Canon 5D Mark IV Experience

The Still Photography Guide to
Operation and Image Creation with the
Canon EOS 5D Mark IV

an e-book by:
Douglas J. Klostermann

PREVIEW of:

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www.lensprotogo.com

And special thanks to **Newtonville Camera** of Newton, Mass.
http://www.nvcamera.com

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The Still Photography Guide to Operation and Image Creation with the Canon EOS 5D Mark IV
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1.1 Introduction to the 5D Mark IV

The introduction of the Canon EOS 5D Mark IV brings about an important and long-awaited update to its popular and powerful predecessor, the 5D Mark III. Several of the camera's essential specifications have been improved, including a 30.4 megapixel sensor, rapid 7 frames per second continuous shooting speed, and the 61 point Viewfinder autofocus system now with expanded coverage of the frame. The camera also boasts a fast Digic 6+ processor, a touch screen Monitor, and built-in GPS and Wi-Fi. Plus the 5D Mark IV includes several improvements to its video capabilities, including 4K video, the *Dual Pixel CMOS AF* Live View and movie autofocus system which can assist in retaining continuous focus on moving subjects, and the *High Frame Rate* option for creating slow motion video.

Figure 1 - The Canon EOS 5D Mark IV.

The highly customizable 61 point Viewfinder autofocus system includes 41 more sensitive cross-type points. And in a dramatic upgrade from the 5D Mark III, all 61 AF Points, including 21 cross-type points, are available when shooting with a lens plus teleconverter combination that results in an f/8 effective aperture. When tracking moving subjects with *AI Servo* Autofocus Mode, the 61 AF Points and autofocus configuration Cases will allow you to more successfully retain focus on a wide variety of different types of subjects during sports, action, and wildlife shooting. The numerous AF Area

Selection Modes, ranging from a small Spot point, to a Zone of several points, to all 61 points, will enable you to more easily keep subjects of different sizes and movements located at the active focus points. And the new AF Area Selection Button on the rear of the camera will help you to quickly select your desired AF Area Selection Mode. The camera's *Custom Controls* menu will allow you to assign numerous different options to various camera buttons, including the ability to temporarily switch to a completely different autofocusing or shooting set-up with the press of a button.

Figure 2 - 1960 Chevrolet Corvette, Concord, New Hampshire - Canon 5D Mark IV, Shutter speed 1/1600, Aperture f/2.8, ISO 100.

The new *Dual Pixel CMOS AF* autofocusing system will enable you to more quickly and accurately track and focus on a moving subject, using a large central area of the frame, when working in Live View or shooting video. When combined with one of Canon's STM "stepping motor" lenses, this can even be accomplished with considerably reduced lens operation noise. The increased 7 frames per second (fps) continuous shooting speed will enable you to capture exactly the right moment, expression, or peak of action, and the fast frame rate can be maintained for a continuous burst of up to 21 RAW images. A new 150,000-pixel RGB+IR metering system with 252 zones includes the option of using face recognition to assist with focusing, plus makes use of color to identify and track subjects, which is ideal for sports and action situations.

The 5D Mark IV also includes dual memory card slots (CF and SD) that can be configured in a variety of ways, Silent Shooting Drive Modes for quieter shooting in

sensitive situations, and better low-light capabilities at high ISO settings. Expanded *Auto ISO* capabilities make this feature much more versatile, including when shooting in Manual (M) Mode for stills or video, and the *Dual Pixel Raw* feature enables you to capture image files that can later be processed to adjust focus or reduce flare. Plus it offers Interval Timer and Time-Lapse shooting, and in-camera processing and lens correction features such as Multiple Exposures, HDR shooting, and chromatic aberration, distortion, and diffraction corrections. New *Auto White Balance* choices offer the option of either maintaining or eliminating the warm tones of incandescent lighting, a USB 3.0 port enables faster speeds when transferring images or during tethered shooting, and a Custom Quick Control Screen allows you to add and arrange icons and quickly access the shooting settings you use most often. The responsive touch screen can be used to quickly navigate menus, change settings, review images, and focus during Live View. When capturing images with the high resolution sensor, small camera movements can negatively impact image sharpness, so Canon has added a *Mirror Vibration Control System* to reduce internal camera movement, and a *Bulb Timer Exposure Time* setting so that the camera doesn't need to be touched during Bulb exposures.

For capturing video, the 5D Mark IV offers HD video with a choice of file formats and compression options, and 4K video with the option of saving 8.8 megapixel stills. It also offers the ability to adjust the *Movie Servo AF* speed, as the camera autofocuses on a subject at a different distance, dictating how quickly the new subject comes into focus. The *High Frame Rate* option allows you to shoot HD videos at 119.9 or 100.0 fps, which can then be played back in slow motion. And the camera provides clean HDMI output of HD video (not 4K video) to an external recorder, with audio.

With its high-resolution, high-quality image sensor, 61 point autofocus system, 7 frames per second continuous shooting speed, 150,000-pixel RGB+IR metering system, Digic 6+ processor, and high ISO capabilities in low light, the Canon 5D Mark IV enables photographers to consistently capture sharp, clean, and well-exposed images. Borrowing from the improved features of the Canon 5DS and 7D Mark II, the 5D Mark IV also boasts a big and bright Viewfinder with 100% coverage, a ruggedly built and highly weather-sealed body, and numerous customization options. The 5D Mark IV is clearly a powerful, advanced tool for digital photography and is fully capable of capturing professional quality images in most any situation you wish to use it.

But the 5D Mark IV is merely a tool. It is up to you to make use of its features and capabilities to create the images you envision. While the camera's manual will tell you about the settings and controls, how to change them, and their intended functions, this guide will build upon that and explain when and why you may want to use and customize them. Every button, feature, menu item, and Custom Function setting of the 5D Mark IV is there for a reason: to help you capture the images you want. Some of them are more useful to different types of photographers and shooting situations and you don't necessarily need to learn and use them all immediately, but this guide will help to give you the knowledge to confidently use the ones that turn your Canon 5D

Mark IV into an image capturing tool that works best for you and the photography situations you work in.

1.2 Take Control of Your Camera

Since the Canon 5D Mark IV is a tool to take the images *you* want to take, you obviously can't always allow the camera to make decisions for you. You have to take control of the camera to ensure that you capture exactly the images you intend - by autofocusing precisely where you want, setting the aperture or shutter speed that you want, and obtaining the exposure you want. While it is an intelligent camera, the 5D Mark IV cannot read your mind and your intentions and does not know that you wish to focus on and properly expose a detail of a fallen tree, while making the closer leaves and the background appear out of focus, with the leaves and twigs caught still and not blurred from the motion of the wind, in this lower-light setting, on a sunny day (see *Figure 3*). You have to tell the camera to do all of this through the various controls and settings, such as the autofocus AF Mode (focus on a specific part of the tree), the Exposure Metering Mode (properly expose for the tree bark and the scene), the Aperture setting (the out-of-focus near leaves and background), the Shutter Speed (freeze the motion of the leaves and twigs), the ISO (relatively low-light setting) and the White Balance (sunny day).

Figure 3 - Fallen Birch Tree, Whipple Hill, Lexington, Mass. - Autofocus, exposure metering mode, aperture, shutter speed, ISO, and white balance all considered in capturing this image. Canon 5D Mark IV, Shutter speed 1/500, Aperture f/2.8, ISO 1250.

One has to think about all this stuff for every photo? Well, yes, that is what digital SLR photography is all about! At least if you wish to consistently create the well made, interesting, and compelling images you envision. And that is why the 5D Mark IV has all the buttons, controls, settings, Custom Functions, and features for you to make use of.

Learning to use and get the most from a highly advanced digital SLR camera like the 5D Mark IV takes time, practice, patience, mistakes, and experimentation. If you have upgraded from a previous dSLR such as one of the previous 5D models, one of the 7D models, or from the 80D or one of its predecessors, you are in for a treat. The additional features and capabilities will more easily help you to capture photographs that you may have been limited in consistently attaining before. The versatile and accurate autofocus system, highly customizable camera controls, plus the advanced exposure metering system and high ISO capabilities of the 5D Mark IV will help you capture sharp, detailed images of subjects and moments that previously you may have missed.

If you are relatively new to dSLR photography and are still in the process of learning all the controls of a dSLR camera and the exposure concepts of digital photography, you have perhaps ventured into the proverbial deep end of the pool by choosing the advanced 5D Mark IV! But don't worry, this book will help guide you through the features, controls, and capabilities. Be sure to take it slowly and patiently as you learn the features and concepts that I will explain. With practice and experience you will soon be shooting with confidence and can begin to take advantage of your camera's more advanced functions. Even if you are an intermediate photographer, don't expect to just pick up all the new information at once, in one or two readings of a single book. (In fact, you wouldn't want to, as the never-ending journey of learning and mastering photography is a big part of what it's all about!) Try not to become frustrated if you don't quite understand something or aren't always getting the results you desire. Instead learn the controls, functions, settings, and concepts bit by bit, try them out in real life shooting situations, and return to this guide, the manual, and other photography books to address questions and problems you encounter. Continue to learn and to photograph often and it should all begin to come together, sometimes slowly and sometimes in rapid bursts of discovery and understanding.

