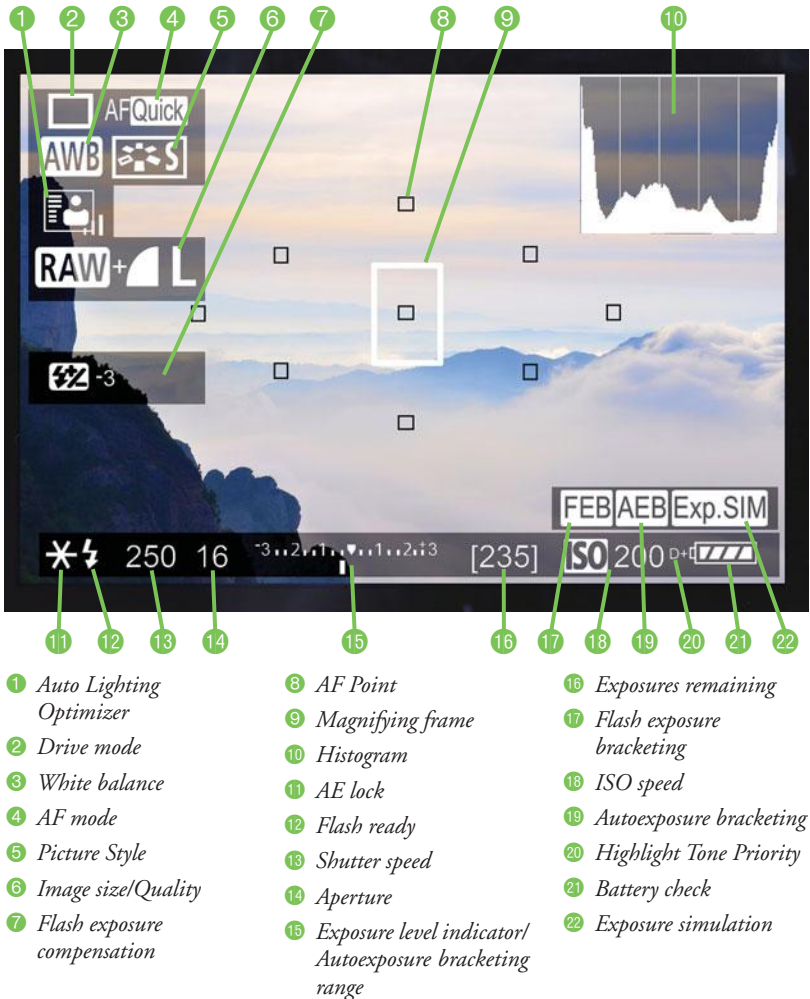


Figure 6.2 Press the INFO. button to change the type of information displayed on the screen when using Live View.

Live Mode

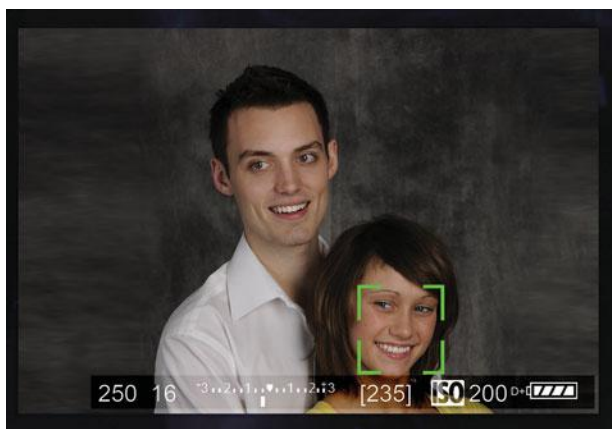
This mode uses Contrast Detection, which uses the relative sharpness of the image as it appears on the sensor to determine focus. This method is less precise, and usually takes longer than Quick mode. To autofocus using Live mode, follow these steps:

1. **Set lens to autofocus.** Make sure the focus switch on the lens is set to AF.
2. **Activate Live View.** Press the Start/Stop button.
3. **Choose AF point.** Use the Multi-controller to move the AF point anywhere you like on the screen, except for the edges. Press the Trash button to return the AF point to the center of the screen.
4. **Select subject.** Compose the image on the LCD so the selected focus point is on the subject.
5. **Press and hold the shutter button halfway.** When focus is achieved, the AF point turns green, and you'll hear a beep if the sound has been turned on in the Shooting 1 menu. If the 60D is unable to focus, the AF point turns orange instead.
6. **Take picture.** Press the shutter release all the way down to take the picture.

