The Still Photography Guide to Operation and Image Creation with the Canon EOS R6 Mark II

an e-book by:

Douglas J. Klostermann





PREVIEW of: Canon EOS R6 Mark II Experience

The Still Photography Guide to Operation and Image Creation with the Canon EOS R6 Mark II

by Douglas J. Klostermann

Full Stop. good writing for better photography

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Canon EOS R6 Mark II Experience - PREVIEW

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1. GETTING STARTED with the CANON EOS R6 MARK II

1.1 Introduction to the EOS R6 Mark II

Following the success of the previous full-frame EOS R models including the original EOS R6, Canon has introduced the improved EOS R6 Mark II. The EOS R6 Mark II boasts a 24.2 megapixel *CMOS* sensor, rapid 40 frames per second continuous shooting speed when using the electronic shutter, and dual UHS II SD memory card slots. The camera has an improved autofocus system with 4,897 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 intelligent subject detection function can automatically detect people, animals including cats, dogs, birds, and horses, and vehicles including motorsport cars and motorcycles, aircraft, and trains. Eye detection can now be set to prioritize the left or right eye, and the HDR shooting mode includes an option for capturing moving subjects.



Figure 1.1 - The Canon EOS R6 Mark II with the RF 24-105mm F4 L IS USM lens.

The EOS R6 Mark II 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 R6 Mark II offers familiar Canon controls and menus, plus new or modified controls for quickly accessing and changing settings, such as an additional 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 R6 Mark II includes several advanced video capabilities, including 4K video using the entire width of the sensor (oversampled from 6K), *Dual Pixel AF* for tracking moving subjects, HDR movies, and the High Frame Rate movie option for creating slow motion video.

The EOS R6 Mark II offers great image quality at high ISO settings for low-light shooting, with the native ISO range of 100 to 102,400, expandable up to 204,800 (High) and down to 50 (Low). 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. A new *Hybrid Auto* shooting mode will capture short videos with each still image, which are then combined into a "digest movie."

The *Auto White Balance* setting offers 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 12 frames per second (fps) when using the mechanical shutter, and 40 fps when using the electronic shutter. The *RAW Burst Mode* can capture a 30 fps burst, with 0.5 second pre-shooting buffering. The processor also allows for faster video rates and the ability to buffer and pre-record video for up to five seconds.

The electronic viewfinder of mirrorless cameras differs from the optical viewfinder of a dSLR. The high-resolution (3.69 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 level to help 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.



Figure 1.2 - 1956 Maserati A6G/54 2000 Coupe Series III By Frua - Larz Anderson Auto Museum, Brookline, Massachusetts - Canon EOS R6 Mark II, Shutter speed 1/200, Aperture f/4.0, ISO 6400.

While many of the controls of the EOS R6 Mark II will be familiar to Canon shooters, there are some notable additions. In addition to the top Main Dial there are now two Quick Control Dials, which are 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 eight 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 rear touch screen can also be used to position the active autofocus point while shooting. And video shooting is accessed by turning the Still Photo Shooting / Movie Recording Switch 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 4,897-point autofocus system offers face and eye detection, plus a subject detection function which can be set for people, animals, or motorsport vehicles, with the option to focus on key details of vehicles. Subject tracking 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 R6 Mark II offers HD and 4K UHD video with a choice of frame rates and compression options. The 4K setting will make use of the full width of the sensor, and will generate a 4K movie oversampled from 6K. Video recording also offers a Focus Breathing Correction option, which corrects for an effect where the angle of view changes as the lens focal length changes when zooming. Video also offers zebra stripes and false color display, to assist with obtaining the proper exposure. A Recording Emphasis feature can be enabled to display a blinking red border around the frame when recording is in progress.

The camera can capture HDR PQ video, 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 8.3 MP video still *Frame Grabs* can be saved from 4K video files. The *High Frame Rate* option allows you to shoot HD videos at 179.82/150.00 fps and 119.88/100.00 fps, which can then be played back in slow motion.