1.3 Using This Guide

There are many different ways to use a dSLR camera and its controls to capture images, and many diverse situations in which photographers work. I'm going to concentrate on the techniques that I believe are the most practical, useful, and effective for the majority of photographers using the 5D Mark IV, while also explaining how settings can apply to specialized uses. The settings and techniques I discuss will apply to various types of photography including general photography, nature, action, portrait, and travel photography. Once you have a firm grasp of the controls, settings, and basic techniques you will have the tools and knowledge to address different issues, specific situations, and challenging scenes. I encourage you to then experiment and continue to learn, and to find the techniques that work best and are most comfortable or intuitive for you.

Figure 4 - Great Blue Heron Taking Flight, Arlington, Mass. - Canon 5D Mark IV, Shutter speed 1/1600, Aperture f/4.0, ISO 640.

The 5D Mark IV is a highly sophisticated tool that deserves to be used to its full potential, and that involves taking control of your camera and its functions, which means taking it off *Auto+* and *Program AE* Shooting Modes, and off automatically selected autofocus points (when not needed). While this may be more challenging at first, these are the techniques that are necessary to take full advantage of the capabilities of any dSLR including the 5D Mark IV, and will lead you to having more control and consistency over your image making. Hopefully this will inevitably lead to better images!

This guide is most effective when used with the camera in your hands. That is the best way to directly follow and understand the controls, functions, and settings as they are being explained. It is also intended to be used in addition to the camera's manual, not to completely replace it, so every bit of information in the *Canon EOS 5D Mark IV Instruction Manual* will not be repeated here. Among the official manual's often brief descriptions and sometimes frustratingly incomplete and disjointed explanations, there is some very valuable information, as well as the basics for buttons, controls, and how to access and change all the settings. And I will refer to the manual for very specialized or rarely-used functions that are well-explained there.

PDF versions of the *Canon EOS 5D Mark IV Instruction Manual, EOS 5D Mark IV Wi-Fi Function Instruction Manual*, and the software instruction manuals can be obtained from the Canon websites:

USA:

https://www.usa.canon.com/internet/portal/us/home/support/details/cameras/dslr/eos-5d-mark-iv/

Europe:

http://www.canon-europe.com/support/consumer_products/products/cameras/digital_slr/eos-5d-mark-iv.aspx?type=manuals&language=EN

If you have an iPad or tablet you will find that it is helpful to download all the manuals onto your device for reading and reference (along with this e-book). As you can see, there is a lot to make sense of regarding terminology and controls, so I recommend that you familiarize yourself with the controls and displays of the camera body, as shown on pages 28-35 of the *Canon EOS 5D Mark IV Instruction Manual* and explained in the following chapter of this book, as well as read through the Canon manual at some point and attempt to understand or absorb as much as possible. Yes, some of it may be complicated and confusing at first, but this guide will explain and clarify the numerous buttons, controls, menus, functions, and settings and explain how, when and why you will want to use them in your photography. Also be sure to read and follow all the official use, safety, and handling instructions and precautions explained in the manuals provided with the camera and software, including those on pages 22-27 of the *5D Mark IV Instruction Manual*. Additional cautions throughout the Canon manual are important to read because they explain things such as the high internal temperature that the camera can reach due to prolonged Live View or movie use, and how using a non-compatible external flash can cause your camera to malfunction. Live View cautions are found on pages 300, 302, and 331-331 of the Canon manual, and movie shooting cautions are found in pages 346-347 as well as throughout the *Shooting Movies* chapter of the *Canon 5D Mark IV Instruction Manual*.

Various settings of the 5D Mark IV can be controlled in multiple ways: using the buttons and dials on the camera body while reading the settings on the top LCD Panel or in the Viewfinder, through the Quick Control Screen accessed with the [Q] Button and read on the rear LCD Monitor, in the menus accessed with the Menu Button, or even by customizing the buttons and controls on the camera body via the Custom Functions. And with the 5D Mark IV you can now create your own Custom Quick Control Screen and add the shooting settings you access most often. Plus you can use the touch screen in conjunction with the menu screens and Quick Control Screens to change the settings. Explore the options, which will be explained throughout this guide, and find the ways that work most quickly and intuitively for you.

3. MENU SETTINGS

3.1 Introduction to Setting Up the 5D Mark IV

The Menus and Custom Settings of the 5D Mark IV allow you to have greater, more precise control over how your camera functions. They are an important part of what makes this camera a much more powerful and exacting tool than mid-level dSLR cameras, and they allow you to customize your camera to work for you, to work how *you* work. Using them you can also fine-tune settings and operations including white balance, metering, exposure, and autofocusing. I highly recommend that you carefully go through these menus and change the settings to the options that allow you to use the camera in the manner that works best for you and your shooting needs, and to change them accordingly for different types of shooting situations.
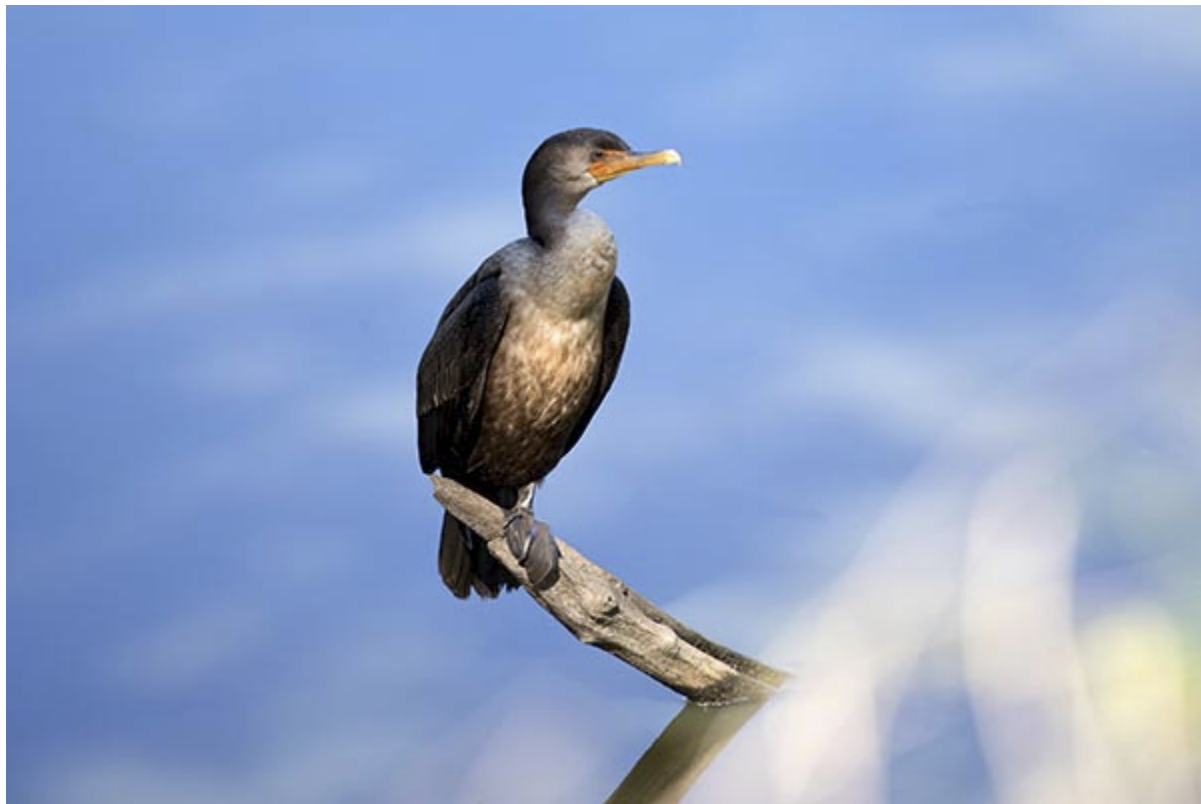
Figure 40 - Cormorant, Woburn, Mass. - Canon 5D Mark IV, Shutter speed 1/500, Aperture f/4.0, ISO 160.

Some of the Menu items are only used when shooting, reviewing, or processing images, but several of them should be set up in advance. Below are explanations and recommended typical settings for the Menu Settings and the Custom Settings of the Canon 5D Mark IV. I realize that reading these sections at the beginning of this book presents a conflicting situation in that these menu items need to be explained first so that you can initially set up your camera, but you may not yet have the knowledge to fully understand all these menu items until you read through the rest of this guide! So

don't get overwhelmed if you don't yet understand the settings or terminology used to describe the Menus and Custom Settings and their options. You will likely wish to return to them later after you have begun to better understand your camera and its controls and start to determine how you want to work.

And I understand that it is not as compelling to read through these lists of menu items and camera control settings as it is to read the more-flowing instructional text later in the book. But you will begin to learn much about the 5D Mark IV as you patiently work through the Menus and the Custom Settings chapters. As I mentioned earlier, this section will often refer to upcoming chapters and sections, but it is not necessary for you to jump ahead. This is merely a "heads-up" that the menu item or function that you are currently setting up will be explained in detail later in the guide, in the applicable section of the text (such as **Autofocusing** or **Metering Modes**, etc.).