Live (Face Detection) Mode

This mode also uses contrast detection, using the relative sharpness of the image as it appears on the sensor to determine focus. The 60D will search the frame for a human face and attempt to focus on the face. Like Live mode, this method is less precise, and usually takes longer than Quick mode. To autofocus using Live (Face Detection) mode, follow these steps:

1. **Set lens to autofocus.** Make sure the focus switch on the lens is set to AF.
2. **Activate Live View.** Press the Start/Stop button.
3. **Face detection.** Select Face Detection mode using the AF button or Quick Control screen. A frame will appear around a face found in the image. (See Figure 6.3.) (You can press the Zoom/* button on the upper-right back of the camera to magnify the area of the image inside the magnify frame.) If more than one face is found, a frame with notches that look like "ears" appears. In that case, use the Multi-controller to move the frame to the face you want to use for focus. If no face is detected, the AF point will be displayed and focus will be locked into the center.
4. **Troubleshoot (if necessary).** If you experience problems in Live (Face Detection) mode, press down on the Multi-controller button to switch from Live (Face Detection) mode to Live mode. Face Detection is far from

**Figure 6.3**

The 60D can detect faces during autofocus.

perfect. The AF system may fail to find a face if the person's visage is too large/small or light/dark in the frame, tilted, or located near an edge of the picture. It may classify a non-face as a face. If you switch to Live mode, you can always select another AF point and press the AF button or Quick Control screen again to toggle back to Live (Face Detection) mode.

5. **Press and hold the shutter release halfway.** When focus is achieved, the AF point turns green, and you'll hear a beep. If the 60D is unable to focus, the AF point turns orange instead.
6. **Take the picture.** Press the shutter release all the way down to take the picture.

Quick Mode

This mode uses Phase Detection. It temporarily interrupts Live View mode to allow the EOS 60D to focus the same AF sensor used when you focus through the viewfinder. Because the step takes a second or so, you may get better results using this autofocus mode when the camera is mounted on a tripod. If you hand-hold the 60D, you may displace the point of focus achieved by the autofocus system. It also simplifies the operation if you use One-Shot focus and center the focus point. You can use AI Servo and Automatic or Manual focus point selection, but if the focus point doesn't coincide with the subject you want to focus on, you'll end up with an out-of-focus image. Just follow these steps.

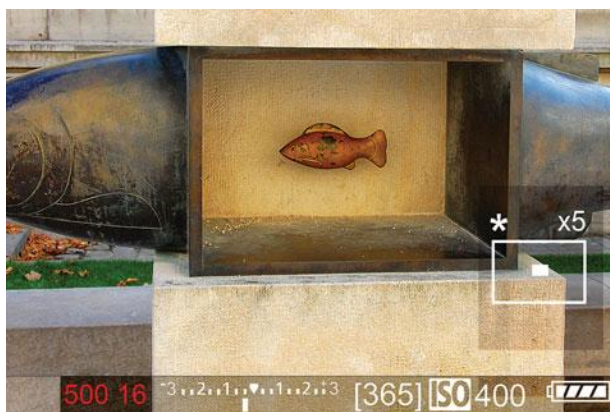
1. **Set lens to autofocus.** Make sure the focus switch on the lens is set to AF.
2. **Activate Live View.** Press the Start/Stop button.

3. **Choose AF point.** Press the AF button and use the Multi-controller to move the single AF point in use. (All nine focus points are displayed only in Quick Mode.)
4. **Select subject.** Compose the image on the LCD so the selected focus point is on the subject.
5. **Press and hold the shutter release halfway.** The LCD will blank as the mirror flips down, reflecting the view of the subject to the Phase Detection AF sensor.
6. **Wait for focus.** When the 60D is able to lock in focus using Phase Detection, a beep (if activated) will sound. If you are hand-holding the 60D, you may hear several beeps as the AF system focuses and refocuses with each camera movement. Then, the mirror will flip back up, and the Live View image reappears. The AF focus point will be highlighted in green on the LCD.
7. **Take picture.** Press the shutter release all the way down to take the picture. (You can't take a photo while Quick mode AF is in process, until the mirror flips back up.)