The EOS R6 Mark II 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.

Three different lens mount adapters enable you to use EF and EF-S lenses with the EOS R6 Mark II. 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, 4,897-point autofocus system with face, eye, and subject detection and tracking, up to 40 frames per second continuous shooting speed, DIGIC X processor, and high ISO capabilities in low light, the Canon EOS R6 Mark II enables photographers to consistently capture sharp, clean, and well-exposed images. The EOS R6 Mark II 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 R6 Mark II 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 R6 Mark II 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 R6 Mark II 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 R6 Mark II 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 R6 Mark II 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, interesting, and compelling images you envision. And that is why the EOS R6 Mark II 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 R6 Mark II takes time, practice, patience, mistakes, and experimentation. If you have switched or upgraded from a previous model such as the original EOS R, 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 R6 Mark II 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 R6 Mark II! 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 R6 Mark II, 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 R6 Mark II 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 R6 Mark II, 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 R6 Mark II 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 R6 Mark II Advanced User Guide*, including page numbers, are based on version CT2-D181-B of the Canon manual. A PDF version of the *Canon EOS R6 Mark II Advanced User Guide* can be obtained from the Canon website:

https://cam.start.canon/en/C012/

3.3b Photo Shooting 2 Menu

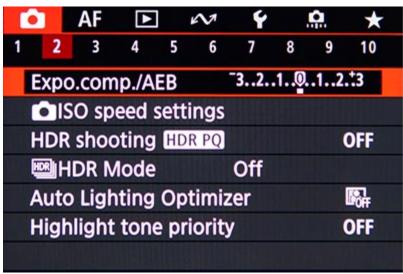
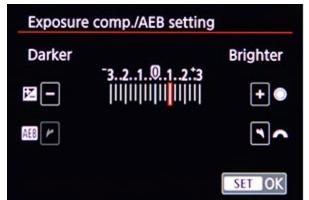


Figure 3.12 - Photo Shooting 2 Menu.

Exposure Compensation/AEB Setting

Exposure Compensation allows you to change the exposure from what the camera has determined, in order to make subsequent images darker or brighter. While you can use this menu to change the Exposure Compensation amount (see *Figure 3.13 - left*), you can more easily use the rear Quick Control Dial 1 for directly changing Exposure Compensation as you shoot in Av or Tv Shooting Modes, while monitoring the setting in the Viewfinder, or on the rear Screen. You can set Exposure Compensation up to +/-3 stops. Note that the Exposure Compensation amount will stay in effect when the camera is turned off.

You will need to access this menu item (or the shooting settings Quick Control Screen) for Auto Exposure Bracketing (AEB). Bracketing is when you take a series of the same image using different camera settings, in order to ensure that at least one of the images is correct, or to experiment, or for HDR purposes. You can manually change the exposure settings yourself in order to bracket, or you can set up the camera to do it for you. Auto Exposure Bracketing (AEB) is when the camera automatically changes the settings and takes this series of shots, according to your user-determined settings.



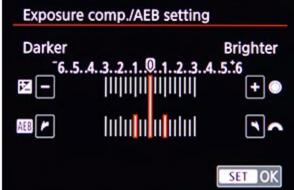


Figure 3.13 - Access the Exposure Compensation / Auto Exposure Bracketing menu to set the exposure compensation using the rear Quick Control Dial 1 (left), and / or the bracketing amount using the top Main Dial (right), as indicated by the icons on the screen. You can also use the touch screen icons to make the adjustments.

To make use of these functions, use the rear Quick Control Dial 1 to adjust the Exposure Compensation amount, and turn the top Main Dial to enable and set the amount for Auto Exposure Bracketing, as indicated by the icons on the screen (see *Figure 3.13 - right*). Both **Exposure Compensation** and **Auto Exposure Bracketing** are explained in the **Exposure Part 3** chapter.