Also, if you don't yet understand some of the settings or why you might wish to change them, leave those on the default or recommended settings for now. If you have worked with a recent Canon 7D or 5D model, or even a 70D/80D before using the 5D Mark IV, you will find that many of these Menus and Custom Settings options are similar, and you may wish to continue to use most of the same settings that you have determined work best for you. However there are some new additions with the 5D Mark IV.
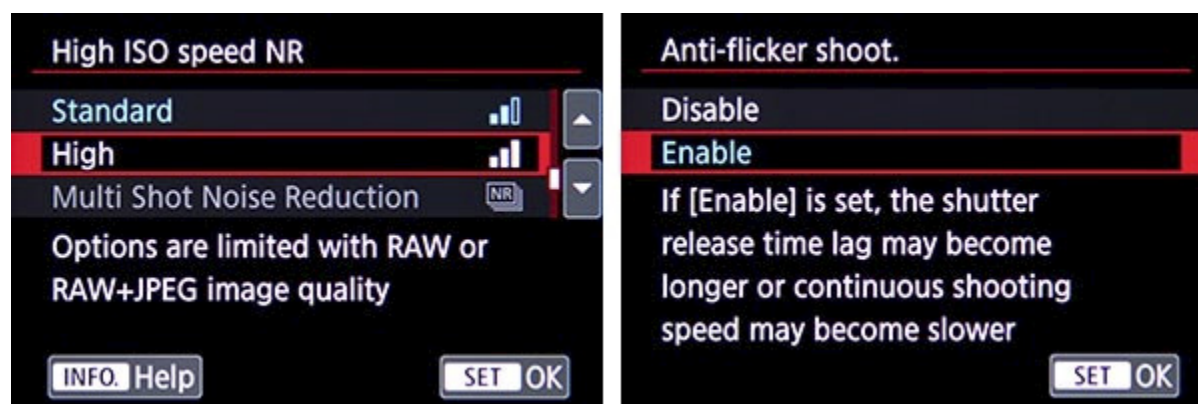
Figure 41 - Left: In some instances, the camera will warn you of a potential conflict, such as the conflict between Multi Shot Noise Reduction and RAW image files, and thus that option is currently greyed-out. Right: The camera will sometimes provide other types of tips and warnings related to a specific setting, such as Anti-Flicker Shooting mode.

Important Note About Menu Conflicts: As with most current dSLR cameras, the 5D Mark IV has a few menu settings "quirks" or conflicts that may drive you crazy if you are not aware why they are occurring. Most notably, some settings will be inaccessible in the menus and you will not be able to select them if a "conflicting" setting is enabled. These are actually not arbitrary quirks, but are typically due to logical conflicts or camera limitations. The 5D Mark IV has helpfully added explanations of some of the conflicts when certain menu items are accessed, as well as other types of tips and warnings (see *Figure 41*). Examples include certain functions like Multi Shot Noise

Reduction, which is not accessible when the camera is set to capture files in the RAW or RAW+JPEG image format. You must then set the Image Quality to one of the JPEG-only settings in order to access that setting. The use of Auto Exposure Bracketing, White Balance Bracketing, or Long Exposure Noise Reduction will also conflict with other settings including Multi Shot Noise Reduction. Similarly, the use of Auto Exposure Bracketing, White Balance Bracketing, Multi Shot Noise Reduction, or Multiple Exposure will conflict with using the built-in HDR function. And Multiple Exposure cannot be set if White Balance Bracketing, Multi Shot Noise Reduction, or HDR is set.

While it is obviously not realistic for you to remember all of these conflicts, you can begin to see a pattern in the examples above. If you do encounter an inaccessible menu item, remember to check your Image Quality setting (RAW vs. JPEG), and then make sure the above mentioned functions are disabled, such as Bracketing, HDR, or Multi Shot Noise Reduction, as many of the same ones simply conflict with each other. And I will mention these conflicts in the explanations of the applicable settings throughout this guide.

Important!: Place your Mode Dial on Av, Tv, or M (and the Live View/ Movie Shooting Switch to *Live View*) before you go through the menu settings below, because all the options don't appear in the Menus if your camera is set on Auto+.

To navigate the menus, use the [Q] Button to quickly jump between the primary menu tabs (*Shooting, AF, Playback,* etc.), use the top Main Dial to access each individual menu within a tab (*Shooting 1, Shooting 2,* etc.), and use the rear Quick Control Dial to navigate the items listed in each menu. Press the SET Button to access a menu item's options. Or of course you can use the touch screen to navigate the menus.

3.2 Setup Guide Spreadsheet

In conjunction with this book, I have also created a comprehensive *Canon 5D Mark IV Setup Guide* spreadsheet, with recommended settings for the applicable Menus, all of the Custom Functions, plus some shooting and exposure settings. It has complete and separate camera setup recommendations for different types of shooting, including:

General / Travel / Street
Landscape / Architecture
Action / Sports
Moving Wildlife / Birds
Studio / Portraits
Concert / Performance

The *Canon 5D Mark IV Setup Guide* spreadsheet can be downloaded from my website here:

http://www.fullstopbooks.com/setup-guides/

Most all of the suggested settings on the spreadsheet are further explained in this chapter and throughout this guide, so it is best to use the spreadsheet hand-in-hand

with the explanations in this book. And as you read through the Menus and Custom Function settings, perhaps make notes of how you may wish to set them or adjust them for the different types of scenes and situations you photograph. Please keep in mind that the reason the Canon 5D Mark IV offers so many menu items and customization options is that photographers have different needs and work in different ways, and it is best to determine which settings *you* need or prefer rather than simply rely solely on the suggested settings from another photographer.

3.3 Shooting Menus

Shooting 1 Menu
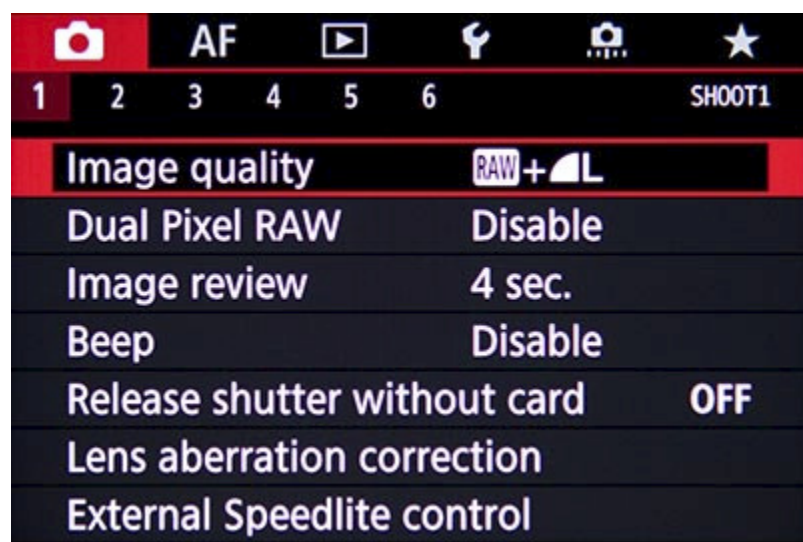
Figure 42 - Shooting 1 Menu.

Image Quality
You are putting a lot of effort into taking your images, and the 5D Mark IV provides an exceptional sensor on which to record them. You should take advantage of this and make sure the files are of the best possible quality. Set to either the *RAW* setting if you "shoot RAW" (capture images in the RAW format), or set for the highest quality JPEG setting *(JPEG Large-Fine)* if you shoot JPEG. Or choose both combined *(RAW + JPEG)* if you need both types of files. Use the lower quality settings only if you have a specific need for small images and files, such as if you only require a small image for online use.

The 5D Mark IV allows you to choose between standard RAW and the options of M-RAW and S-RAW, which are lower resolution files (see *Figure 43 - left*). With their smaller file size, they are intended to allow photographers to save more images on their memory cards and to ease the processing workflow, such as transferring, opening, and working on files. Yet, as a RAW file they contain more data than a JPEG and allow for greater latitude in processing. S-RAW and M-RAW files offer some advantages and disadvantages when compared to standard RAW files and JPEG files. I will explain the differences and the pros-and-cons of each format in the **Image File Formats - JPEG**

and RAW section of Chapter 6. You will likely wish to use the full size *RAW* setting in order to capture higher quality RAW files with your high resolution 5D Mark IV.

Since the camera has two memory card slots which can be set up to record at different Image Quality and file formats, this menu item will be affected by how you set the *Set-up 1 Menu > Record func+card/folder selection* item which configures how the two different memory card slots (CF and SD) are used. If you have setup the *Record func+card/folder selection* to record to one card (*Standard*), or to one card then the other card sequentially (*Auto switch card*), or to both cards simultaneously (*Rec. to multiple*), you will set the JPEG and/ or RAW quality settings one time in this Image Quality menu, for both cards (see *Figure 43 - left*). Turn the top Main Dial to select the RAW format, and the rear Quick Control Dial for JPEG. If you wish to only capture one format, set the other format on the dash (-) icon to disable it.

Figure 43 - Image Quality Settings - Left: Select the RAW format and/ or the highest quality JPEG format. Right: Accessing the Image Quality settings in Live View. Here the camera is set to Auto Switch Card, with the slot 2 SD card as the primary card, and each image captured as both RAW and JPEG Large files. On the Live View screen, press the INFO Button to change the primary card, and press the SET Button to choose the RAW Image Quality.

If you set the *Record func+card/folder selection* item to record different image types and sizes to each memory card separately (*Rec. separately*), you will set JPEG and/ or RAW settings separately in this Image Quality menu - one setting for card 1 and one setting for card 2. This setting can also be accessed via the image quality icons on the Quick Control Screen (see *Figure 44*), or by pressing the [Q] Button during Live View. With Live View, use one of the dials to change the JPEG setting, and press SET to access the RAW settings. Press the INFO Button to choose which card is the primary card (see *Figure 43 - right*). Note that if you are recording RAW+JPEG to the same card, then when you erase an image, both the RAW file and the JPEG file will be deleted.

