Canon 7D Experience

The Still Photographer's Guide to Operation and Image Creation with the Canon EOS 7D

an eBook by:

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Updated for Firmware v. 2

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Full Stop. *good writing for better photography*

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PREFACE

…to the revised text, incorporating the Canon EOS 7D version 2 firmware update:

Soon after the release of the long awaited 5D Mark III professional full-frame dSLR, Canon updated the firmware of the EOS 7D to expand its functions and to add several new menu items that had been introduced on the 5D Mk III. In doing so, Canon has increased the versatility and boosted the capabilities of the popular and powerful 7D. These improvements now give you more control over Auto ISO settings and over audio recording during Movie shooting, quick access to new and existing editing features during playback, and in-camera RAW processing capabilities (see *Figure P-1*). The 7D is also now compatible with the optional *Canon GP-E2 GPS Receiver*. Perhaps most dramatically, the maximum continuous burst capability has been increased so that the 7D is now able to shoot more continuous frames before pausing: up to 25 RAW or 130 JPEG images when using a *128GB UDMA card*, or 23 RAW and 110 JPEG images when using a standard (8GB minimum) CompactFlash card. When saving both RAW+JPEG image files, the camera has improved from 6 consecutive shots to 17.
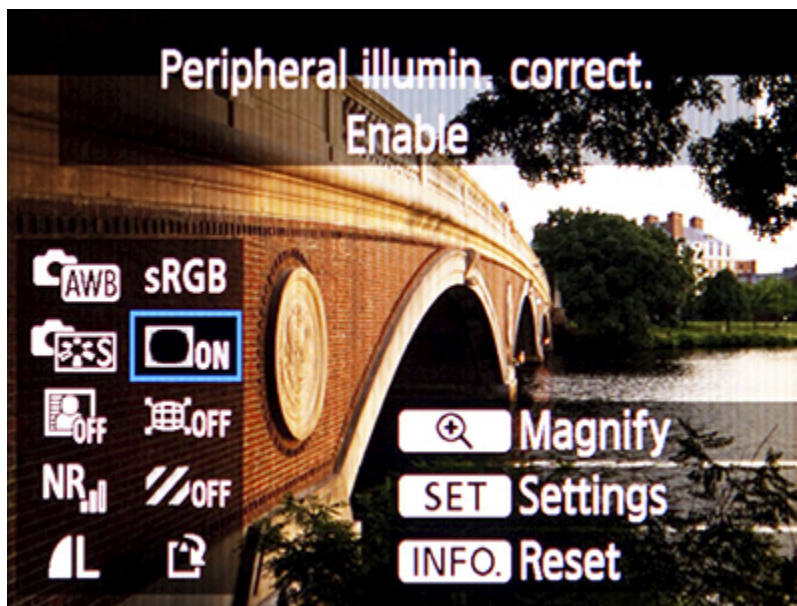
Figure P-1 - In-camera Raw Image Processing feature now available on the EOS 7D.

I have incorporated the EOS 7D version 2 firmware updates into this text, as well as expanded several of the original descriptions and explanations throughout the guide. The functions added by the new firmware are listed below, and many of these changes can be found in the **Menus and Custom Functions** chapter of the text:

- Option to set the time zone and daylight saving time along with the date.
- Increased maximum burst during continuous shooting.
- Ability to set the desired maximum ISO Auto setting.
- Registering or changing the file name prefix of JPEG and RAW files.
- Manual adjustment of audio recording levels for Movie shooting (64 levels).

- Option to rate images (1 to 5 stars).
- Added option to Jump through images by Rating.
- Quicker scrolling of magnified image view during playback.
- Quick Control screen during playback to easily access various image options.
- RAW image processing in-camera.
- Ability to resize JPEG images in-camera.
- GPS settings menu and added compatibility with optional Canon GPS device.

Please note that when referring to the page numbers in the *Canon EOS 7D Instruction Manual*, I will retain the original page numbers plus add the new page numbers from the revised 7D manual, to be shown in parentheses. The revised Canon manual can be obtained as a PDF file on Canon's website at:

http://www.usa.canon.com/cusa/consumer/products/cameras/slr_cameras/eos_7d#BrochuresAndManuals

Be sure to download the *"im5"* version from 6/28/12, or later.

