

# Canon EOS R7 Experience

The Still Photography Guide to  
Operation and Image Creation with the  
Canon EOS R7 Mirrorless Camera

an e-book by:  
Douglas J. Klostermann



***PREVIEW of:***  
**Canon EOS R7 Experience**

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Image Creation with the Canon EOS R7*

by  
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### **Canon EOS R7 Experience - *PREVIEW***

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By: Douglas J. Klostermann

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## 1. GETTING STARTED with the CANON EOS R7

### 1.1 Introduction to the EOS R7

Following the success of the full-frame EOS R models, Canon has introduced their first RF lens mount cameras with APS-C size sensors, the EOS R7 and the EOS R10. The Canon EOS R7 boasts a 32.5 megapixel CMOS sensor, rapid 30 frames per second continuous shooting speed when using the electronic shutter, and dual UHS II SD memory card slots. The camera has an improved 651-zone autofocus system with the AF points covering nearly the entire frame, which will allow you to automatically detect, focus on, and track subjects, faces, and eyes throughout most of the scene. The EOS R7 also includes a fast DIGIC X processor, 5-axis in-body image stabilization (IBIS), an articulating touch screen, and built-in Wi-Fi and Bluetooth. The EOS R7 offers familiar Canon controls and menus, plus new or modified controls for quickly accessing and changing settings, such as the repositioned rear Quick Control Dial and the versatile *Flexible-Priority AE (Fv)* Shooting Mode which enables you to control any of the exposure parameters. Plus the EOS R7 includes several advanced video capabilities, including 4K video using the entire width of the sensor (oversampled from 7K), *Dual Pixel AF* for tracking moving subjects, HDR movies, and the *High Frame Rate* movie option for creating slow motion video.



Figure 1.1 - The Canon EOS R7 with the RF 24-105mm F4 L IS USM lens.

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The EOS R7 offers great image quality at high ISO settings for low-light shooting, with the native ISO range of 100 to 32,000, expandable up to 51,200. Plus, it offers Time-Lapse movie shooting, in-camera processing features such as Multiple Exposures, Focus Bracketing, and HDR shooting, and lens correction features for chromatic aberration, distortion, and diffraction. The cRAW file format enables you to capture files that are 40% smaller than RAW files, yet display no noticeable loss of image quality in most shooting situations. And the HDR PQ option allows you to save HEIF format images, with expanded dynamic range.

The *Auto White Balance* choices offer the option of either maintaining or eliminating the warm tones of incandescent lighting. The responsive touch screen can be used to quickly navigate menus, change settings, review images, and to position the focus point during both Live View and viewfinder shooting. When capturing images with the high-resolution sensor, small camera movements can negatively impact image sharpness, so Canon has included an electronic *Silent Shutter* option that eliminates the movement of the mechanical shutter, and a *Bulb Timer Exposure Time* setting so that the camera doesn't need to be touched during Bulb exposures. The DIGIC X processor allows for faster frame rates and extended burst rates, including 15 frames per second (fps) when using the mechanical shutter, and 30 fps when using the electronic shutter. It also allows for faster video rates.



*Figure 1.2 - 1957 Chevrolet Bel Air - Lions Annual Car Show, Waltham, Massachusetts - Canon EOS R7, Shutter speed 1/500, Aperture f/4.0, ISO 100.*

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The electronic viewfinder of mirrorless cameras differs from the optical viewfinder of a dSLR. The high-resolution (2.36 million dot) OLED viewfinder, with 100% coverage, will enable you to preview the exposure, white balance, Picture Style settings, and depth of field of the final image as you shoot, as well as to make use of a virtual horizon and an Auto Level feature to keep your images straight. You can also access the Quick Control Screen and a customizable M-Fn menu while looking in the viewfinder, so that you can change numerous camera settings without taking the camera from your eye. And you can utilize focus peaking and scene-magnification in the viewfinder, as well as the Focus Guide rangefinder function, to assist with manual focusing.

While many of the controls of the EOS R7 will be familiar to Canon shooters, there are some notable additions. The repositioned Quick Control Dial, located on the rear of the camera, is used to adjust settings while shooting, as well as navigate menus and browse images. The Multi-Function Button (M-Fn Button) on the top of the camera can be used to quickly access and change five shooting settings of your choice, without having to remove your eye from the viewfinder while shooting. The Multi-Controller thumb joystick is used to position the autofocus point, area, or zone. The directional Cross Keys and the rear touch screen can also be used to position the active autofocus point while shooting. The AF switch on the front of the camera can be used to switch the lens to manual focus. And video shooting is accessed by turning the Power switch past *On*, to the Movie Mode icon.

The Flexible-Priority AE (Fv) Shooting Mode, first introduced on the EOS R, allows you to control any of the exposure parameters, including the shutter speed, aperture setting, ISO setting, and exposure compensation, or to quickly set any of the parameters to *Auto* and let the camera control them. You can choose to control all of the parameters yourself, as with Manual (M) Mode, or to control some of them and let the camera control the others, as with Av and Tv Modes, or allow the camera to control all of them by setting them all to *Auto*, similar to Auto+ Mode, all while remaining in the same Fv Shooting Mode.

The 651-zone autofocus system offers face and eye detection, plus a separate subject detection function which can be set for people, animals, or motorsport vehicles. A subject tracking function is now available for use with all of the autofocus AF area modes, and the new *Flexible Zone AF* area modes allow you to customize the size and shape of the active autofocus area.

For capturing video, the EOS R7 offers HD and 4K UHD video with a choice of frame rates and compression options. The *4K Fine* setting will make use of the full width of the sensor, and will generate a 4K movie from a 7K oversampling. The *4K* setting will also make use of the full width of the sensor to capture sub-sampled UHD 4K video. The *4K Crop* setting will capture 4K at the native pixel crop, and thus make use of a 1.81x crop of the entire sensor. *Full HD* (1920x1080) will also make use of the full sensor width.

The camera can capture 10-bit HDR video as HDR PQ, with an expanded dynamic range. The 10-bit Canon Log gamma output option will capture a wide dynamic range when recording to the memory card or to an optional external device, retaining details in

both the shadows and the highlights, with the *View Assist* feature to help visualize the final, processed footage. Audio features include built-in stereo microphones with *Wind Filter* and *Audio Noise Reduction* options, and video still *Frame Grabs* can be saved from 4K video files. 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.

The EOS R7 makes use of the RF lens mount, and a series of RF lenses are designed for the EOS R system. They have a 54mm mount, which sits close to the sensor plane, a 12-pin electronic communication system with the camera, and optical image stabilization. The RF lenses all include a Control Ring which can be customized to quickly change one of the shooting settings including shutter speed, aperture, ISO, and exposure compensation. These lenses also communicate lens information directly to the viewfinder, allowing you to view the current focal length. Available RF lenses include the *RF 18-150mm F3.5-6.3 IS* kit lens, *RF 28-70mm F2 L*, *RF 50mm F1.2 L*, *RF 24-105mm F4 L IS*, and *RF 35mm F1.8 Macro IS*.