Manual Mode

Focusing manually on an LCD screen isn't as difficult as you might think, but Canon has made the process even easier by providing a magnified view. Just follow these steps to focus manually.

1. **Set lens to manual focus.** Make sure the focus switch on the lens is set to MF.
2. **Move magnifying frame.** Use the Multi-controller to move the focus frame that's superimposed on the screen to the location where you want to focus. You can press the Multi-controller to center the focus frame in the middle of the screen.
3. **Press the Zoom In button.** The area of the image inside the focus frame will be magnified 5X. (See Figure 6.4.) Press the Zoom In button again to increase the magnification to 10X. A third press will return you to the full-frame view. The enlarged area is artificially sharpened to make it easier for you to see the contrast changes, and simplify focusing. When zoomed in, press the shutter release halfway and the current shutter speed and aperture are shown in orange. If no information at all appears, press the INFO. button.
4. **Focus manually.** Use the focus ring on the lens to focus the image. When you're satisfied, you can zoom back out by pressing the Zoom Out button.

**Figure 6.4**

You can manually focus the center area, which can be zoomed in 5X or 10X.

Using Exposure Simulation

If you've activated Exposure Simulation, the LCD won't maintain a constant brightness level under varying ambient lighting conditions but will instead brighten or dim to emulate the correct exposure or over-/underexposure you'll get with the current settings.

Enabling this feature also activates the histogram, which you can use to judge exposure. If the histogram is not visible on the Live View screen, press the INFO. button until it appears. The histogram may not display properly under very low or very high light levels, and is not available at all when you're using flash or exposures with the Bulb setting.

Silent Shooting

Although silent shooting is far from a stealth photography mode, it does produce a quieter shutter noise than what you get when not in Live View mode. That's because the mirror has already been flipped out of the way, so the sound produced primarily comes from the opening and closing of the shutter. You can activate silent shooting from the Live View Function settings in the Shooting 4 menu. You have three choices:

- **Mode 1.** This mode reduces the noise level of the shutter, but allows taking several shots in succession, including continuous shooting.
- **Mode 2.** This mode reduces the noise even further by delaying the action when you press the shutter release down (only a slight click is heard). When you let up slightly on the shutter release, the shot is taken, producing another soft click. Continuous shooting is not possible in Mode 2.

- **Disable.** Turns off the feature, producing the normal shutter noise sounds. This mode should be used if you're working with a tilt/shift lens, or an extension tube. Although you'll hear two clicks when using this mode, only one picture will be exposed. If you use flash, Mode 1 and Mode 2 are automatically disabled.

Shooting Movies

The Canon EOS 60D can shoot full HDTV movies with monaural sound (or stereo sound if you plug in an external microphone) at 1920 × 1080 resolution. In some ways, the camera's Movie mode is closely related to the 60D's Live View still mode. In fact, the 60D uses Live View type imaging to show you the video clip on the LCD as it is captured. Many of the functions and setting options are the same, so the information in the previous sections will serve you well as you branch out into shooting movies with your camera.

You'll want to keep the following things in mind before you start:

- **Choose your resolution.** The 60D can capture movies in Full High Definition (1920 × 1080 pixel) resolution at 30 or 24 fps; Standard High Definition (1280 × 720 at 60 fps); 640 × 480 resolution at 60 fps; and a 640 × 480 cropped resolution that provides a 7x telephoto effect. I'll show you how to specify resolution in the next section.
- **You can still shoot stills.** Press the shutter release all the way down at any time while filming movies in order to capture a still photo. The 60D will use the Image Quality settings you specify in the Shooting 1 menu, and will operate only in Single shooting drive mode (Continuous shooting or self-timer delays are not possible). The flash is disabled. You can also extract a 2MP, 1MP, or .3MP image from your movie clips using ZoomBrowser. Still photos are stored as separate files.
- **Use the right card.** You'll want to use a fast memory card, at least a Class 6 SDHC card; a Class 10 card is even better. Slower cards may not work properly. Choose a memory card with at least 4GB capacity (8GB or 16GB are preferable). If the card you are working with is too slow, a five-level thermometer-like "buffer" indicator may appear at the right side of the LCD, showing the status of your camera's internal memory. If the indicator reaches the top level because the buffer is full, movie shooting will stop automatically.
- **Use a fully charged battery.** Canon says that a fresh battery will allow about one hour of filming at normal (non-Winter) temperatures.