Figure P-2 - Set-up 3 Menu of the Canon EOS 7D, which is accessed during the firmware update process.

To update your camera's firmware, visit the 7D product page on the Canon website and click on the *Drivers and Software* section. Chose your operating system, then find the new firmware in the *Firmware* section:

http://www.usa.canon.com/cusa/consumer/products/cameras/slr_cameras/eos_7d/#DriversAndSoftware

Download the firmware update and follow Canon's instructions. The procedure involves extracting the file you just downloaded and copying the firmware file into the root

directory of a formatted CF memory card. Ensure your camera has a full battery, place the Mode Dial on P, insert the memory card, turn on the camera, and access the *Firmware Ver.* menu item in the *Set-up 3 menu* (see *Figure P-2*). Instructions for the process will continue on the camera's rear LCD Monitor. Be sure you allow the process to complete without interrupting or turning off the camera. ***Please see the Canon website and the instruction document included in the firmware update file for complete instructions and cautions.*** Firmware can also be updated via EOS Utility, and these instructions are also included with the firmware file from Canon.

You will also need to update your EOS Utility, Image Browser EX, and Digital Photo Professional (DPP) software, which can be found at the above link in the *Drivers and Software* section under *Software*. The latest version of DPP now incorporates Digital Lens Optimizer (DLO), which is designed to compensate for various optical aberrations introduced by lenses and loss of resolution caused by the camera's low pass filter.

1. INTRODUCTION

With the introduction of the EOS 7D, Canon began to offer an entirely new class of digital SLR camera - one that sits firmly between the 50D / 60D advanced consumer models and the full frame, professional 5D Mark II / Mark III models. Boasting an advanced and highly customizable autofocus system and blazingly fast 8 frames per second continuous shooting speed, the 7D is designed to excel at capturing motion, sports, wildlife, and many other types of action scenes. With its 18 megapixel sensor, 63-zone dual-layer exposure metering system, high ISO performance, and dual Digic 4 image processors, the 7D is ideal for most every other type of photography as well. And offering additional features including a high resolution rear LCD Monitor, remote flash triggering, magnesium alloy body, and numerous customization options, it is one of the most capable consumer dSLR cameras currently available. The Canon 7D is a powerful, advanced tool for digital photography and has the ability to meet most any dedicated photographer's needs. It is fully capable of capturing professional quality images in most any situation you wish to use it. But it is merely a tool.

Figure 1 - Detail of the Canon 7D.

It is up to you to make use of its features and capabilities to create the images you envision. While the camera's manual can tell you about the settings and controls and how they function, this guide will build upon that and tell you when and why you want to use them. Every button, menu item, and Custom Function setting of the 7D 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 need to learn and

use them all immediately, but this guide should help to give you the knowledge to confidently use the ones that turn your Canon 7D into an image capturing tool that works best for you.

1.1 Take Control of Your Camera

Since the camera is a tool to take the images *you* want to take, you 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 where you want, setting the aperture or shutter speed that you want, and obtaining the exposure you want. While the 7D is an intelligent camera, it cannot read your mind and your intentions and does not know that you wish to focus on and properly expose the small blossoms in the foreground, while making the background appear out of focus, and the branches to be caught still and not be blurred from the motion of the wind, on this bright, sunny day (see *Figure 2*). You have to tell the camera to do all of this, through the various controls and settings, such as the autofocus AF Mode and AF Area Selection Mode (focus on the blossoms), the Exposure Metering Mode (properly expose the blossoms), the Aperture setting (the out-of-focus background), the Shutter Speed (freezing the motion of the branches), the ISO setting (bright day) and the White Balance (sunny day).

Figure 2 - Japanese Garden, Brooklyn, NY - Autofocus modes, exposure metering mode, aperture, shutter speed, ISO, and white balance all considered in creating this image. Shutter speed 1/125, aperture f/6.3, ISO 200.

Playback 2 menu

Figure 19 - Playback 2 menu.

Highlight Alert
Enable. Please! This is how you can immediately see that you've overexposed (blown-out) your highlights as you review your images on the LCD Monitor. The highlights that are overexposed will blink on the LCD Monitor when you view the image. This is sometimes called "the blinkies" and you generally want to avoid them (through proper exposure). This will be discussed in more detail in the **Exposure** and **Histograms** sections.