Three different lens mount adapters enable you to use EF and EF-S lenses with the EOS R7. The *Mount Adapter EF-EOS R* is the basic adapter that allows you to connect EF and EF-S lenses. The *Control Ring Mount Adapter EF-EOS R* includes a Control Ring, similar to the ring on the RF lenses, which can be used to change various shooting settings. The *Drop-in Filter Mount Adapter EF-EOS R* allows you to insert a circular polarizing filter or variable ND filter. This makes it possible to use these types of filters with any lens, including ultra-wide-angle lenses and tilt-shift lenses.

With its high-resolution, high-quality image sensor, 651-zone autofocus system with face, eye, and subject detection and tracking, up to 30 frames per second continuous shooting speed, DIGIC X processor, and high ISO capabilities in low light, the Canon EOS R7 enables photographers to consistently capture sharp, clean, and well-exposed images. The EOS R7 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 EOS R7 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 EOS R7 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 EOS R7 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 EOS R7 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 EOS R7 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 details and the background appear out of focus, with the leaves and twigs captured still and not blurred from the motion of the wind, in a shaded setting, on a sunny day (see *Figure 1.3*). You have to tell the camera to do all of this through the various controls and settings, such as the autofocus AF Area (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 setting (relatively low-light setting) and the White Balance setting (sunny day).



*Figure 1.3 - Fallen Birch Tree, Whipple Hill, Lexington, Mass. - Autofocus, exposure metering mode, aperture, shutter speed, ISO, and white balance all considered in capturing this image. 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 photography is all about! At least if you wish to consistently create the well-made,

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interesting, and compelling images you envision. And that is why the EOS R7 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 mirrorless camera like the EOS R7 takes time, practice, patience, mistakes, and experimentation. If you have switched or upgraded from a previous model such as one of the 7D models, the 90D or one of its predecessors, or a Rebel model, 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 EOS R7 will help you capture sharp, detailed images of subjects and moments that previously you may have missed.



*Figure 1.4 - Great Blue Heron Taking Flight, Arlington, Mass. - Shutter speed 1/1600, Aperture f/4.0, ISO 640.*

If you are relatively new to digital photography and are still in the process of learning all the controls of an advanced digital camera and the exposure concepts of digital photography, you have perhaps ventured into the proverbial deep end of the pool by choosing the advanced EOS R7! 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 an advanced digital 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 EOS R7, 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.

The EOS R7 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 mirrorless or dSLR camera, including the EOS R7, 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 R7 Advanced User Guide* will not be repeated here. Among the official manual's often brief descriptions and sometimes frustratingly incomplete 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. In this guide, the references to the *Canon EOS R7 Advanced User Guide*, including page numbers, are based on version CT2-D181-B of the Canon manual. A PDF version of the *Canon EOS R7 Advanced User Guide* can be obtained from the Canon website: <https://cam.start.canon/en/C005/>



*Figure 1.5 - 1961 Chevrolet Corvette - Lions Annual Car Show, Waltham, Massachusetts - Canon EOS R7, Shutter speed 1/3200, Aperture f/4.0, ISO 100.*

The site also contains links to additional manuals, software, and apps. If you have an iPad or tablet you will find that it is helpful to download the manual 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 29-34 of the *Canon EOS R7 Advanced User Guide* 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 23-28 of the *Canon EOS R7 Advanced User Guide*. 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. General shooting cautions and movie shooting cautions are found \*throughout the *Canon EOS R7 Advanced User Guide*.



## 3. MENU SETTINGS

### 3.1 Introduction to Setting Up the EOS R7

The Menus and Custom Settings of the EOS R7 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 entry-level digital 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.



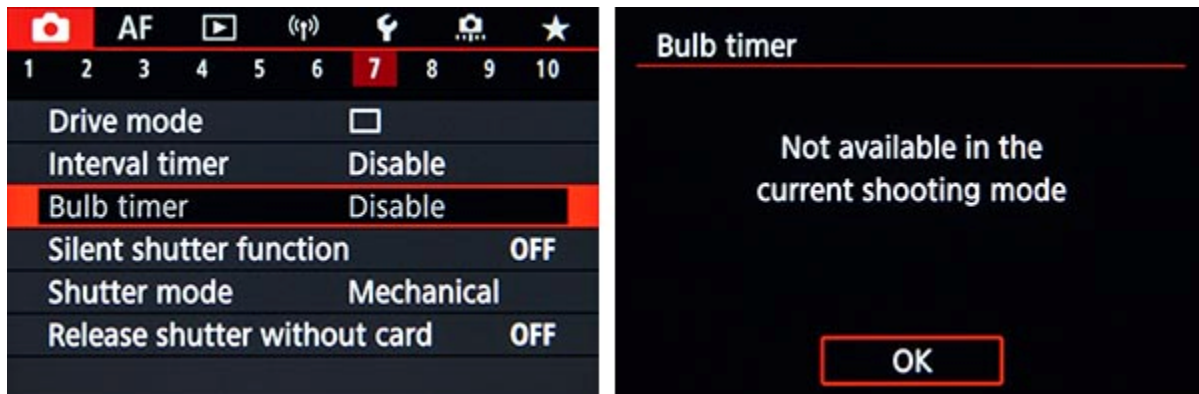
*Figure 3.1 - Vintage Bicycle, Concord, Massachusetts - Canon EOS R7, Shutter speed 1/80, Aperture f/4.0, ISO 400.*

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 EOS R7. 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 EOS R7 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 EOS R model, a recent Canon 7D or 5D model, or even a 70D/80D/90D before using the EOS R7, 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 several new additions with the EOS R7, including those that apply to a mirrorless camera.



*Figure 3.2 - If a menu item is greyed-out and inaccessible (left), you can press the Q / SET Button to learn what is causing the conflict (right). However, you will still need to determine that, in this example, the Shooting Mode Dial needs to be set to B - Bulb.*

**Important Note About Menu Conflicts:** As with most current dSLR and mirrorless cameras, the EOS R7 has a few menu setting 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 not actually arbitrary quirks, but are typically due to logical conflicts or camera limitations. The EOS R7 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 3.2*). 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. If the *Dual Pixel RAW* item in the *Shooting 1 Menu* is enabled, you will not be able to access the *High-Speed Continuous +* or *High-Speed Continuous* drive mode options. Also, when using the *Mechanical* shutter along with *Auto Level*, *High-speed continuous* and *High-speed continuous + Drive Modes* will not be available.