Photo Shooting ISO Speed Settings

Using this menu item you can set the ISO speed setting, as well as limit the ISO speed range that is available for you to select, and for the camera to select with Auto ISO (see Figure 3.14 - left). For setting the first option, ISO speed, you can more easily and quickly change the ISO setting by using the shooting settings Quick Control Screen, the Live View screen icon, or by pressing the M-Fn Button (if ISO is one of the functions assigned to that button). But you will need to access this menu to initially set up the other ISO related settings.

ISO speed determines the sensitivity of the sensor to light, and will be discussed in the **Exposure Part 1** chapter.

ISO Speed Range will determine what minimum and maximum ISO settings are available for you to choose during still photography shooting when not using Auto ISO. The available range is from L(50) Minimum to H(204,800) Maximum. This allows you to determine if you want the very high ISO settings available to select. If you have determined that images beyond a certain ISO range are unacceptable to you or you don't wish to make use of the high settings, limit the camera from accessing these settings (see Figure 3.14 - right). I suggest that you take test images to determine the highest ISO setting that you find acceptable in the situations you shoot, and limit the Maximum ISO to that amount. That will ensure that, when photographing, you don't accidentally set the camera to an exceptionally high ISO setting that you do not wish to use.





Figure 3.14 - Left: ISO Speed Settings menu options. Right: ISO Speed Range setting screen, used to set the Minimum and Maximum ISO settings that you will be able to select when shooting. The "Auto Range" sub-menu is similar to this ISO Speed Range sub-menu, and applies when using Auto ISO rather than manually selecting an ISO setting.

Auto range is similar, except that it is for when the camera is selecting the ISO setting itself, when you are using Auto ISO or when using Safety Shift (with certain exceptions as described in the Safety Shift menu item a little later). It is limited at 100 minimum to 102,400 maximum ISO. There are certain situations where the camera will over-ride these settings, such as during flash photography, so when using a flash you will still need to keep your eye on the exposure settings.

Minimum shutter speed is used in conjunction with Auto ISO, and is to ensure that the shutter speed does not become too slow for handholding. This will only apply when the camera is set for Auto ISO and you are working in Av or P Shooting Mode. (In Tv, Fv, and M modes it does not apply because then you are setting the shutter speed.) You can set this for *Auto*, and then the camera will select an appropriate minimum shutter speed based on the lens and focal length being used. It will follow the "1 / lens focal length" rule, for example if you are using a 200mm focal length, the camera will select 1/200 as the minimum shutter speed.

If you select the *Auto* option for the *Minimum Shutter Speed* setting, then you can also adjust this setting if you want the camera to use a faster or slower *Auto* minimum shutter speed (see *Figure 3.15 - left*). Use the top Main Dial to change this setting, where each increment will adjust by one stop (1 EV). Since the high-resolution sensor of the EOS R6 Mark II will more readily show blur from slight camera movement, you may wish to increase this (*Faster*) by a stop or two, so that the camera uses a faster minimum shutter speed when making use of this feature.

If you choose the *Manual* setting for *Minimum Shutter Speed*, set this for the slowest setting you believe you can hand-hold and still obtain a sharp image (see

Figure 3.15 - right). Since you may not always be paying attention to the shutter speed that the camera selects during a shooting situation, you may want to limit this to perhaps 1/125, if you are able to carefully handhold the camera at a slower speed. The camera may still drop to a slower shutter speed if it reaches the maximum ISO setting that you just set above, and the exposure still cannot be obtained. Note that this minimum shutter speed setting will not be applicable when using a flash.

ISO settings and Auto ISO will be further explained in the Exposure, Part 1 chapter.

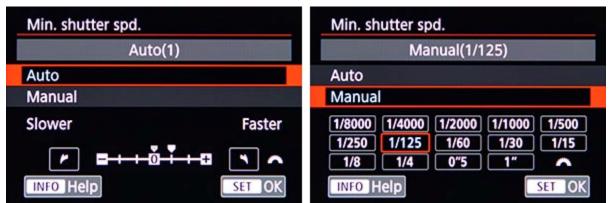


Figure 3.15 - Minimum Shutter Speed menu item, to specify the slowest shutter speed that the camera will select when making use of Auto ISO. The Auto setting which can be further adjusted (left), and the Manual setting where you choose a specific minimum shutter speed (right).