- **Image stabilizer uses extra power.** If your lens has an image stabilizer, it will operate at all times (not just when the shutter button is pressed halfway, which is the case with still photography) and use a considerable amount of power, reducing battery life. You can switch the IS feature off to conserve power. Mount your camera on a tripod, and you don't need IS anyway.
- **Silent running.** You can connect your 60D to a television or video monitor while shooting movies, and see the video portion on the bigger screen as you shoot. However, the sound will not play—that's a good idea, because, otherwise, you could likely get a feedback loop of sound going. The sound will be recorded properly and will magically appear during playback once shooting has concluded.

MOVIE TIME

I've standardized on 16GB memory cards when I'm shooting movies; these cards will give you 49 minutes of recording at 1920 × 1080 Full HD resolution. (Figure 330MB per minute of capture.) A 4GB card, in contrast, offers just 12 minutes of shooting at the Full HD setting.

Movie Settings

The Movie 1 menu has six entries (see Figure 6.5):

- **Movie exposure.** Leave this on Auto most of the time. Change to Manual if you'd like to select ISO sensitivity, shutter speed, and aperture.
- **Autofocus mode (Quick mode, Live mode, Live “Face Detection” mode).** This option lets you choose between Phase Detection, Contrast Detection, and Contrast Detection with “Face” Recognition. In Movie modes, none of these autofocus modes will track a moving subject.
- **AF w/ shutter button during movie recording.** You can choose Enable (to allow refocusing during movie shooting) or Disable to prevent it. If you select Enable, then you can refocus during capture by pressing the shutter button. Refocusing will take place *only* when you press the shutter button; the 60D is not able to refocus continually as you shoot. Note that even if you've set the 60D to Quick mode focus, it will use Phase Detection only at the beginning of the clip; subsequent refocusing will be performed using Live mode. Set this parameter to Disable to avoid accidentally refocusing during a shot.

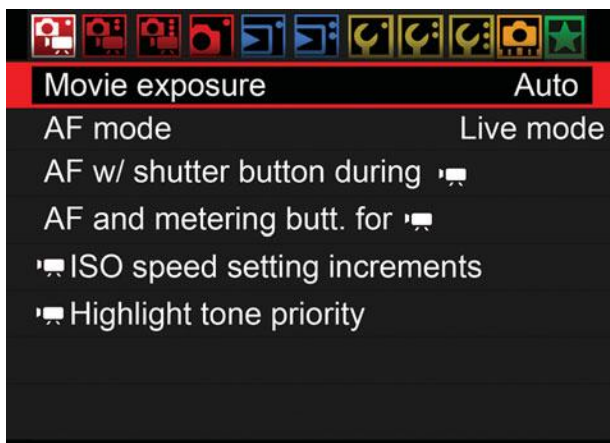


Figure 6.5
The Movie 1 menu has six entries.

- **AF and metering button for movie recording.** The shutter button, AF start button, and AE lock button can each be used in various combinations to autofocus start, autofocus stop, metering start, or autoexposure lock. You can also choose to have metering *and* autofocus start triggered by a single button press, or define any of the three buttons with no function at all, choosing from 10 different combinations (largely a matter of personal preference).
- **Movie recording ISO speed setting increments.** Select 1/3 or 1-stop increments. Use the 1/3 stop setting for fine-tuning, or the 1-stop setting to make changing ISO sensitivity between scenes that much faster.
- **Movie recording Highlight Tone Priority.** Choose Enable to improve the detail in highlights in your movie clips, say, when shooting under high contrast lighting conditions. Use Disable if you'd like to keep the standard tonal range, which is optimized for middle gray tones. If you enable this feature, then the Auto Lighting Optimizer (discussed in Chapter 3) is disabled, and your ISO speed range is limited to ISO 200-6400.