Figure 44 - Image Quality Settings - If the camera is set to "Rec. Separately" in the Set-up 1 Menu, then you will select the Image Quality separately for card 1 and for card 2. Do this either in the Image Quality Menu, or using the Quick Control Screen as shown here. In this example, Card 1 is set for RAW (left), and Card 2 is being set for JPEG Fine (right).

Dual Pixel RAW

This is a new Canon feature, introduced on the 5D Mark IV. It takes advantage of the Dual Pixel technology of the image sensor to allow three different post-processing options in Canon's Digital Photo Professional (DPP) software: *Image Micro-adjustment, Bokeh Shift,* and *Ghosting Reduction*. When *Dual Pixel RAW* is set for *Enable* in this menu, and you are shooting full size RAW images (not M-RAW or S-RAW), the 5D Mark IV will capture these special types of images. The Dual Pixel technology of the sensor involves each pixel consisting of two photodiodes, and as Canon explains:

"This sensor design means the sensor can receive an A and B signal from the subject and detect any phase differences between the two signals, allowing them to attain focus as part of the Dual Pixel AF system. When capturing the image, the sensor obtains the picture info from the combined A and B image signals. This technology makes both focusing and image shooting possible with the same sensor."

"During Dual Pixel RAW shooting, a single RAW file saves two images into the file. One image consists of the A+B combined image data and the other only the A image data. This means the Dual Pixel RAW files contains both the normal image and also any parallax information, which can be measured and subject distance information extrapolated. As Dual Pixel RAW images contain two images they are therefore double the file size of normal RAW images."

http://www.canon-europe.com/cameras/eos-5d-mark-iv/dual-pixel-raw/
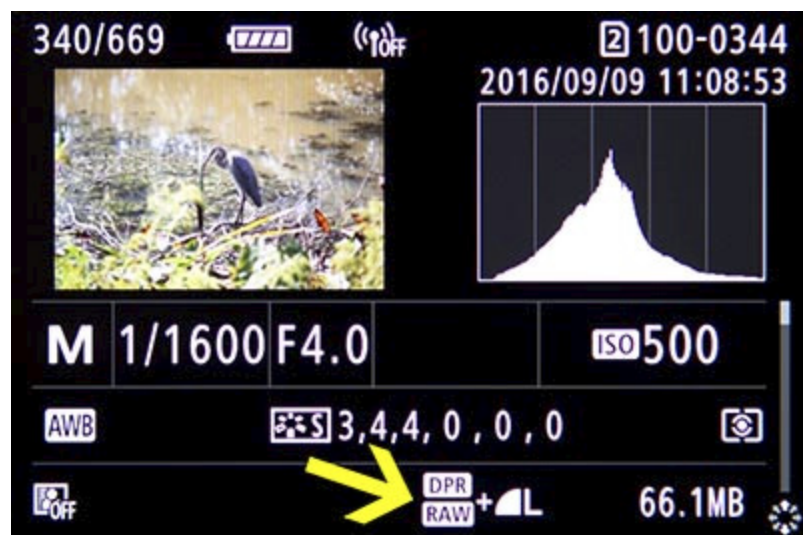
Figure 45 - An image captured with Dual Pixel RAW, as indicated on the Shooting Information Display during playback (as highlighted here with the yellow arrow).

These two images allow for the unique adjustments in the DPP software. *Image Micro-adjustment* allows you to slightly adjust the focus of the image in post-processing, to attempt to attain maximum sharpness at the in-focus area of the scene if focus is slightly off. *Bokeh Shift* enables you to slightly adjust the out-of-focus areas, for example an out-of-focus object partially in front of the subject. *Ghosting Reduction* helps to reduce haze or flaring on an image, caused by internal lens reflections.

For best results when making use of Dual Pixel RAW adjustments, Canon recommends capturing the images at a focal length of 50mm or more, an aperture setting of f/5.6 or wider (f/4, f/2.8, etc.), and an ISO setting of 1600 or lower. They also suggest the following subject distances, based on the lens focal length:

50mm focal length - 1 to 10m (3.3 to 32.8ft)
100mm focal length - 2 to 20m (6.6 to 65.6ft)
200mm focal length - 4 to 40m (13.1 to 131.2ft)

Note that you can only apply one of the Dual Pixel RAW adjustments to an image, and Dual Pixel RAW cannot be used with Multiple Exposure or HDR shooting, or with in-camera Digital Lens Optimizer. Using it will decrease the maximum continuous shooting speed during Viewfinder shooting, and when using it in Live Mode, continuous shooting will not be possible. There is a detailed article explaining Dual Pixel RAW, with instructions for using the Canon DPP *Dual Pixel RAW Optimizer* software to process the files, on the Canon website:

http://learn.usa.canon.com/resources/articles/2016/eos-5d-markiv/eos5d-markiv-dual-pixel-raw.shtml

When working in Canon DPP, access the *Tools* menu and select the *Start Dual Pixel RAW Optimizer* item to open that window. The palette on the right side of the screen will allow you to select among the available processing options (see *Figure 46*).

Figure 46 - The Dual Pixel RAW Optimizer window of Canon's Digital Photo Professional (DPP) software, showing the available adjustments at right.

In practice, many reviewers are finding that these Dual Pixel RAW adjustments are often very minor, and typically not worth the effort and the very large file sizes of the originally captured images. However it is an interesting technology that may be improved on over time and offer more significant adjustments in future camera models.

Image Review Time
This is the length of time that the image you just took stays visible on the rear LCD Monitor. Select *2 sec., 4 sec.,* or *8 sec.,* or *Hold* for the image to remain on the screen until you tap the Shutter Button or turn one of the dials (see *Figure 47 - left*). You may wish to leave it *Off* to save the battery, then hit the Playback Button quickly (and soon instinctively) when you want to review an image on the LCD Monitor. Also, you can interrupt the 2, 4, or 8 second Image Review time by tapping the Shutter Button when you are finished reviewing and ready to return to shooting.

Figure 47 - Left: Image Review time menu options, for setting the duration that an image stays visible on the LCD Monitor immediately after capture. Right: Beep settings, to Enable or Disable these camera sounds.

Beep
The camera will beep when it achieves focus, as well as when using the self timer. *Disable* if you find it annoying or unnecessary (see *Figure 47 - right*).

Release Shutter Without Card
This setting prevents you from taking photos if there is no memory card in the camera, and is typically used by camera stores to demo the camera even without a memory card inserted. Set this for *Disable*. **Please!** You do not want to appear to take 800 images of your niece's wedding and discover there was no memory card in the camera (see *Figure 48 - left*). Test it to make sure you set it properly.
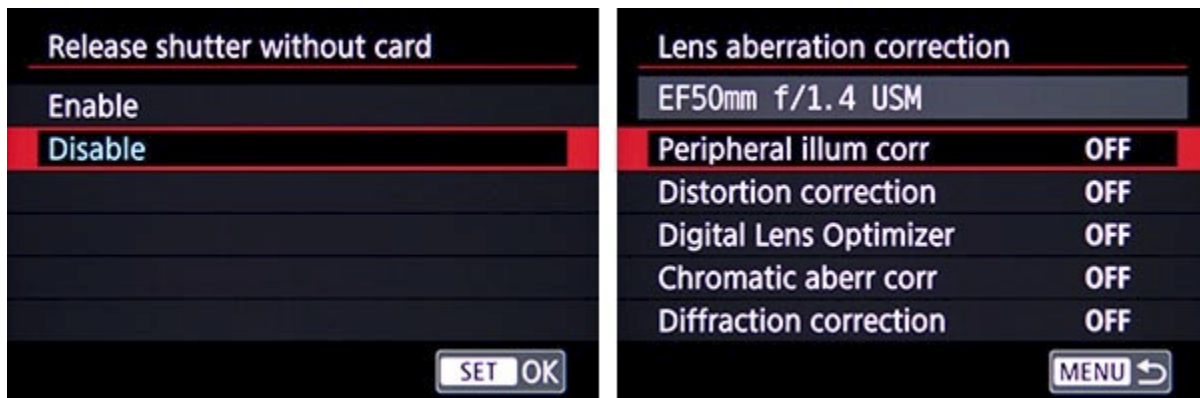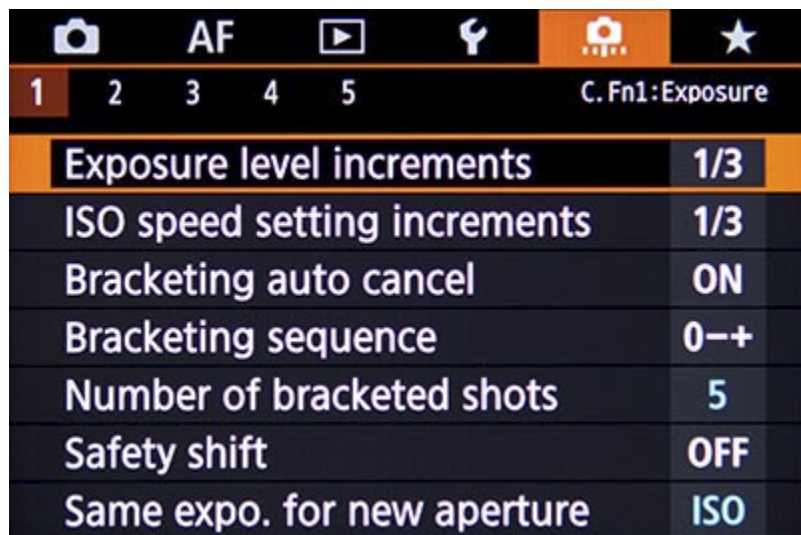
Figure 48 - Left: Be sure to Disable the "Release shutter without card" setting so that the camera will not take images unless a memory card is inserted. Right: The various Lens Aberration Correction options, which can each be enabled or disabled.