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 *Dual Pixel RAW*, *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!:** Set the *Shooting Mode* to Av, Tv, or M 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 *Info Button* to quickly jump between the primary menu tabs (*Shooting*, *AF*, *Playback*, etc.), use the top *Main Dial* or left and right *Cross Keys* to access each individual menu within a tab (*Shooting 1*, *Shooting 2*, etc.), and use the rear *Quick Control Dial* or up and down *Cross Keys* to navigate the items listed in each menu. Press the *Q / SET Button* to access a menu item's options. Or, of course, you can use the touch screen to navigate the menus.

### 3.2 Menu Setup Spreadsheet

In conjunction with this book, I have also created a comprehensive *Canon EOS R7 Menu Setup* 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 EOS R7 Menu Setup* spreadsheet can be downloaded at the link below. Use the discount promo code shown just below for \$3.99 off, so that you can download the spreadsheet for free:

*Promo Code:* EOSR7MENU

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

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 EOS R7 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 or website.

I have also created a menu setup video for the Photo Shooting Menus, which you can see here:

<https://youtu.be/MORxKM0DH7o>

### 3.3 Photo Shooting Menus

Note that the Photo Shooting Menus are available when the Power Switch is turned to *On*, and the Movie Shooting Menus are accessed by turning the Power Switch to the video icon.

#### 3.3a Photo Shooting 1 Menu

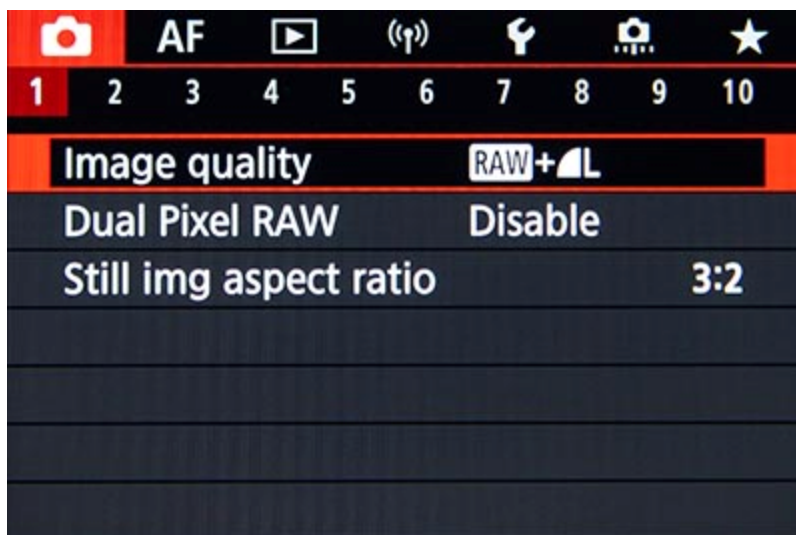


Figure 3.3 - Photo Shooting 1 Menu.

### Image Quality

You are putting a lot of effort into taking your images, and the EOS R7 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 (see *Figure 3.4 - left*). 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 EOS R7 also offers the HEIF file format, which is used when capturing HDR PQ images. HDR PQ is enabled in the *Shooting 2 Menu > HDR Shooting HDR PQ*.

The EOS R7 allows you to choose between standard RAW and cRAW. The cRAW format provides smaller-sized RAW files. A lossy compression algorithm is used, resulting in files that are about 30% to 50% smaller than a typical full-size RAW image file. 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. Although some image information is lost with a cRAW file, tests have shown that the difference in image quality compared to a RAW file is very difficult to detect in most shooting situations.

<https://www.the-digital-picture.com/Canon-Cameras/Canon-C-RAW-Image-File-Format.aspx>

The differences and the pros-and-cons of each format will be explained in the **Image File Formats - JPEG, HEIF, and RAW** section of Chapter 6. In the *Image Quality* menu item, turn the top Main Dial to select the RAW format, and the left and right Cross Keys to select the JPEG and HEIF quality. If you wish to only capture one format, set the other format on the dash (-) icon to disable it. When you are simultaneously capturing images to both memory cards, you will use this menu item to select which image file type and quality will be save to each card.

The image quality settings can also be accessed via the image quality icons on the shooting settings Quick Control Screen, or by pressing the Q / SET Button during shooting to access the Live View Quick Control Screen on the rear Screen or in the Viewfinder (see *Figure 3.4*). With the Live View Quick Control Screen, use one of the dials or the Cross Keys to change the JPEG / HEIF setting, press the AF Point Selection Button or icon to access the RAW settings, and press the Info Button or icon to select the active memory card (see *Figure 3.4 - right*).



Figure 3.4 - Image Quality Settings - Left: Select the desired RAW format and/ or the highest quality JPEG format. Right: Accessing the Image Quality settings on the Live View Quick Control Screen. On the Live View screen, press the AF Point Selection Button to choose the RAW Image Quality.



Figure 3.5 - You can also use the shooting settings Quick Control Screen to change the Image Quality Settings (left), as well as the related Record Function / Card Selection setting (right).

To record different image formats and qualities to each card, you will first need to access the *Setup 1 Menu > Record Func+Card/Folder Sel. > Photo Record Options*, and set it for *Rec. Separately*. Or quickly access this using the Quick Control Screen, as shown in Figure 3.5. Then return to this Image Quality menu, and select which type of image will be recorded to card 1 and to card 2 (see Figure 3.6).

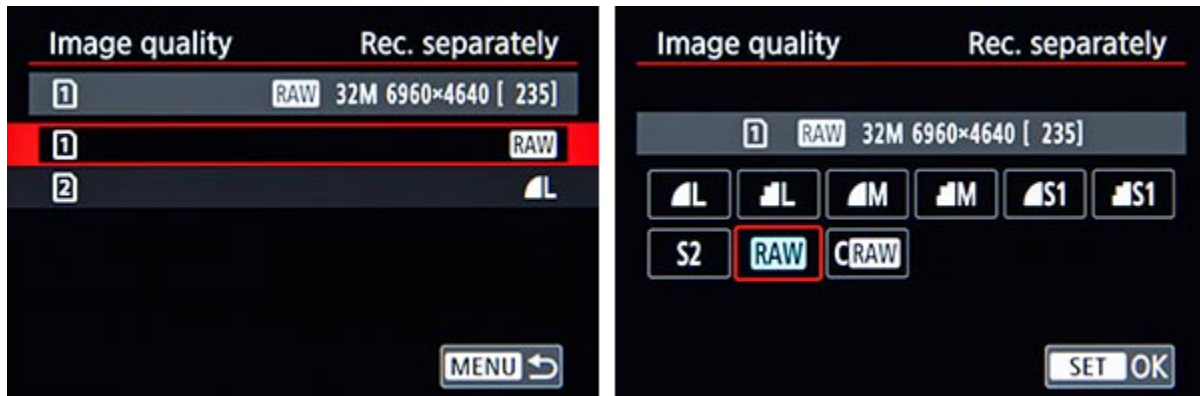


Figure 3.6 - Left: When the Record Function is set to Record Separately, you will select which type of image file is saved to card 1 and to card 2. Right: Selecting RAW as the Image Quality for card 1.