The Movie 2 menu has five entries (see Figure 6.6):

- **Movie rec. size.** Choose 1920 × 1080 (Full HD) at 30 or 24 fps; 1280 × 720 (HD) at 60 fps; or 640 × 480 pixel (Standard resolution) at 60 fps. The frame rates are for NTSC television mode; for the PAL system, the camera will substitute 50 fps for 60 fps, and 25 fps for 30 fps. (The motion picture standard, 24 fps, remains constant.) Single movie clips can be no more than 4GB in size, and shooting will stop automatically at that point. At either



Figure 6.6
The Movie 2 menu has five entries.

HD setting, your movie will max out at about 12 minutes; with either of the 640×480 -pixel settings, you can shoot about 24 minutes continuously. You can record about 44 minutes of video/sound on a 16GB memory card in either HD format, or 92 minutes in either 640×480 -pixel format.

■ **Sound recording.** Choose Auto, Manual, or Disable.

■ **Auto.** The 60D sets the audio level for you.

■ **Manual.** Choose from 64 different sound levels. Select Rec Level and rotate the QCD while viewing the decibel meter at the bottom of the screen to choose a level that averages -12 dB for the loudest sounds.

■ **Disable.** Shoot silently, and add voiceover, narration, music, or other sound later in your movie editing software.

You can use your 60D's built-in monaural microphone or plug in a stereo microphone into the 3.5mm jack on the side of the camera. An external microphone is a good idea because the built-in microphone can easily pick up camera operation, such as the autofocus motor in a lens.

■ **Silent shooting (Mode 1, Mode 2, Disable).** This option turns on or off optional quiet modes that reduce shutter noise when shooting still photos while in Movie mode, as explained earlier in the Live View section.

■ **Metering timer (4 sec. to 30 min.).** This option allows you to specify how long the EOS 60D's metering system will remain active before switching off.

■ **Grid display.** You can select Off, Grid #1, or Grid #2.

Capturing Video/Sound

1. **Change to Movie mode.** Rotate the Mode Dial to the Movie setting.
2. **Focus.** Use the autofocus or manual focus techniques described in the preceding sections to achieve focus on your subject.
3. **Begin filming.** Press the Start/Stop button to begin shooting. A red dot appears in the upper-right corner of the screen to show that video/sound are being captured. The access lamp also flashes during shooting.
4. **Changing shooting functions.** As with Live View, you can change settings or review images normally when shooting video.
5. **Lock exposure.** You can lock in exposure by pressing the */Thumbnail/Zoom Out button on top of the 60D, located just aft of the Main Dial. Unlock exposure again by pressing the button once more.
6. **Stop filming.** Press the Start/Stop button again to stop filming.
7. **View your clip.** Press the Playback button (located to the bottom right of the LCD). You will see a still frame with the clip timing and a symbol telling you to press the SET button to see the clip. A series of video controls appear at the bottom of the frame. Press SET again and the clip begins. A blue thermometer bar progresses in the upper-left corner as the timing counts down. Press SET to stop at any time.

GETTING INFO

The information display shown on the LCD screen when shooting movies is almost identical to the one displayed during Live View shooting. The settings icons in the left column show the same options, which can be changed in Movie mode, too, except that the Drive mode choice is replaced by an indicator that shows the current movie resolution and time remaining on your memory card.

Tips for Shooting Better Video

There are a number of different things to consider when planning a video shoot:

Use a Shooting Script/Storyboards

A shooting script is nothing more than a coordinated plan that covers both audio and video and provides order and structure for your video. A detailed script will cover what types of shots you're going after, what dialogue you're going to use, audio effects, transitions, and graphics. A storyboard is a series of panels providing visuals that help you visualize locations, placement of actors/actresses, props,



Figure 6.7 A storyboard helps you plan your shots.

and furniture. It also helps show how you want to frame or compose a shot. For Figure 6.7, I took a series of photographs I'd shot at a parade the previous year to plan out my video coverage for the same parade the following year.

Advance a Story

A lot of the work will come after you shoot, when your video is assembled using a movie editing program like iMovie or Windows Movie Maker. Audio and video should always be advancing the story. While it's okay to let the camera linger from time to time, it should only be for a compelling reason and only briefly. It only takes a second or two for an establishing shot to impart the necessary information, and the same goes for a dramatic stare. Provide variety too. Change camera angles and perspectives often and never leave a static scene on the screen for a long period of time.