Lens Aberration Correction
These menu options can be used to automatically correct images for image quality issues introduced by the optical characteristics of some lenses (see *Figure 48 - right*). The correction information for about 30 Canon lenses is included in the camera, and

4. CUSTOM FUNCTIONS MENU SETTINGS

4.1 C.Fn 1: Exposure

Figure 178 - Custom Functions C.Fn 1: Exposure.

Exposure Level Increments
This is to change the increments of shutter speed, aperture, and exposure compensation available for you to select, either *1/3-stop* increments or *1/2-stop* (see *Figure 179 - left*). This will apply to the Shooting Modes where you select your desired aperture setting and/ or shutter speed, such as Aperture-Priority (Av) Mode, Shutter-Priority (Tv) Mode, or Manual (M) Mode. This setting will also apply to the increments for Auto Exposure Bracketing (AEB) and Flash Exposure Compensation.

For example, to progress one full stop using *1/3-stop* increments, you will be able to select:
Aperture: f/5.6, f/6.3, f/7.1, f/8.0
Shutter speed: 1/125, 1/160, 1/200, 1/250

With *1/2-stop* increments, you can select:
Aperture: f/5.6, f/6.7, f/8.0
Shutter speed: 1/125, 1/180, 1/250

Set this depending on your personal preference and what you are used to using for these increments. Many photographers prefer the greater precision of 1/3 stops, which is generally the traditional and standard setting, but you may prefer the simplicity and ease of 1/2 stops (which may also make "in-your-head" exposure calculations easier). Shutter speed and aperture will be fully explained in the **Exposure Part 1** chapter, and **Exposure Compensation** in its own section of the text.
recommend: 1/3-stop
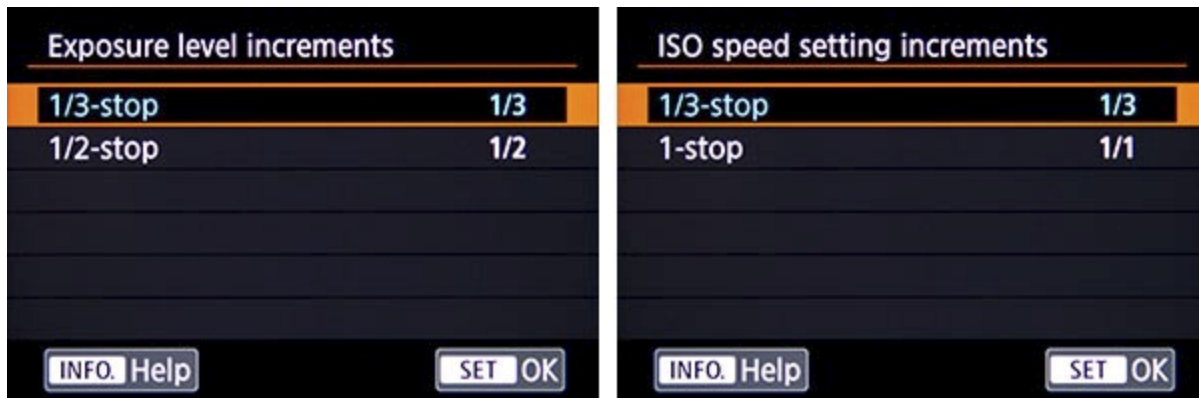
Figure 179 - Exposure Level Increments options (left), and ISO Speed Setting Increments (right).

ISO Speed Setting Increments
This sets the increments for ISO settings, either *1/3-stop* or *1-stop* (see *Figure 179 - right*).

For example, to progress one full stop using *1/3-stop* increments, you will be able to select:
ISO: 100, 125, 160, 200

With *1-stop* (full stop) increments, you can select:
ISO: 100, 200

Again, the setting depends on your personal preference and what you are used to. Many photographers prefer the greater precision of 1/3 stops, which is generally the standard setting, but you may prefer the simplicity and ease of full stops. When using Auto ISO, the camera will select from the full range of 1/3-stop increments, regardless of this setting. ISO will be discussed in the **Exposure Part 1** chapter.
recommend: 1/3-stop

Bracketing Auto Cancel
Auto Exposure Bracketing is when the camera takes a series of images using different exposure settings, in order to ensure that at least one of the images is correct, or to experiment, or for HDR purposes. This menu item sets whether or not Auto Exposure Bracketing (or White Balance Bracketing) is canceled when you turn off your camera (see *Figure 180 - left*). I recommend that you have this cancellation set for *Enable*, because if you have a shooting session where you are auto-bracketing, then use your camera the next day, you will probably have forgotten that it is set on bracketing, and then auto bracketing is going to occur and most of your shots are going to be improperly exposed. **Auto Exposure Bracketing** will be explained in Chapter 12.
recommend: Enable: ON
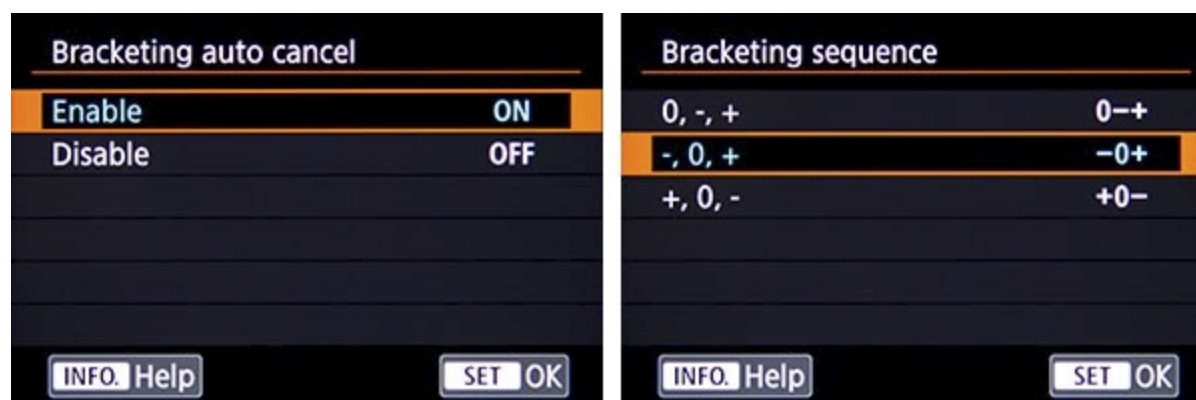
Figure 180 - Left: Bracketing Auto Cancel options to cancel Bracketing when the camera is turned off. Right: Bracketing Sequence options, to determine the order that Auto Exposure Bracketing (AEB) and White Balance Bracketing shots are taken.

Bracketing Sequence
This setting determines the sequence of exposures when using Auto Exposure Bracketing (AEB) or White Balance Bracketing. (The 5D Mark IV can bracket either 2, 3, 5, or 7 shots, not just the traditional 3 shots - this number will be set with the next menu item.) The bracketing sequence setting depends how you like to order your bracketing, and this may be important to you if you do a lot of HDR work. Setting "*0, -, +*" means the "correct" exposure is taken first, then the darker exposure(s) (under-exposed), then the lighter exposure(s) (over-exposed), with "correct" meaning what the camera thinks is the proper exposure (see *Figure 180 - right*). Setting "*-, 0, +*" means the order is darker, normal, lighter. Setting *"+, 0, -"* means the order is over-exposed (lighter), normal, under-exposed (darker). An HDR shooter and their software may prefer setting *"-, 0, +."* This also affects the bracketing sequence for white balance (WB) bracketing so determine what sequence you want if you make use of WB bracketing.

When making use of White Balance Bracketing, the zero (0) in the series indicates the standard white balance. With White Balance Bracketing you can bracket along either the Blue/Amber axis or along the Magenta/Green axis, so the negative (-) will indicate either blue or magenta bias, and the positive (+) will indicate either amber or green bias. White Balance Bracketing will be explained in the **White Balance** section of Chapter 13. *recommend: User preference. The second setting (-, 0, +) is suggested for HDR shooters if it matches their personal or software workflow.*

Number of Bracketed Shots
This is to set the number of shots that are taken in an Auto Exposure Bracketing (AEB) sequence or a White Balance (WB) bracketing sequence. The number you choose is obviously the number of shots that will be taken: 3, 2, 5, or 7 (see *Figure 181 - left*). General bracketing is typically 3 shots, but those shooting for HDR work will want to take advantage of 5 or 7 shots. You will see the set number of shots (tick-marks) as you enable bracketing and specify the exposure increments, on the Auto Exposure Bracketing screen (see *Figure 181 - right*).
recommend: varies by user

Figure 181 - Left: Number of Bracketed Shots options, to determine how many exposures are automatically taken during Auto Bracketing. Right: Bracketing for 3 shots at 1 EV increments, as seen on the AEB Setting screen.

Safety Shift

This Safety Shift option allows the camera to change an exposure setting, without your expressed permission, when it is vital to capturing the proper exposure (see *Figure 182 - left*). This is a good thing in certain situations, such as when shooting at a concert and the lighting and lighting-levels are changing erratically, or when shooting in very dim light without flash, and proper exposure may not be captured based on your current aperture or shutter speed settings. It only functions in Tv, Av, or P Shooting Modes, based on the following options:

Disable - Safety Shift not used.