### Dual Pixel RAW

This is a Canon feature that was first introduced on the Canon 5D Mark IV (see Figure 3.7 - left). 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 RAW or cRAW images, the EOS R7 will capture these special types of images (see Figure 3.7 - right). The Dual Pixel technology of the sensor involves each pixel consisting of two photodiodes, and as Canon explains:

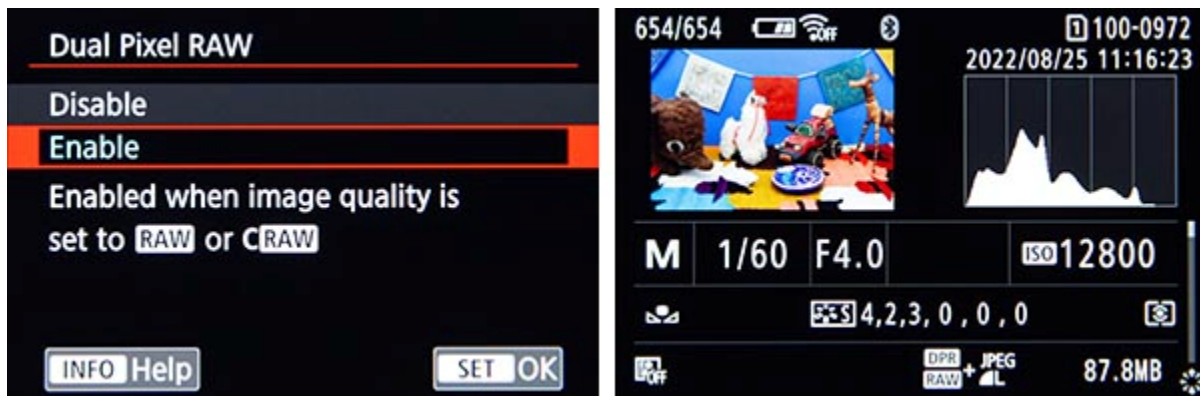


Figure 3.7 - Left: Enabling Dual Pixel RAW. Right: An image captured with Dual Pixel RAW, as shown on the Shooting Information Display during playback, as indicated at the lower center of the screen.

“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/>

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.

You will need to set the Image Quality to RAW or cRAW, and then enable Dual Pixel RAW in this menu. The *High-Speed Continuous Shooting+* and *High-Speed Continuous Shooting* drive modes are not available when capturing Dual Pixel RAW images, and the continuous shooting speed and maximum burst rate will be reduced. 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 10 m (3.3 to 32.8 ft)

100mm focal length - 2 to 20 m (6.6 to 65.6 ft)

200mm focal length - 4 to 40 m (13.1 to 131.2 ft)

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, HDR shooting, RAW burst mode, focus bracketing, electronic shutter, or one-touch image quality (when a camera button is assigned to temporarily change the image quality).

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 3.8*).





*Figure 3.8 - The Dual Pixel RAW Optimizer window of Canon's Digital Photo Professional (DPP) software, showing the available adjustments at right.*

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

### Still Image Aspect Ratio

You can use various image aspect ratios when capturing images, either 3:2 (standard ratio), 4:3 (used in point-and-shoot and Four-Thirds cameras), 16:9 (wide-screen ratio), or 1:1 (square), (see *Figure 3.9 - left*). The active area will be displayed or indicated with the image view on the rear Screen and in the Viewfinder so that you can preview the selected image area and ratio (see *Figure 3.9 - right*). You can use the *Shooting area* option of this menu to either mask or to outline the cropped area for the other aspect ratio settings (see *Figure 3.10*). Press the Info Button to access the Shooting Area options.

When shooting in JPEG format, the image file will be saved at the designated ratio. When shooting in RAW format, the full image (3:2) will be saved and the selected aspect ratio will be part of the image metadata that will be applied when opening the image in the Canon Digital Photo Professional (DPP) software. Note that when capturing images at ratios other than 3:2, the images will make use of fewer than 32.5 megapixels, as only a portion of the sensor will be used to record the image. Generally you will likely wish to keep this on 3:2 in order to take advantage of the entire sensor, and you can always then crop your images in post-processing, unless you are working on a project where you desire all your images to be of a specific alternate ratio.

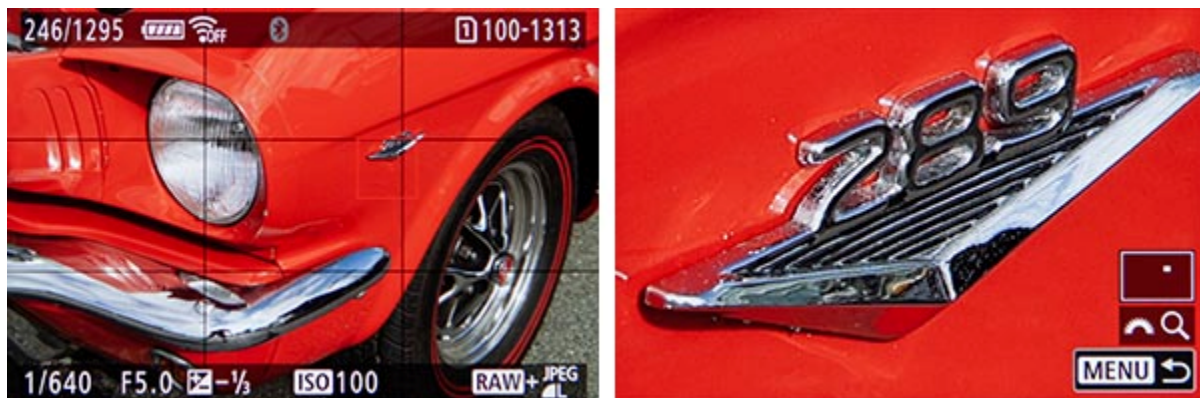
## 6. PLAYBACK and IMAGE FILE FORMATS

### 6.1 Image Playback

You can instantly review the image you just captured on the rear Screen, and press the Playback Button to view all of the images and movies currently on the active memory card, and more closely inspect an image and the shooting settings used. You can then use the image playback Quick Control Screen to perform some editing functions to the images, such as rotating an image, resizing a JPEG, adding a rating, cropping an image, processing a RAW file to output a JPEG image. The EOS R7 also offers the option of a “one-button zoom” feature to quickly inspect an image at 100%, and the option to overlay a variety of grids to help review the composition.

**Viewing and Zooming** - To view the images (and movies) currently on the active memory card, press the Playback Button. Turn the rear Quick Control Dial or swipe the touch screen to navigate to previous or subsequent images, and use the Magnify Button and Main Dial to have a closer look.