Keep Transitions Basic

Fancy transitions that involve exotic “wipes,” dissolves, or cross fades take too long for the average viewer and make your video ponderous. Save dissolves to show the passage of time (it's a cinematic convention that viewers are used to and understand).

Composition

Movie shooting calls for careful composition, and, in the case of HD video format, that composition must be framed by the 16:9 aspect ratio of the format, as in the examples that follow. Static shots where the camera is mounted on a tripod and everything's shot from the same distance are a recipe for dull videos. Try these tricks:

- **Establishing shot.** This composition, shown at left in Figure 6.8, establishes the scene and tells the viewer where the action is taking place.

- **Medium shot.** This shot is composed from about waist to headroom (some space above the subject's head). It's useful for providing variety from a series of close-ups and also makes for a useful first look at a speaker. (See Figure 6.8, right.)
- **Close-up.** The close-up, usually described as “from shirt pocket to head room,” provides a good composition for someone talking directly to the camera. (See Figure 6.9, left.)
- **Extreme close-up.** This shot has been described as the “big talking face” shot. Styles and tastes change over the years and now the big talking face is much more commonly used (maybe people are better looking these days?) and so this view may be appropriate. (See Figure 6.9, right.)



Figure 6.8

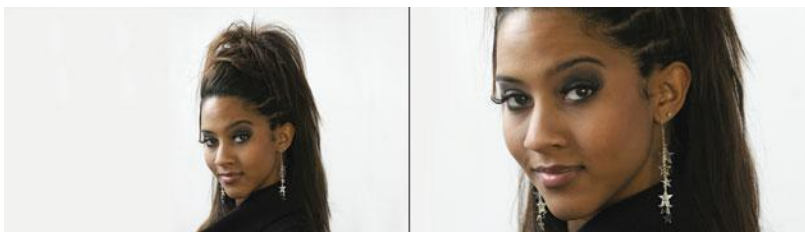


Figure 6.9

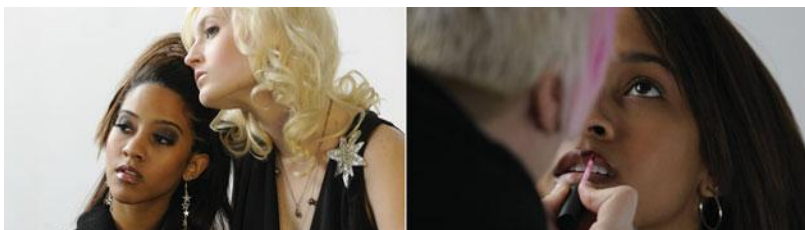


Figure 6.10

- **“Two” shot.** A two shot shows a pair of subjects in one frame. They can be side by side or one in the foreground and one in the background. Subjects can be standing or seated. A “three shot” is the same principle except that three people are in the frame. (See Figure 6.10, left.)
- **Over the shoulder shot.** Long a tool of interview programs, the “over the shoulder shot” uses the rear of one person’s head and shoulder to serve as a frame for the other person. This puts the viewer’s perspective as that of the person facing away from the camera. (See Figure 6.10, right.)

Lighting for Video

Much like in still photography, how you handle light pretty much can make or break your videography. You can significantly improve the quality of your video by increasing the light falling in the scene. An inexpensive shoe mount video light, which will easily fit in a camera bag, can be found for \$15 or \$20. You can even get a good quality LED video light for less than \$100. Work lights sold at many home improvement stores can also serve as video lights since you can set the camera’s white balance to correct for any colorcasts. Much of the challenge depends upon whether you’re just trying to add some fill light on your subject versus trying to boost the light on an entire scene. A small video light in the camera’s hot shoe mount or on a flash bracket will do just fine for the former. It won’t handle the latter.

Lighting can either be hard (direct) light or soft (diffused). Hard light is good for showing detail, but can also be very harsh and unforgiving. “Softening” the light, but diffusing it somehow, say, with an umbrella or white cardboard reflector, can reduce the intensity of the light but make for a kinder, gentler light as well.