AF Point Display
User preference. This shows you which focus point was used when capturing an image, and is visible when you review your image on the camera's LCD Monitor. It is the tiny red square or squares superimposed on your image when you view it on the rear screen (it will not be on the actual image). It is most helpful for when you let the camera select the autofocus point, such as in action situations, and then you can see if it focused where you wished. But you will learn to select your own AF Point in many situations, so you will already know where the camera focused. Keep in mind that if you selected an AF Point and then recomposed the image before taking the shot, the image on your rear LCD will display which AF Point was used *but* the displayed AF Point will not actually be located in the same place on the image that the camera focused (since you recomposed), so it won't actually be helpful! (You may need to read the **Focusing** section about focus lock and recomposing before fully understanding this.)

Histogram
Set for *Brightness*, unless you have the experience, knowledge, and need to make use of the *RGB* histograms. Histograms will be discussed in detail in the **Histograms** section of this text.

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2.2 Custom Functions Menus
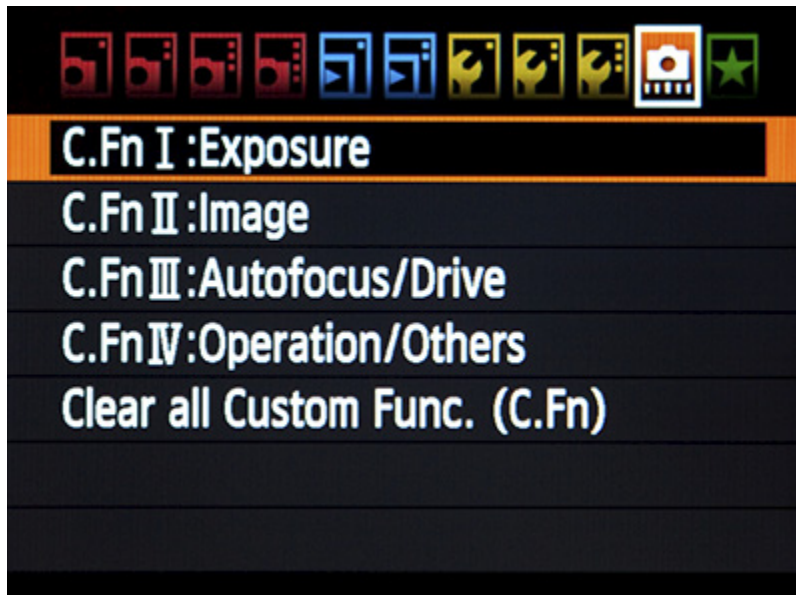
C.Fn I: Exposure

Figure 33 - Custom Function (C.Fn) menu.

C.Fn I-1 - Exposure Level Increments
This is to change the increments for shutter speed, aperture, and exposure compensation: 1/2 stop increments or 1/3 stop. 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 standard, traditional setting, but you may prefer the simplicity and ease of 1/2 stops. Shutter speed and aperture will be covered in the **Exposure** section, and **Exposure Compensation** in its own section later.
recommend: 0: 1/3-stop

C.Fn I-2 - ISO Speed Setting Increments
This sets the increments for ISO, either 1/3 stop or 1-stop (full stop). 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. ISO is discussed in the **Exposure** section.
recommend: 0: 1/3-stop

C.Fn I-3 - ISO Expansion
This allows for ISO speed H, or the high ISO of 12800 to be selected when you are choosing your ISO setting (unless Highlight Tone Priority is enabled). If you don't often need incredibly high ISO settings, I suggest leaving this off until you are in a situation that may truly need it, so that you or your camera does not choose ISO 12800 in an

7. METERING MODES

As with other Canon dSLR cameras, the Canon 7D provides you with four different metering modes to choose from: Evaluative, Partial, Spot, and Center-Weighted Average. If you plan to take advantage of them it is important to understand how they differ and when and how to use them in real-life photo situations. The 63-zone metering system of the 7D is an excellent improvement over the metering systems of just a few years ago, and the default Evaluative Metering Mode can be counted on to determine the proper exposure for your images nearly all of the time. But there are situations you may want or need to use the other modes.