As first introduced on the 5D Mark III, the EOS R7 has the single Magnify Button rather than the zoom-in and zoom-out buttons. During image playback, press the Magnify Button, then turn the top Main Dial to zoom in or out on an image (see *Figure 6.1*). Use the *Magnification* item of the *Playback 4 Menu* to set the desired initial Magnification level when the Magnify Button is pressed. Setting it for *Actual size (from selected point)* will allow you to simply press the Magnify Button and view the last image at 100% magnification, at the area of the active AF Point, so that you can quickly inspect focus. Setting it for *1x (no magnification)* will then allow you to use the Main Dial to zoom-in as desired. You can also select 2x, 4x, 8x, or 10x magnification options, and choose to zoom in at the center of the frame, or the area of focus.



*Figure 6.1 - Image Playback - Left: Press the Playback Button to view the captured images. The Playback Grid is enabled here, showing how the Viewfinder grid was used to position the emblem and the headlight at the rule-of-thirds intersections. Right: Press the Magnify Button and turn the top Main Dial to zoom-in and inspect the details and the focus of an image.*

When viewing a magnified image, use the Cross Keys, Multi-Controller, or touch screen to pan around the image, and use the rear Quick Control Dial to view previous or subsequent images at the same magnification level. This can be handy for inspecting and comparing a detail or area of focus of similar images. After pressing the Magnify Button you can use the Main Dial to zoom-out to an index screen with multiple (4, 9, 36, or 100) image thumbnails (see *Figure 6.2*). Use the Cross Keys to navigate the thumbnails. Press the Magnify Button again to “deactivate” zoom, and then you can use the top Main Dial to scroll screen by screen. Recall that you used the *Image Jump* item of the *Playback 5 Menu* to set how the Main Dial functions during individual image playback - it can be used to jump forward or back 10 images or a custom number of images, or jump by date, folder, movies, stills, protected images, or rating. This can help you to quickly navigate through your images. Note that you can also zoom-in on an image that appears immediately after the image is taken (Image Review), by pressing the Magnify Button.



*Figure 6.2 - Image Playback - Left: Zoom-out during image playback to view an index screen with multiple images. Right: Continue to zoom-out to view up to 100 thumbnails.*



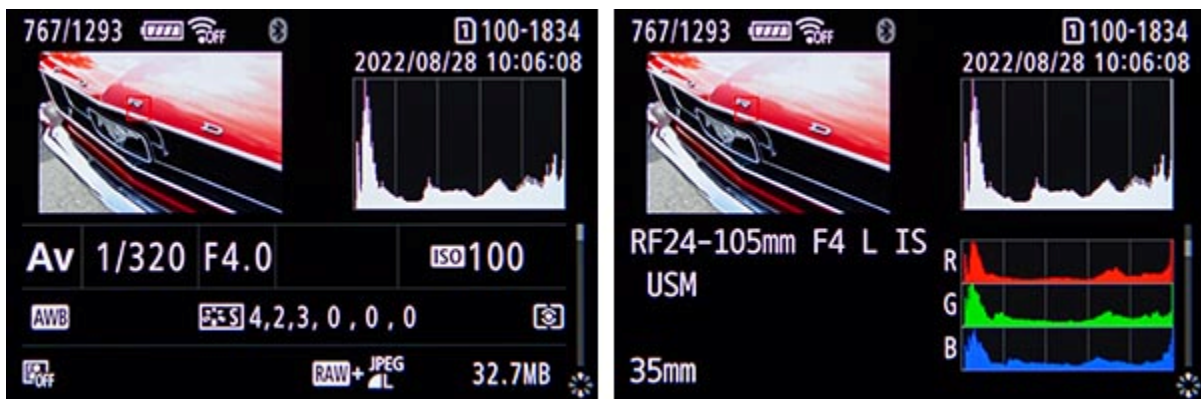
*Figure 6.3 - Using the Playback Grids to help evaluate the framing and composition of images. Left: The 6x4 Playback Grid, showing that the car is centered but not properly aligned with the horizontal grid. Right, the 3x3 grid, showing that the card is aligned horizontally.*

You can turn on the *Playback grid* display in the *Playback 6 Menu*, either *3x3* for the “rule of thirds” grid (see *Figure 6.3*), the denser *6x4* grid to perhaps better evaluate horizontals, verticals, and the horizon, or the *3x3 plus diagonal* grid lines.

**Information Displays** - When viewing a single image during playback, press the Info Button repeatedly to view various information display screens that show camera and shooting settings. You can view just the image with no information, or the image with basic information such as the image number and exposure settings (see *Figure 6.4*). You can also view the Shooting Information Display screen which will show a thumbnail of the image with the brightness histogram plus shooting information (see *Figure 6.5 - left*). As with other recent Canon models, you can then press up or down on the Cross Keys or the Multi-Controller to view additional information at the bottom of the screen, including the RGB Histograms with lens information, or white balance, Picture Style, noise reduction, lens correction, and GPS information (see *Figures 6.5 and 6.6*). Remember that the *Playback information display* item of the *Playback 6 Menu* can be used to choose which information is displayed on each of the playback screens, each time you press the Info Button or use the up and down Cross Keys.



*Figure 6.4 - Image Playback - Two of the various playback display options which can be viewed by pressing the Info Button during image playback: Basic Information Display (left), and no information (right).*



*Figure 6.5 - Image Playback - Shooting Information Display, with detailed information (left), and with the RGB Histograms and lens information (right). Press up or down on*

the Cross Keys or Multi-Controller to view different information at the lower part of this screen.

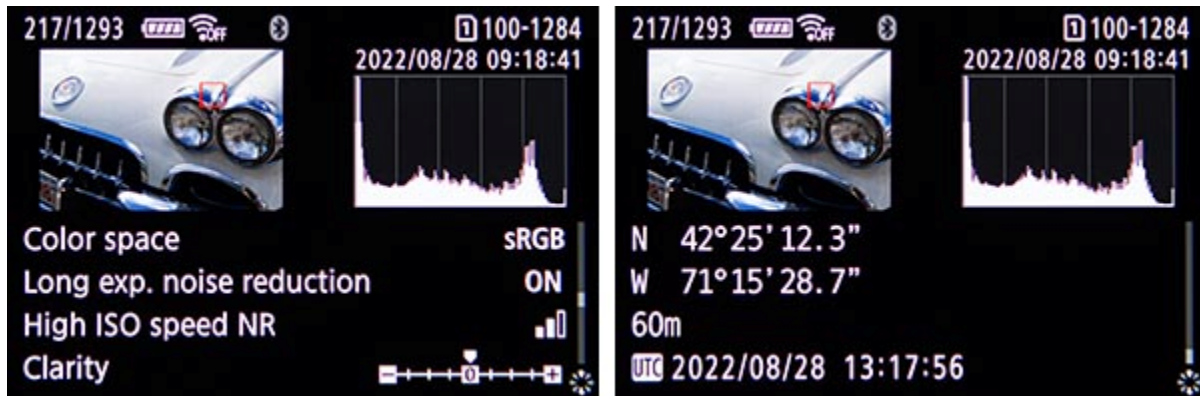


Figure 6.6 - Image Playback - Shooting Information Display, with additional camera settings (left), and with GPS information from a connected smartphone (right).