Tips for Better Audio

Since recording high quality audio is such a challenge, it’s a good idea to do everything possible to maximize recording quality. Here are some ideas for improving the quality of the audio your 60D records:

- **Get the camera and microphone close to the speaker.** The farther the microphone is from the audio source, the less effective it will be in picking up that sound. This means you’ll have to boost volume in postproduction, which will also amplify any background noises. While having to position the camera and microphone closer to the subject affects your lens choices and lens perspective options, it will make the most of your audio source.

- **Turn off any sound makers you can.** Little things like fans and air handling units aren't obvious to the human ear, but will be picked up by the microphone. Try to turn off any machinery or devices that you can plus make sure cell phones are set to silent mode. Also, do what you can to minimize sounds such as wind, radio, television, or people talking in the background. Don't forget to close windows if you're inside to shut out noises from the outside.
- **Consider using an external microphone.** If making videos is important to you, think about buying a quality microphone. Even a good quality built-in microphone can pick up internal camera noises. Using an external microphone also means you can get the microphone closer to the subject while keeping the camera a little farther away. A shotgun (directional) microphone can also help isolate a speaker's audio from background noise.
- **Make sure to record some "natural" sound.** If you're shooting video at an event of some kind, make sure you get some background sound that you can add to your audio as desired in postproduction.
- **Consider recording audio separately.** Lip-syncing is probably beyond most of the people you're going to be shooting, but there's nothing that says you can't record narration separately and add it later. Any time the speaker is off camera, you can work with separately recorded narration, using a program like Adobe Premiere, rather than recording the speaker on camera. This can produce much cleaner sound.

Chapter 7

Shooting Tips

Here you'll find tips on settings to use for different kinds of shooting, beginning with recommended settings for some Playback, Shooting, and Custom Setting menu options. You can set your camera up to shoot the main type of scenes you work with, then use the charts that follow to make changes for other kinds of images. Most will set up their 60D for my All Purpose settings, and adjust from there.

Default, All Purpose, Sports—Outdoors, Sports—Indoors

	Default	All Purpose	Sports Outdoors	Sports Indoors
Exposure Mode	Your choice	P	Tv	Tv
Autofocus Mode	One-Shot	AI Focus	AI Servo	AI Servo
Drive Mode	Single Shooting	Single Shooting	Continuous Shooting High	Continuous Shooting High
Shooting Menus				
Beep	Enable	Enable	Enable	Enable
Image Review	2 sec.	2 sec.	Off	Off
Peripheral Illumination Correction	Enable	Enable	Enable	Enable
Auto Lighting Optimizer	Standard	Standard	Disable	Disable
Metering Mode	Evaluative	Evaluative	Evaluative	Evaluative
Color Space	sRGB	sRGB	sRGB	sRGB
Picture Style	Standard	Standard	Standard	Standard
ISO	Auto	Auto	800-3200	800-3200
Set-up Menus				
Auto Power Off	30 sec.	30 sec.	Off	Off
LCD brightness	Medium	Medium	Medium	Medium
Custom Functions				
C.Fn I-01: Exposure level increments	0:1/3 stop	0:1/3 stop	0:1/3 stop	0:1/3 stop
C.Fn I-03: ISO expansion	0:off	0:off	0:off	On

	Default	All Purpose	Sports Outdoors	Sports Indoors
C.Fn I-07: Flash sync. Speed in Av mode	0:Auto	0:Auto	0:Auto	2:1/250 (fixed)
C.Fn II-01: Long Exposure Noise Reduction	0:Off	0:Off	0:Off	0:Off
C.Fn II-02: High ISO Speed Noise Reduction	0:Standard	0:Standard	0:Standard	2:Strong
C.Fn II-03: Highlight Tone Priority	0:Disable	1:Enable	0:Disable	0:Disable
C.Fn III-04: AF-Assist Beam Firing	0:Enable	0:Enable	1:Disable	1:Disable

Stage Performance, Long Exposure, HDR, Portrait

	Stage Performances	Long Exposure	HDR	Portrait
Exposure Mode	Tv	Manual	Tv	Tv
Autofocus Mode	One-Shot	Manual	One-Shot	One-Shot
Drive Mode	Continuous Low	Single Shooting	Continuous High	Continuous High
Shooting Menus				
Beep	Disable	Enable	Enable	Enable
Image Review	Off	Off	Off	2 sec.
Peripheral Illumination Correction	Enable	Enable	Enable	Enable
Auto Lighting Optimizer	Standard	Standard	Disable	Disable
Metering Mode	Spot	Center-weighted	Evaluative	Center-weighted
Color Space	Adobe RGB	Adobe RGB	Adobe RGB	Adobe RGB