7.1 Evaluative Metering

This is the default mode for your camera, and it can perhaps be used 90% of the time or more for general photography. The camera evaluates the entire scene, as divided into 63 zones, and chooses the best exposure based on its algorithms and database of thousands of images. The metering system is so good it can even be relied on for backlit or other challenging lighting situations. An important feature of this mode is that the Canon 7D takes into account the selected or active focus point in its determination of exposure settings. It assumes the active focus point is on your most important subject, so under challenging and critical situations, it is wise to confirm that the camera has chosen the focus point you want (well, this is always wise). Even better, as was previously discussed, you should manually choose the desired focus point.

In some situations the exposure that the camera determines may not be the exposure you desire. This may happen when photographing scenes with very bright and/ or dark areas, or some other type of dramatic lighting. Since dramatic and interesting lighting can make for compelling images, you will need to know how to deal with this. In these situations you can make use of either **Exposure Compensation**, **Exposure Lock** (AE Lock), or one of the other Metering Modes below. Of more likely, a combination of these three solutions. Note that the camera will set and limit the metering mode to Evaluative Metering during Live View Shooting.

7.2 Partial Metering

This mode meters (evaluates) a small central area to determine the optimum exposure settings - about 9.4% of the Viewfinder area of the 7D. The area is approximately a circle that is larger than the spot metering circle you see in the Viewfinder in Spot Metering mode, but not large enough to reach the top and bottom focus points - approximately the height and width of 3 AF Points in the center of the Viewfinder (see *Figure 81*). This mode is useful where there is a dramatic difference in lighting between the foreground or subject and the background (see *Figure 82*). For example, when your subject is backlit - maybe standing in front of a bright window or the sun - and consequently their face is in shadow. I know I said Evaluative Metering Mode can often handle this type of situation, but if you want the face or the subject to be properly exposed and not risk blowing the shot, it is worth it to use Partial Metering mode. Another time to use this is when there is a wide range of light in your scene, from bright

sunlight to deep shadows. You will need to determine and lock the exposure settings of a critical area of the scene - a face or a middle tone in the area you want properly exposed. Remember, this mode is *not* linked to your focus point. The partial area that is metered is always in the center, so meter on a face or middle tone in the part of the scene that is most critical and that you want properly exposed, using the central area of the Viewfinder. Lock in that exposure using **Exposure Lock** (explained below), then focus, recompose and take the shot.

Figure 81 - Harbor, Gloucester, Mass. - Partial and Spot Metering Areas of the 7D - Partial Metering Mode evaluates only the area under the superimposed grey circle to determine the exposure settings. Spot Metering Mode evaluates only the area inside the black circle, visible in the Viewfinder when in Spot Metering Mode, to determine the exposure setting. Shutter speed 1/400, aperture f/4.0, ISO 100.

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

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

A Pro Right There With You - *If you want to get the (EOS 7D) camera up and running with the feeling of a pro right there with you then I would strongly recommend it. He walks you through setting the camera up and gives you his reasoning for the settings. After the basic settings tour Doug then gets down to the heart of this great camera: the custom settings and focus system. His explanation is first class and he explains how various custom settings are related to each other. The focus system on this camera is top drawer and Doug does a fine job explaining what can be a very intimidating area of this camera. All in all a great read. Camera in one hand and reader in the other and dig in. Thanks Doug, just what I was looking for.*
-Tim S.

Brilliant - just what I was looking for! *A manual that was exciting, clear to follow, had examples and was used by a professional who gave just the right amount of technical info with explanations of why you use those settings, when to use those settings and so on...all properly explained. Doug's book is a joy to follow, well thought through and well written. The camera company should be employing Doug to write their cameras manuals!*
-Robert D.

It's clear, concise *and gets to the heart of the camera's multiple and often confusing options. Very highly recommended - for experienced user and beginner alike.*
-G.S.A.

It's the first guide I've read which has taken me through all the settings in an understandable way. I now feel that I have control over the camera.
-Peter S.

Really Focuses on the "Why" - *I found the (camera's) manual good for understanding how to set things up but not much on the why - this book really focuses on the "why." The guide helped me understand why to use specific settings for specific needs.*
-Benoit A.

Amazing! - *Great and easy to understand and very complete. Very highly recommended. The guy REALLY knows what he's talking about.*
-P.M.

Purchase *Canon 7D Experience* at:
http://www.dojoklo.com/Full_Stop/Canon_7D_Experience.htm