**Highlight Alert** - If you have enabled the *Highlight Alert* item of the *Playback 6 Menu*, then as you view the images on the displays, the overexposed areas of the images will blink (see *Figure 6.7 - left*). This indicates that those areas of the image have no detail remaining, and that the Histogram data has spiked or been cut-off at the right side of the graph (see *Figure 6.7 - right*). This will be explained in the **Histograms** section of the **Exposure Part 3** chapter.



Figure 6.7 - Left: Large areas of white on the car have been overexposed (due to the use of exposure compensation here), and thus the blinking Highlight Alert shows them mid-blink, in black. Right: The overexposed areas are also represented by the spike along the right side of the Brightness Histogram graph.

**AF Point Display** - If you have enabled the *AF Point Display* item of the *Playback 6 Menu*, then as you view your images on the displays, the AF Point or Points that were used for autofocus will be superimposed on the image as small red squares. Note that these AF Points are only visible during playback, and will not appear on the actual images. You can see the red square of the AF Point on the taillight of the car in *Figure 6.7 - left*.

**Playback Quick Control Screen** - When viewing a single image, press the Q / SET Button to access the Playback Quick Control screen, which will allow you to quickly access *Protect*, *Rotate*, *Rating*, *Creative Filters*, *Resize*, *Cropping*, *Image Jump*, *Image Search*, *Send Image to Smartphone*, *Creative Assist*, and *RAW Burst* (see Figures 6.8 and 6.9). You can access these items by using the up and down Cross Keys to navigate to the icon, then turning either dial or the left and right Cross Keys to change the setting. Or you can use the touch screen icons. This screen makes it much easier to access and change these settings, rather than having to search in the menus to find these items.

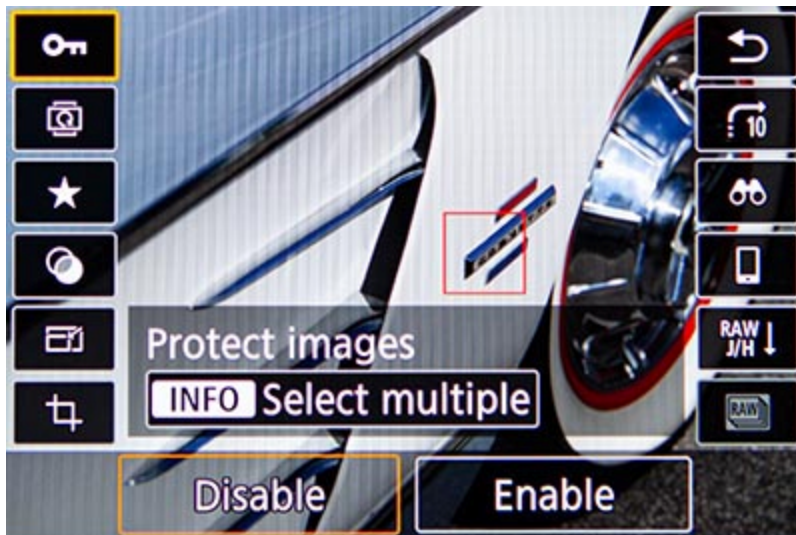


Figure 6.8- Quick Control Screen for image playback, with the Protect Images option selected.



Figure 6.9 - Use the Playback Quick Control Screen to access the Resize function (left), and the Image Jump feature (right).

During image playback, you can press the Erase Button to delete an image. If you have captured RAW plus JPEG/HEIF images on the same memory card, you will be prompted to select to delete both versions, or just the RAW version, or just the non-RAW version.

### 6.2 Image File Formats - JPEG, HEIF, and RAW

You are putting a lot of effort into taking your images, so you should make sure the files are of the best possible quality. I recommend that you select the Image Quality of either the highest quality (Fine) and largest (L) JPEG setting if you shoot JPEG (capture JPEG images), or the RAW or cRAW setting if you shoot RAW. Or select JPEG plus RAW if you need both types of files. The EOS R7 includes the Compact RAW (cRAW) option. The cRAW option will save a lossy-compressed RAW image, which will be about 40% smaller than a standard RAW image. However, tests have shown that there will be no noticeable effect on the image quality, except with images that are dramatically underexposed by 4 or more stops. The EOS R7 also offers the 10-bit HEIF format (High Efficiency Image File), used when capturing HDR PQ images. As with JPEG files, HEIF are lossy, compressed files, though they have some advantages over the JPEG format.

Select the Image Quality in the *Photo Shooting 1 Menu* or through the Quick Control Screens (see *Figures 6.10* and *6.11*). If you prefer or need image files that are smaller in size and pixel dimension, such as for immediate output for use on the Internet, choose a smaller JPEG or HEIF size, or the cRAW setting - though note that you can always quickly and easily resize (reduce) a full-size, full-quality JPEG image in-camera using the Playback Quick Control Screen, or you can make use of the RAW Image Processing item of the *Playback 3 Menu* or the Playback Quick Control Screen to output a JPEG image of any size from a RAW image.



*Figure 6.10 - Image Quality - Use the shooting settings Quick Control Screen (left) to access the Image Quality setting options (right). The Image Quality setting is used for selecting the RAW and the JPEG / HEIF file format, and the desired quality to save your image files. Turn the top Main Dial to select the RAW option, and use the left and right Cross Keys to select the JPEG / HEIF option, as indicated by the icons on the right side of the screen.*

#### JPEG

With JPEG image files, the camera takes the information that hits the sensor and processes it with all the settings that you ask it to use. If you have the White Balance set on *Cloudy*, it processes the image to apply that information. If you have the Picture

## 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. If you allow the camera to autofocus by automatically choosing the focus point(s) (such as in *Auto+* Shooting Mode or with *Whole Area AF*) it typically focuses on the closest object, face, or vehicle. 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 use an *Expand AF Area* or a *Flexible Zone* as the autofocus area mode.