Stage Performance, Long Exposure, HDR, Portrait (continued)

	Stage Performances	Long Exposure	HDR	Portrait
Picture Style	User - Reduce contrast, add sharpening	Neutral	Standard	Standard
ISO	800- 3200	800-3200	Auto	Auto
Set-up Menus				
Auto Power Off	30 sec.	Off	Off	Off
LCD Brightness	Dimmer	Dimmer	Medium - #4	Medium - #4
Custom Functions				
C.Fn I-01: Exposure Level Increments	0:1/3 stop	0:1/3 stop	0:1/3 stop	0:1/3 stop
C.Fn I-03: ISO Expansion	1:On	1:On	0:Off	0:Off
C.Fn I-07: Flash Sync. Speed in Av Mode	0:Auto	0:Auto	0:Auto	0:Auto
C.Fn II-01: Long Exposure Noise Reduction	2:On	2:0n	0:Off	0:Off
C.Fn II-02: High ISO Speed Noise Reduction	2:Strong	2:Strong	0:Standard	0:Standard
C.Fn II-03: Highlight Tone Priority	1:Enable	1:Enable	0:Disable	1:Enable
C.Fn III-04: AF-Assist Beam Firing	1:Disable	1:Disable	1:Disable	1:Disable

Studio Flash, Landscape, Macro, Travel, E-Mail

	Studio Flash	Landscape	Macro	Travel	E-Mail
Exposure Mode	Manual	Av	Tv	Tv	Av
Autofocus Mode	One-Shot	One-Shot	Manual	One-Shot	One-Shot
Drive Mode	Single Shooting	Single Shooting	Single Shooting	Single Shooting	Single Shooting
Shooting Menus					
Beep	Enable	Enable	Enable	Disable	Enable
Image Review	2 sec.	2 sec.	Off	Off	2 sec.
Peripheral Illumination Correction	Enable	Enable	Enable	Enable	Enable
Auto Lighting Optimizer	Standard	Standard	Standard	Standard	Standard
Metering Mode	Manual	Evaluative	Spot	Evaluative	Evaluative
Color Space	Adobe RGB	Adobe RGB	Adobe RGB	sRGB	sRGB
Picture Style	Standard	Vivid	Standard	Vivid	Vivid
ISO	Auto	Auto	Auto	Auto	Auto
Set-up Menus					
Auto Power Off	Off	Off	Off	30 sec.	30 sec.
LCD Auto Off	Enable	Enable	Enable	Enable	Enable
LCD Brightness	Medium				
Medium	Medium	Medium	Medium		

Studio Flash, Landscape, Macro, Travel, E-Mail (continued)

	Studio Flash	Landscape	Macro	Travel	E-Mail
Custom Functions					
C.Fn I-01: Exposure Level Increments	0:1/3 stop	0:1/3 stop	0:1/3 stop	0:1/3 stop	
C.Fn I-03: ISO Expansion	0:Off	0:Off	0:Off	0:Off	0:Off
C.Fn I-07: Flash Sync. Speed in Av Mode	0:Auto	0:Auto	0:Auto	0:Auto	0:Auto
C.Fn II-01: Long Exposure Noise Reduction	0:Off	2:0n	2:On	0:Off	0:Off
C.Fn II-02: High ISO Speed Noise Reduction	0:Standard	0:Standard	0:Standard	0:Standard	0:Standard
C.Fn II-03: Highlight Tone Priority	1:Enable	1:Enable	0:Disable	1:Enable	1:Enable
C.Fn III-04: AF-Assist Beam Firing	1:Disable	1:Disable	0:Enable	0:Enable	0:Enable

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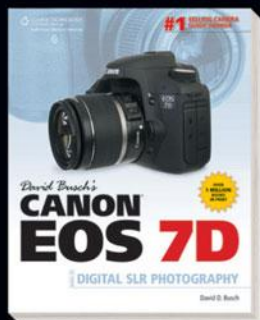
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