HDR Shooting HDR PQ

HDR PQ can be used to capture images with increased brightness, wider tonal range, and wider color gamut, when viewed on HDR-compatible devices (see *Figure 3.16 - left*). HDR PQ is typically used for capturing video, but can be used for still images as well. You can capture HDR PQ images in either the RAW format or the HEIF format, but not in JPEG. As you will see, the HDR PQ images can have an unusual "washed-out" or grey or overexposed appearance when viewed on the camera screen (see *Figure 3.16 - right*).

When this setting is enabled, you will not be able to use the expanded ISO speeds, and the *Display Performance* item of the *Shooting 9 Menu* will not be available and will be automatically set to *Smooth*. If you wish to playback these HDR images from the camera to an external device, set the *HDMI HDR Output* item of the *Playback 7 Menu* to *On*. It is recommended that you enable *Highlight Tone Priority* in the Photo Shooting 2 Menu when capturing HDR PQ images. There is a checkbox in that menu item to automatically enable *Highlight Tone Priority* with HDR PQ.

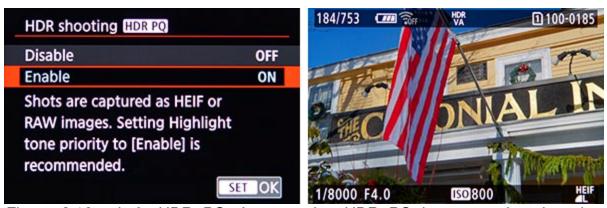


Figure 3.16 - Left: HDR PQ, for capturing HDR PQ images to be viewed on a compatible device. Right: HDR PQ images will be displayed with a unique tonal appearance on the camera monitor.

HDR Mode

While it is possible to shoot numerous individual exposures at various exposure levels and combine them into a high dynamic range (HDR) image using post-processing software, you can also do this to some degree using this in-camera HDR Mode (see *Figure 3.17 - left*). With this mode, three images will be taken - one at the "correct" exposure, one under exposed, and one over exposed.

When enabling HDR Mode Shooting, select *Moving subjects* or *Dynamic range* (see *Figure 3.17 - right*). The *Moving subjects* option is a new feature of the EOS R6 Mark II, which enables you to take HDR images of moving subject. The camera will automatically take several shots at a range of exposures, and combine them together for the final image. The *Dynamic range* option is used to take HDR images of still subjects. After selecting this setting, you will then select the *Dynamic range* of the 3 images that are captured and combined. The options include either automatic (*Auto*), or user-defined exposure value increments of +/-1 EV to +/-3 EV.

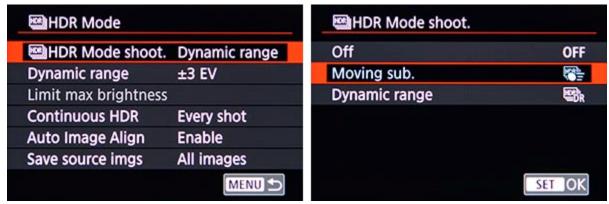


Figure 3.17 - Left: HDR Mode menu for setting up the in-camera HDR Shooting Mode feature. Right: The HDR Mode Shooting options, including the new Moving Subject option.

Enable the previous menu item, *HDR Shooting HDR PQ* if you wish to capture HDR PQ images, which are designed to display properly on HDR PQ compatible devices such as certain external video monitors. If HDR PQ is enabled in the previous menu item, you can access the *Limit max brightness* option of this HDR Mode menu item. Set this option for *Enable* if your monitor or device does not support displaying brightness over 1000 nits.