*Figure 7.1 - 1960 Chevrolet Corvette - Lions Annual Car Show, Waltham, Massachusetts - Canon EOS R7, Shutter speed 1/640, Aperture f/6.3, ISO 100.*

By selecting an AF Point, Area, or Zone, you are telling the camera exactly where to autofocus, or where to look to find a moving subject to start tracking. For example, if you are capturing an image of a bird in a tree, you will want to locate the AF Point over the bird, so that the camera will focus on that subject and not on some branches or leaves that are located closer to the camera. However, the EOS R7 boasts several autofocus improvements which can allow it to automatically locate and follow specific types of subjects, including people and their faces and eyes, animals including cats, dogs, and birds, and motorsports vehicles, including key details on the vehicles. While you will still



need to initially locate the active AF Point, Area, or Zone over the intended subject, these features can enable the camera to assist in focusing and tracking a subject.

The autofocus system of the EOS R7 plays a large role in allowing you to capture exactly the shot you intend. In the non-Auto Shooting Modes (P, Av, Tv, Fv, M, and Bulb-B) you can, and should, take control of the autofocus system. The autofocus system is made up of the autofocus related controls, the autofocus AF Operations (also called the AF Mode), the autofocus AF Areas (also called the AF Area Modes), the autofocus AF Points and Zones, and the autofocus related menu and Custom Function items which customize how the AF system works. You will select an AF Operation 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 subject that moves both throughout the frame, as well as closer or farther. And you will choose an AF Area based on how large of an area you want the camera to look at to locate or track your intended subject. This can range from a single AF Point, to a wider Zone, to all the available AF Points in the whole frame. You can set the AF Operations and AF Areas 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 with the various recommended AF settings.

Autofocus works in part by looking for contrast, so you should try to focus (locate the active AF Point seen in the Viewfinder or rear Screen, as in *Figure 7.2*) 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. The *AF-Assist Beam Firing* of the camera or an optional Speedlite (*AF 3 Menu*) can assist in low light situations.

As a mirrorless camera, the autofocus system of the EOS R7 works the same whether you are shooting through the Viewfinder or using the Live View scene on the rear Screen. If you have shot stills or video using Live View of a dSLR camera, you will likely have experienced the slow autofocusing and hunting for focus, which made Live View autofocusing frustrating and impractical for many situations, and virtually eliminated the usefulness of continuous autofocus for video shooting. And in the past it was common that making use of autofocus while shooting in Live View or video was slower, noisier, and more cumbersome than working through the Viewfinder. This has all dramatically changed with the improved *Dual Pixel CMOS AF* autofocus system of the EOS R models. This system, first introduced in the Canon 70D dSLR, resolves the majority of these issues. In addition to allowing continuous focus tracking when shooting video, the autofocus system of the EOS R7 enables continuous focus tracking for stills shooting as well. With previous cameras, when taking a series of continuous images, the Live View autofocus system would track the subject but then lock focus on the first image as soon as the Shutter Button was pressed, and so subsequent images might be out of focus as the subject moved. With *Servo AF Operation* of the EOS R7, you can continue to take a

## Canon EOS R7 Experience

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series of continuous images, and the camera will continue to track the moving subject and update the focus for each image.

So with the autofocusing of the EOS R7, you will be able to accurately focus quickly, without the camera hunting for focus, as well as to successfully track moving subjects and maintain smooth and accurate continuous focus.



*Figure 7.2 - Making use of the camera's Dual Pixel CMOS AF capabilities to quickly and smoothly change focus from one area of the scene to another. Here the focus is changed from the llama figure's head (left) to the giraffe figure's head (right). This can also be used prior to or during movie recording, by simply tapping on the desired area of the rear Screen.*

Canon's *Dual Pixel CMOS AF* is a sensor-based phase-detection autofocus system which allows the camera to quickly determine both how much a subject is out of focus and in which direction it needs to correct. (By sensor-based, it means that no mirror and separate autofocus sensor are required to temporarily or partially divert the light for focusing, as is done with dSLR viewfinder autofocusing.) Previously, dSLR Live View autofocusing relied on either contrast-detection systems, which had to test and hunt to determine which direction to correct, or hybrid systems which used phase-detection to get the subject close to focus and then contrast-detection to fine-tune the final focus. And with previous systems, a limited number of separate, dedicated phase-detection pixels were located about the sensor. However with the EOS R7, dedicated phase-detection pixels are located at every pixel over a large area of the sensor's width and height, so autofocusing can occur at virtually any point of a large area of the frame. The autofocusing area is approximately 88% of the width of the frame, and 100% of the height, as indicated by the outer brackets seen on the displays when tracking a subject with *Servo AF*. Obviously one can see the benefits of making use of this to either immediately focus exactly where you wish, or to track and retain focus on a moving subject when taking the shot, without the issue of losing it if it strays away from, or between, a limited number of AF Points.

Canon's ingenious solution for accomplishing this is to divide each pixel into two photodiodes that act independently for the phase-detection process during autofocusing, but work together as a single pixel for image capture. Each pixel has a

micro-lens that separates the light between the pixel's two photodiodes, and the camera focuses by making use of the phase-difference as seen by the two halves of each pixel. For an excellent detailed explanation of how phase-detection and the *Dual Pixel CMOS AF* autofocus system work, have a look at this article from Canon:

<https://www.usa.canon.com/internet/portal/us/home/learn/education/topics/article/2018/July/Canon-Autofocus-Series-Dual-Pixel-CMOS-AF-Explained/Canon-Autofocus-Series-Dual-Pixel-CMOS-AF-Explained>

While this AF system will work with all of Canon's current lenses, the use of one of their STM "stepping motor" lenses and "NANO" USM lenses will result in even quieter autofocus operation while shooting video. An additional advantage of this system is that because the camera is using the image sensor itself to focus, without a separate AF sensor, the image should never suffer from front-focus or back-focus issues due to mis-calibration. And autofocus will continue to make use of nearly the entire frame even with f/8 and f/11 lenses or lens-extender combinations.

### Checking Focus

You can review your images on the rear Screen of your Canon EOS R7 (or in the Viewfinder) to try to determine if they are in focus, especially by zooming in as close as possible using the Magnify Button. But be aware that this 3" rear Screen has 1.62 million dots or pixels, while your actual image has over 32.5 million pixels. This means that some images may appear to be in proper focus on your rear Screen, but you might discover that the actual images are not in quite as sharp focus when reviewing them on your computer monitor. The opposite can actually occur as well at certain magnifications, where an image appears slightly out of focus at such a small size and resolution, but is actually in sharp focus when viewed full-size on a monitor. However, zooming-in to 100% view on the rear Screen can help to determine the accuracy of the focusing, but be sure to verify on a larger monitor.

The EOS R7 boasts some significant improvements to the autofocus system, which might change how you use it compared to previous models. They should also make it significantly easier to locate and to track moving subjects. Each of these features are found in the AF 1 Menu as well as the Autofocus Cases of the AF 2 Menu. With previous EOS R models, there was a separate AF Area Mode that was used to detect eyes and faces and to track subjects. However, with the EOS R7, you can now detect eyes and subjects, and track subjects, when using any of the AF Area Modes, such as *1-Point AF*, *Expand AF Area*, or *Flexible Zone AF*. This is a powerful improvement, which gives you much more flexibility for selecting the AF Area that works best for the size and motion of the subject, yet will still enable you to automatically detect and track subjects. These features will be explained in the next chapter, after discussing the AF Operations and AF Area Modes.