Shutter Speed/ Aperture option will automatically change the current Shooting Mode's setting in order to obtain the proper exposure, meaning that in Shutter-Priority (Tv) mode it will change the shutter speed setting (which you are selecting when using Tv mode), and in Aperture-Priority (Av) mode it will change the aperture setting (which you choose when working in Av mode). For example, if working in Av mode and in very bright light, you have selected 100 ISO, a wide f/2.8 aperture which provides narrow depth of field but also lets in a lot of light, and the camera has selected the fastest possible shutter speed (1/8000 for the 5D Mark IV). However if there is too much light even at this fast shutter speed and the image is going to be over-exposed, the camera cannot select a faster shutter speed since it has reached its limit, so using Safety Shift the camera is going to over-ride your aperture setting and use a narrower aperture setting. So when using this option, realize that if the camera cannot obtain the proper exposure by changing the exposure setting it would typically change when using the current Shooting Mode, it will change the exposure setting that you set.

ISO Speed option will work in Av, Tv, and P modes. In order to obtain the proper exposure, the camera will change the ISO speed. This may be the more desirable setting, since the low light capability of the 5D Mark IV is very good

even at high ISO settings, and that way you can allow the camera to adjust the ISO while you set and retain the aperture or shutter speed setting you desire. But because you may not want the camera to automatically select an excessively high ISO setting in these situations, you will be able to dictate the minimum and maximum ISO settings that the camera will use.

The minimum and maximum ISO settings available to be selected by the camera during Safety Shift are set in the *Auto Range* setting of the *Shooting 2 Menu > ISO Speed Settings.* The camera will choose an ISO setting in that range unless you have manually selected an ISO setting outside that range, and in that case the camera may exceed the *Auto Range,* up to your currently-selected ISO. Safety Shift may override the ISO *Range for Stills* or *Minimum Shutter Speed* that you also set in this *Shooting 2 Menu > ISO Speed Settings* if it needs to in order to obtain the proper exposure.

Consider enabling Safety Shift in unpredictable or erratically changing lighting situations, *except* when shooting with a flash and you need more precise control of the exposure settings to avoid blur and don't want the camera overriding your settings without you having control or even realizing it, as Safety Shift operates even when a flash is used. Failing to disable it during flash use may drive you crazy as you try to determine why the resulting exposures do not seem to be changing based on your settings changes - because the camera keeps over-riding your settings with Safety Shift. Keep this in mind if you are going to be photographing indoor events or receptions using a flash.
recommend: Set for ISO Speed when needed, and Disable when using flash and controlling your exposure settings and flash output.

Figure 182 - Left: Safety Shift options, to determine which exposure settings the camera will automatically change, if necessary, in order to obtain the correct exposure. Right: Same Exposure for New Aperture setting.

Same Exposure for New Aperture
This is a relatively new Canon setting that was first introduced on the 7D Mark II, and which can help solve an issue that many photographers might not think about. You may own and use some "variable maximum aperture" lenses, such as the *EF 24-105mm f/3.5-5.6 IS STM* lens. This will be further explained in the **Fixed Maximum Aperture**

vs. Variable Maximum Aperture Lenses section, but a variable maximum aperture lens means that the widest available aperture will vary, based on which focus length you are using. At the 24mm focal length, you can make use of a very wide f/3.5 aperture, and at the 105mm focal length you can only use a maximum aperture of f/5.6.

If you are working in Manual (M) shooting mode, and using the 24mm focal length of the 24-105mm lens for example, you perhaps have your exposure settings set at f/3.5, 1/250, and ISO 200 in order to obtain the proper exposure. If you zoom-in with the lens to the 105mm focal length, the f/3.5 aperture setting is no longer available, so the camera will automatically change the aperture setting to f/5.6. Now your exposure settings are set at f/5.6, 1/250, ISO 200, and if you don't realize this and don't change them, the image is going to be under-exposed!

This *Same exposure for new aperture* Custom Function setting will allow you to have the camera automatically adjust either the *ISO speed* or the *Shutter speed* in this type of situation when working in Manual (M) Mode and **not** using Auto ISO, so that the image exposure remains the same (see *Figure 182 - right*). Use this menu to specify if the *ISO speed* or if the *Shutter speed* is changed. Or set for the *ISO speed/Shutter speed* option, which will first change the ISO setting until it reaches the maximum ISO that is set in the *Range for stills* option (in the *ISO Speed Settings* item of the *Shooting 2 Menu*), and then change the shutter speed as required.

Although you should always check your exposure settings before taking a shot, there are many situations where you are concentrating on something else, and thus this option can be very helpful. This automatic exposure change will also apply in other situations where you are using Manual Mode and the aperture setting may change without you realizing it. This includes if you change lenses, for example from a 50mm f/1.4 to a 70-200mm f/4, yet you had the camera set on f/1.4 aperture. That f/1.4 aperture setting is not available with the next lens, so the camera will have changed the camera's aperture setting to f/4. Or it applies if you add or remove a lens Extender, which affects the available maximum aperture. The new shutter speed or ISO speed that the camera selects will be in the *Set shutter speed range* (next), or in the ISO *Range for Stills*. Note that this function is not applicable for movie shooting, and does not work with certain macro lenses.
recommend: Set for "ISO Speed" or for "ISO speed/Shutter speed" so that the camera will first adjust the ISO speed to obtain the same exposure as previously set, when working in those situations just described.

7. AUTOFOCUSING Part 1

7.1 Using Autofocus

One of the essential steps in taking a successful and sharp photo is controlling where the camera autofocuses. During Viewfinder shooting, if you allow the camera to autofocus by automatically choosing the focus point(s) (such as in Auto+ Shooting Mode or with Automatic AF Point Selection) it typically focuses on the closest object. (Or the 5D Mark IV will focus on a face, if you have enabled *EOS iTR AF* in the *AF4 Menu*.) This may or may not be what you want to focus on, so you should almost always select where the camera focuses by selecting the desired autofocus AF Point. Or if the situation or subject does not allow you to quickly or easily focus by selecting a specific point, you can instead decide to select a larger group of points or a Zone.

Figure 238 - 1966 Ford Mustang, New Bedford, Mass. - Combine precise autofocusing with shallow depth of field to call attention to the desired subject - here, the grille detail of the first Mustang, shown in the context of a row of similar Mustangs which are rendered out-of-focus due to the shallow depth of field. Shutter speed 1/1250, Aperture f/4.0, ISO 200.

By selecting an AF Point (or Zone), you are telling the camera exactly where to autofocus (in *One-Shot AF* mode) or where to look to find a moving subject to start tracking (when working in *AI Servo AF* mode). For example, you often want to focus on a subject's nearest eye, but if you allow the camera to choose the autofocus point itself,

it may select another part of the face, or somewhere else on the body, or even a raised arm that is nearer to the camera than the face, to focus most sharply on. If you are capturing an image of a bird in a tree, the camera has no idea you want the autofocus system to zero in on the bird so that it is in sharp focus, and not the branches or leaves near it, or perhaps even some leaves closer to you and nowhere near the intended subject.

The autofocus system of a dSLR plays a large role in allowing you to capture exactly the shot you intend. In the non-Auto Shooting Modes (P, Av, Tv, M, and Bulb-B) you can, and should, take control of the autofocus system. The Viewfinder autofocus system is comprised of the autofocus related controls, the autofocus AF Modes (also called the AF Operation), the autofocus AF Area Selection Modes, the autofocus AF Points, and the autofocus related menu and Custom Function items described at the beginning of this text which customize how the AF system works. (Live View autofocusing is slightly different, and will be covered later in this chapter.) You will select an AF Mode typically based on if the subject is still (or perhaps only moving slightly or relatively slowly), or if you wish to continuously track and retain focus on a moving subject. And you will choose an AF Area Selection Mode based on how large of an area you want the camera to look at to find or track your intended subject - in other words how many AF Points will be active when attempting to focus on the subject. This can range from a single AF Point, to a wider Zone, to all the AF Points available in the Viewfinder. You can set the AF Modes and AF Area Selection Modes in a variety of combinations based on what and how you are shooting. Be sure to read the **Autofocus (AF) Menus** section of the **Menu Settings** chapter first to make sure your camera is properly set up to always display your active AF Point(s), and various other recommended AF settings.

Viewfinder autofocus typically works by looking for contrast, so you should try to focus (locate the active AF Point seen in the Viewfinder, as in *Figure 239*) on a texture or a detail with a pronounced line or some amount of contrast between light and dark. The camera may not be able to focus on a large area of consistent color - such as an all-white wall or clear blue sky - or on a subject that is too dark. It can be disrupted by regular patterns or confused when looking through close objects to objects farther away, such as looking through a fence, and it sometimes might fail to work well in dim light. Also, the *AF-Assist Beam Firing* of an optional Speedlite (*AF3 Menu*) can assist in low light situations.

Of the 61 AF Points, 41 are more accurate cross-type points. A cross-type AF Point detects contrast in both the horizontal and vertical directions, as opposed to AF Points which are only sensitive to contrast in one of these directions. The five points located in the central vertical row of AF Points perform as dual-cross-type points, with additional sensitivity when using most Canon lenses with an f/2.8 or wider maximum aperture. The number of available AF Points and their sensitivity will vary based on which lens is being used, and so with certain Canon lenses, many of the outer AF Points will not act as cross-type points. See pages 115-125 of the Canon manual for a list of lenses and diagrams of available AF Points. When focusing through the Viewfinder, you can press the AF Point Selection Button, or wait a few seconds after selecting a point, and you will

see the non-cross-type points blinking, to indicate that those will be the less accurate points.