### 7.2 Autofocus - AF Point Selection

As I go over the autofocus AF Operations and AF Areas in the next sections, I will talk about manually positioning the AF Point or AF Area. This is done to tell the camera exactly which AF Point to use for locating the subject and autofocus, and is generally recommended so that you have full control over where the camera focuses. Alternately, you can make use of automatic subject selection (by first enabling the *Subject to detect* menu item), as well as use *Subject tracking* and *Eye detection*, but then you will not always have complete control over where the camera focuses. However, these features are useful and powerful, and can be taken advantage of in many shooting situations. And even when using these features, you will still want to first locate the active AF Point, Area, or Zone over your intended subject, so that the camera knows which subject to detect, focus on, and follow.



Figure 7.3 - Canon EOS R7 controls, including Autofocus-related controls.

When making use of AF Areas such as *1-Point AF*, *Expand AF Area*, or *Flexible Zone AF*, use the Multi-Controller joystick to position the AF Point, Area, or Zone. You can also use the Cross Keys to position the AF Point. First press the AF Point Selection Button before using the Cross Keys, or set the *C.Fn 3 > Customize Buttons* menu item

to have the Cross Keys perform *Direct AF Point Selection*, so that you do not have to press the AF Point Selection Button first. To quickly choose the center AF Point, you can press the Multi-Controller straight in, or tap the "return to center" touch screen icon. You can also make use of Touch and Drag AF, where the rear touch screen is used to quickly locate the active AF Point, Area, or Zone, while looking through the Viewfinder. As explained in the **Autofocus (AF) Menus** section of this guide, if you wish to make use of this feature, access the *Touch & Drag AF Settings* item of the *AF 4 Menu*, enable *Touch & Drag AF*, choose the desired *Positioning Method (Absolute or Relative)*, and then set the *Active Touch Area* option to specify which part of the rear Screen will be used for Touch and Drag AF.



Figure 7.4 - Left: The Quick Control Screen with the AF Operation icon highlighted. The AF Area icon is just to the left of the AF Operation icon. Change the setting directly on the screen by turning a dial, or press the Q / SET Button and make your selection (right).

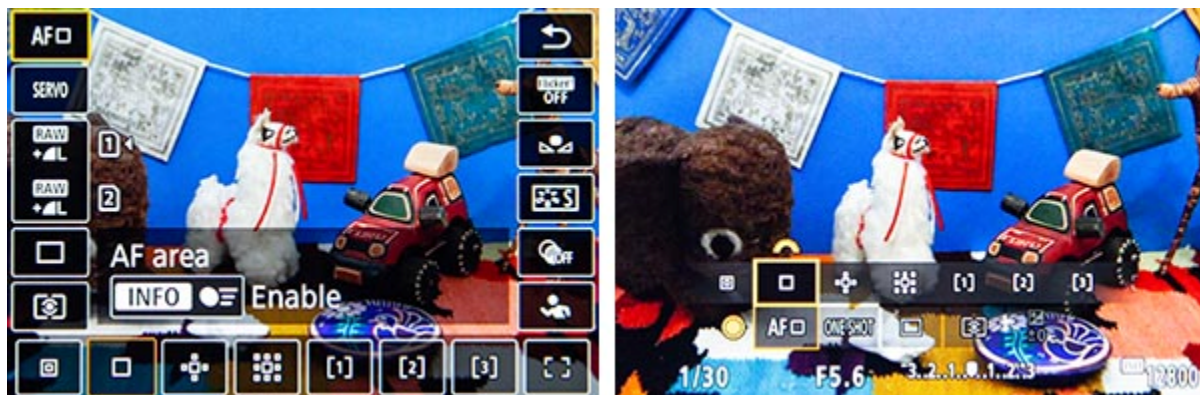


Figure 7.5 - Left: Use the Live View Quick Control Screen to access the AF Area (the top-left icon), and select 1-Point AF. The AF Operation icon is just below it. Right: If the AF Operation and AF Area functions are added to the M-Fn Button, you can quickly access them via this button.

To see how manual autofocus point selection works, set the Shooting Mode to Av or Tv for now, and make sure the switch on your lens is set to AF. Set your Autofocus AF Operation to *One-Shot* by using either of the Quick Control Screens (see Figure 7.4 and

*Figure 7.5 - left*), or via the M-Fn Button if you have included AF Operation as one of the five functions accessed with this button (see *Figure 7.5 - right*). Set the AF Area to *1-Point AF*, also using the shooting settings or Live View Quick Control Screen, or the M-Fn Button if you have included AF Area as one of its five functions.

- Tap the Shutter Button with a half-press to wake up the camera.
- To position the AF Point, while looking through the Viewfinder, use the Multi-Controller joystick to move the focus point to where you wish to focus. Or use the *Touch and Drag* feature of the rear touch screen to position the AF Point.
- Place that point over your intended subject.
- Press and hold the Shutter Button halfway down and see your selected point turn green. The camera will beep if you have that enabled. You have locked the focus. An orange AF Point means that the camera did not achieve focus.
- Keeping the Shutter Button pressed halfway, 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 may need to refocus on the subject again.

If the AF Point does not turn green, 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. Or the camera may be set in *Servo AF Operation* (rather than *One-Shot*), and does not lock focus in this manner because it is tracking a moving subject. In rare situations when autofocus 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 7.6 - 1955 Chevrolet Bel Air - Lions Annual Car Show, Waltham, Massachusetts - Simulated view of EOS R7 Viewfinder, using 1-Point AF to position a single AF Point, and locate it on a detail of the car. Canon EOS R7, Shutter speed 1/2500, Aperture f/4.0, ISO 100.*

Remember that you can use a smaller focusing frame by selecting *Spot AF*. There are important reasons to use all the focus point locations throughout the frame, 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 reposition the focus point to various locations as you shoot, but it is actually very feasible and will likely become instinctive.

### **7.3 Touch and Drag AF**

The *Touch & Drag AF* feature allows you to use the rear touch screen to position the AF Point, Area, or Zone, while shooting through the Viewfinder. Typically you will use your thumb on the rear Screen to position and move the AF Point around the frame. The *Touch & drag AF settings* are found in the *AF 4 Menu* (see *Figure 7.7 - left*). The options include *Touch & drag AF*, used to enable this function, *Positioning method*, to choose either *Absolute* or *Relative* positioning of the AF Point based on your touch

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### *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 IV Experience* and *Canon EOS R 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).

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