I will use the term *"recompose"* a few times throughout the text. By this I mean moving the camera after you have locked the focus or exposure such as with a half-press of the Shutter Button, but before you fully press the Shutter Button and take the picture. This means that what you see in the Viewfinder changes from when you lock focus and/ or exposure to when you take the picture; you have *re-composed* the view you see in the Viewfinder (see *Figures 239* and *240*). This will be further explained and illustrated with larger versions of these images, in the **AF Points and Composition** section of this chapter.

Figure 239 - Recomposition Image 1 - Simulated view of Canon 5D Mark IV Viewfinder.

Figure 240 - Recomposition Image 2 - Simulated view of Canon 5D Mark IV Viewfinder - In this example, the top image (Figure 239) shows the desired final framing, however I

wish to focus on the "LaSalle" name on the bumper, but it is not located at any of the AF Points. The bottom image (Figure 240) shows what is seen in the Viewfinder as the camera is moved and the framing is temporarily recomposed so that the "LaSalle" detail is located at an AF Point, and focus can be locked. I then return to the top framing to take the image. Background images shown at 70% to better see Viewfinder elements. Images will be shown larger, and explained further, later in this chapter.

7.2 Autofocus - AF Point Selection

As I go over the Autofocus Modes in the next section, I will talk about manually selecting your desired AF Point. This is done to tell the camera exactly which AF Point to use for autofocusing, and is generally recommended so that you have full control over where the camera focuses. Alternately, you can make use of Automatic Selection of the AF Point where the camera decides which of the 61 AF Points to use, but then you will have little control over where the camera focuses. However, automatic AF Point selection is required in certain subject-tracking situations, as will be explained.

Drive Mode / Autofocus Operation Selection Button

Multi Function (M-Fn) Button

Shutter Button

Main Dial

LCD Panel

AF Point Selection Button

AE Lock [*] Button

AF-ON / AF Start Button

Multi-Controller

AF Area Selection Button

Quick Control Dial

SET Button
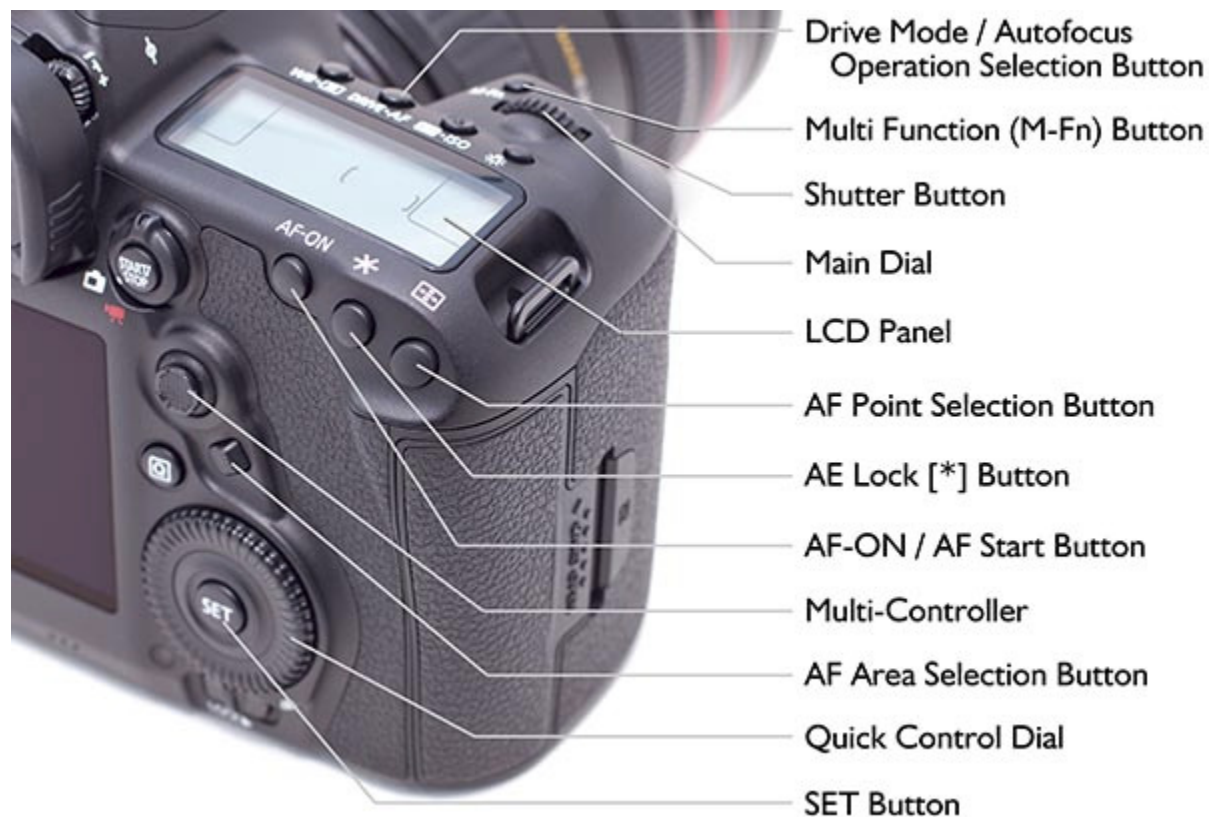
Figure 241 - Autofocus-related controls of the Canon EOS 5D Mark IV.

To choose between manual and automatic AF Point selection, press the rear AF Point Selection Button, then press the top M-Fn Button a couple times, as you look in the Viewfinder. Or you can press the AF Point Selection Button then press the AF Area Selection Button repeatedly (the new button below the Multi-Selector). When the autofocus brackets, which surround the location of all the AF Points, are visible in the

Viewfinder, you are using 61-Point Automatic Selection AF (see *Figure 242 - left*). This is also the mode used by the camera in the *Auto+* Shooting Mode. When any of the other focus point configurations are seen in the Viewfinder as you press the M-Fn Button or the AF Area Selection Button, you are using one of the manual AF Point selection modes, such as Single-Point AF or Zone AF. For example with Single-Point AF, you will see a single large AF Point square in the Viewfinder, as you click through the various AF Area configurations (see *Figure 242 - right*).
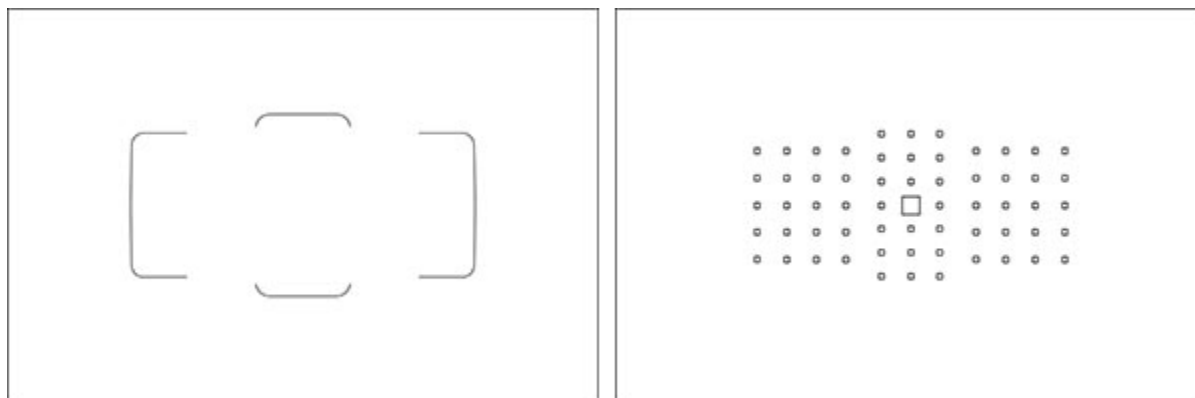
Figure 242 - Left: 61-Point Automatic Selection AF area mode, as indicated in the Viewfinder when using One-Shot AF Mode. Right: Single-Point AF Manual Selection, as indicated in the Viewfinder by the configuration of AF Points.

When making use of manual AF Area Modes such as Single-Point AF, AF Point Expansion, or Zone AF, with the default camera settings, you first press the rear AF Point Selection Button (at the upper-right of the rear of the camera) and then use the Multi-Controller to select your desired AF Point(s) or Zone. If you set the *C.Fn 3 > Custom Controls* menu item to have the Multi-Controller perform *Direct AF Point Selection,* you can instead use the Multi-Controller directly to select the AF Point without pressing the AF Point Selection Button first. To quickly choose the center AF Point, you can press the Multi-Controller straight in.

To see how manual autofocus point selection works, turn the Mode Dial to Av, and make sure the switch on your lens is set to *AF*. Set your Autofocus Mode to *One-Shot* by pressing the Drive/AF Button on the top of the camera then turning the top Main Dial as you view the setting on the top LCD Panel. Next press the upper-right-rear AF Point Selection Button, then repeatedly press the top M-Fn Button (near the Shutter Button) or press the AF Area Selection Button (near the Multi-Controller) until you see a single large AF Point among the smaller AF Points in the Viewfinder, as shown in *Figure 242 - right*. If you first press the INFO Button to display the Shooting Function Settings screen, you can then change these settings on the rear LCD Monitor by pressing the top Drive/AF Button for the AF Mode (see *Figure 243 - left*) and pressing the rear AF Point Selection Button for the AF Area Mode (see *Figure 243 - right*). The screen will then indicate which dial or control to use to change the setting, such as the AF Area Selection Button or the M-Fn Button, as shown in *Figure 243 - right*.
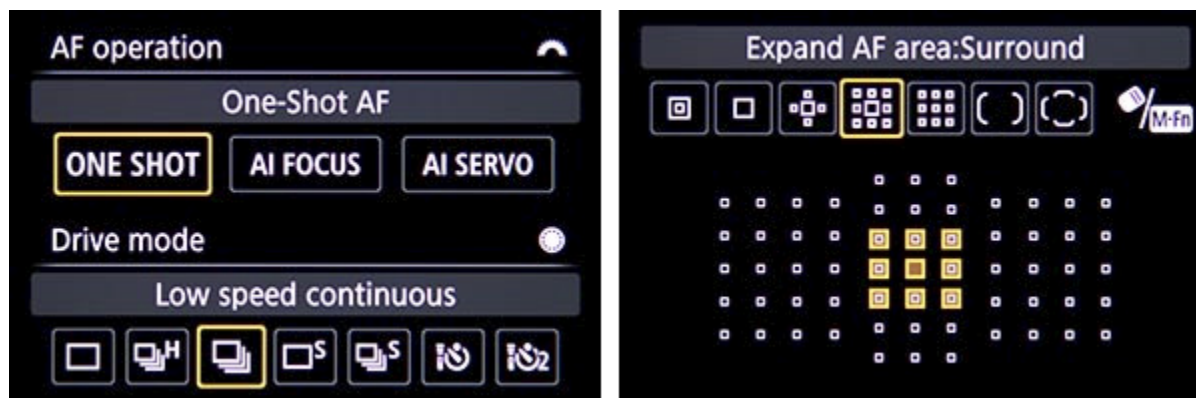
Figure 243 - If you first press the INFO Button to display the Shooting Function Settings screen, you can then select the AF Mode by first pressing the top Drive/AF Button (left), and select the AF Area Mode by first pressing the AF Point Selection Button (right).

- Tap the Shutter Button with a half-press to wake up the camera.

- To select your own desired AF Point, while looking through the Viewfinder use your thumb on the Multi-Controller to select the focus point that is nearest to where you want to focus. Move the Multi-Controller up, down, side-to-side, or diagonal. (If you don't have the Multi-Controller set for Direct AF Point Selection, first press the upper-right-rear AF Point Selection Button, then use the Multi-Controller to select an AF Point.)

- Place that point over your intended subject. If you press the AF Point Selection Button, or wait for a few seconds, you will see some of the AF Points blinking. The AF Points that remain constant and do not blink indicate the more sensitive cross-type points.

- Press and hold the Shutter Button halfway down and see your selected point blink (if this has been enabled in the *AF5 Menu* setting for *VF Display Illumination*). The Focus Confirmation Light should light up in the Viewfinder, and the camera will beep if you have that enabled. You have locked the focus.

- Keeping the Shutter Button pressed halfway, recompose if necessary, and take the shot by fully pressing the Shutter Button. Make sure that your finger does not slip from the Shutter Button half-press, or else you will need to refocus on the subject again.

If the Focus Confirmation Light does not light up and the camera does not take the photo, the camera may not be finding enough contrast to focus on, you may be too close to your subject for the lens to focus, or the lighting may be too dim for the AF system to work properly. Try using the center AF Point, which performs slightly better in low light. Or the camera may be set in *AI Servo* AF mode (rather than *One-Shot*), and does not lock focus in this manner because it is tracking a moving subject. Note that the area that the camera evaluates for focus is slightly larger than the actual active AF Point squares you see in the Viewfinder. In rare situations when autofocusing fails, you can

also resort to manual focusing by switching your lens to MF and using the lens focusing ring. Or you can autofocus on an object at the same distance from the camera as the subject, and then recompose the image back to the subject. This technique can also be used in other situations such as a sporting event, where you pre-focus at a specific spot or distance and wait for the subject to get to that point - so that the camera is already in proper focus and the moment and subject can be captured.

Figure 244 - Cambridge Carnival - Cambridge, Mass. - Simulated view of 5D Mark IV Viewfinder, using a manually selected AF Point to focus on the subject's eye (selected Focus Point shown here in red over the subject's eye). Shutter speed 1/1000, Aperture f/4.0, ISO 400. Background image shown at 70% to better see Viewfinder elements.

There are important reasons to use the outer focus points, and not just the center one all the time as some photographers may be in the habit of doing. One reason for this is that if you lock focus with the center point and recompose, you moved the camera in a slight arc and the focus plane will thus be located slightly behind your subject. This could be more noticeable when working close to the subject and/ or when using wide aperture settings (f/1.4, f/2.8). The potential consequences of recomposing will also be discussed later in the text in relation to exposure and metering. It may sound challenging to select the focus point each time, but it is actually very feasible and will likely become instinctive. You may even find that you start to set your focus point with your thumb on the Multi-Controller as you approach a scene, before even bringing your camera to your eye. For example you know the subject will be on the right side of the

frame, so you tap the Multi-Controller to the right several times so that the active AF Point is already on the right as you bring the camera to your eye.

7.3 Autofocus - AF Modes

The 5D Mark IV has three different focus modes (AF Modes or AF Operations) to choose from for Viewfinder shooting, typically depending if your subject is still or slightly moving, or if it is actively moving and you wish to track its movement and remain continuously focused on it. Select the AF Mode by pressing the Drive/AF Button on the top of the camera and turning the top Main Dial while reading the setting on the top LCD Panel. You can also use the Quick Control Screen to change this setting. First press the [Q] Button to view the screen, navigate to the AF Mode icon (see *Figure 245 - left*), and turn one of the dials to directly change the setting. You can also press the SET Button or tap the icon on the touch screen to view all the options and make your selection (see *Figure 245 - right*).

Figure 245 - Selecting the Autofocus Mode via the Quick Control Screen. Make your selection directly on the screen using the dials (left), or press SET or use the touch screen icon to view all the options (right).

One-Shot AF Focus Mode

Use *One-Shot* AF Mode when your subject is still and not going to move, or if your subject is not going to move very much or very quickly, or if the distance between you and the subject is not going to change between the time you lock focus, recompose, and take the shot. This mode can even be used for moving people or objects if you quickly take the shot after establishing or locking focus.

You will often wish to use this in conjunction with one of the manual selection AF Area Selection Modes (to be explained in the next section), such as *Single-Point AF, AF Point Expansion,* or *Zone AF,* so that you can tell the camera exactly where to focus. For now, set the AF Area Selection Mode on *Single-Point AF*. Do this by pressing the rear AF Point Selection Button then repeatedly pressing the top M-Fn Button or the rear AF Area Selection Button, as you look through the Viewfinder. You will see all of the small AF Points and a single larger AF Point, to indicate *Single-Point AF*.

What Readers are Saying About Doug's previous dSLR Camera Guides:

A Pro Right There With You - If you want to get the camera up and running with the feeling of a pro right there with you then I would strongly recommend it. Camera in one hand and reader in the other and dig in. Thanks Doug, just what I was looking for.
-Tim S.

A Must-Have Accessory - What a great addition to my bag. This is a well written, full body of work that explains, in plain English, how to get the most out my new camera. Doug provides the knowledge and experience to bring you to the next level. I look forward to learning more every time I open the book.
-Steven

Simplifies without technical jargon! - Douglas Klostermann has the unique ability to explain in very readable, easy-to-follow directions how to operate every facet of the Canon 5D Mark III. This is definitely worth purchasing as a companion to the camera and the camera's manual.
-Alan

Best reference book for Canon 5D Mk III - Well written and easy to understand. This book really helps one to be able to take advantage of all the features of the Canon 5D Mk III. A must have.
-N.D.

Excellent ebook - This book is first-class, and this author knows his stuff about Canon cameras. He cuts to the chase, and gets right to the heart of the important matters. I learned a lot and I learned it very quickly indeed. Highly recommended.
-S. Walker

Very clear and precise - It explains all the features of the 5D Mk3 and does this in a very clear and precise way giving a detailed run through of the camera functions and controls as well as the operation and options of the menu system - and it does this without assuming you are an expert photographer to begin with. This is an excellent book to help with getting to grips with the Canon EOS 5D Mark III, whether as a newcomer to the EOS world or upgrading from a previous version.
-Camea

Will Save You A Month On The Learning Curve - This book clearly and practically walks the reader through every step of setting up and using the 5D3. A wonderfully well-organized book, it explains every feature and setting on the camera with recommendations on optimal setup choices and the reasoning behind each recommendation. This is the lowest cost, highest value accessory I could have purchased.
-Robert

Superb Guide to the 5D Mark III - An excellent guide, clear and concise. A great tool for budding photographer as well as the seasoned pro. A sure way to get the most out of your camera.
-Mark S.

Purchase *Canon 5D Mark IV Experience* at:
http://www.fullstopbooks.com/canon-5d-mark-iv-experience/

About the Author

Douglas Klostermann is a travel, culture, and humanitarian photographer as well as the author and publisher of the bestselling *Full Stop* e-book camera guides including *Canon 5D Mark III Experience* and *Canon 7D Mark II Experience.* He has photographed for numerous organizations in the United States and Latin America, been recognized by the *United Nations Development Programme* for his humanitarian photography, and been published in magazines, books, and websites including *Conde Nast Traveler, Sherman's Travel, NationalGeographic.org, South American Explorer,* and *Viva Travel Guides*. Doug is a member of the North American Nature Photography Association (NANPA).

Learn more about photography techniques and equipment on his blog *Picturing Change* at http://blog.dojoklo.com/, view his photography and e-books at www.dojoklo.com, and follow him on Twitter at @dojoklo.