With the *Continuous HDR* option, you can select to take a single HDR series (1 shot only), or continue to take HDR shots until you disable the function (*Every shot*). You can then choose to use *Auto Image Align* to automatically line up the individual shots for the final image, such as if you are not using a tripod. This will slightly crop the final image to accommodate the image alignment. As with Multiple Exposure, you can choose to save all the source frames from the process (*All images*), or just the final image (*HDR img only*). The images will then be combined and processed in-camera to create an HDR image. Note that these HDR images cannot be captured in RAW format. If HDR PQ is enabled in the previous menu item, they will be saved in the HEIF format, and if HDR PQ is disabled, they will be saved as JPEG images.

You will not be able to use the expanded ISO speeds, Auto Exposure Bracketing, or flash when HDR is enabled. This built-in HDR Mode will be more fully described in the **HDR Shooting Mode** section of Chapter 12.

Auto Lighting Optimizer

This feature automatically adjusts contrast and brightness of an image and helps to maintain detail in both the shadows and highlights of images with a wide contrast range (ones containing very bright areas and very dark areas, such as a backlit subject). Auto Lighting Optimizer (ALO) works by applying a tone curve to the images as they are being processed in-camera, similar to an Adjustment Curve you might apply in Photoshop. If you are shooting scenes with a wide range of contrast, you may want to experiment with this setting and its different levels (*Low, Standard, High*) to see if it gives you desirable results (see *Figure 3.18 - left*). However, if you prefer full control of your camera and your exposures through metering, reading the Histogram, and making use of Exposure Compensation (all explained in detail throughout this text), you may want to *Disable* this setting so that the camera isn't doing something with your exposures without you having control over it.

If you enable ALO, I suggest that you check the *Disabled in M or B modes* box (by pressing the Info Button) to disable this feature when working in Manual (M) or Bulb (B) Shooting Mode so that the camera doesn't override your careful settings. You will typically also want to disable it when using a flash, otherwise it may drive you crazy wondering why the image results don't seem to be responding to your settings changes - because the ALO is compensating for your changes.

Note that if Highlight Tone Priority is enabled (the next item in this *Shooting 2 Menu*), then ALO will be automatically disabled. It will also be temporarily disabled when using

the HDR and Multiple Exposures modes. Otherwise, if you find that the ALO settings are not available, remember that you likely checked the *Disabled in M or B modes* box. **Auto Lighting Optimizer and Highlight Tone Priority** are further discussed later in their own section of Chapter 13.

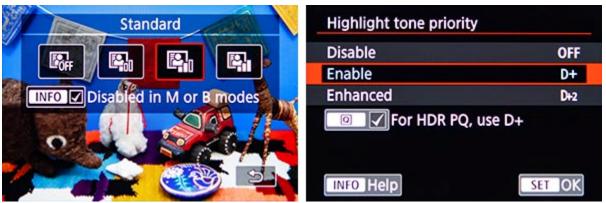


Figure 3.18 - Left: Auto Lighting Optimizer menu, including the checkbox to disable ALO in Manual (M) or Bulb (B) Shooting Modes. Right: Highlight Tone Priority menu options, including the Enhanced setting.

Highlight Tone Priority

This setting improves the details seen in highlights and helps prevent them from being overexposed or "blown-out" (see Figure 3.18 - right). It shifts the dynamic range of the image to the brighter end, meaning the camera captures more information of the brighter tones at the expense of information about the darker tones. So you may sacrifice some detail in the shadows, and digital noise may be increased. It is worth using in certain situations, such as when photographing a wedding dress or something very bright or a "high key" image where you don't wish to lose the subtle details. (A "high key" image is one with only very light tones and with low contrast, typically with a very light, brightly lit subject and a white background. The interest often lies in the subtle gradations of light grey tones, though they can also contain color. You can find countless examples by searching for "high key image" online.) The EOS R6 Mark II offers the D+ setting, as well as the Enhanced D+2 setting, which will reduce overexposed highlights to an even greater amount, though it may cause some results that appear over-processed. Highlight Tone Priority is also available for movie shooting. Canon suggest using Highlight Tone Priority along with HDR PQ, and includes the For HDR PQ, use D+ option checkbox on this menu screen so that this feature will be automatically enabled when using HDR PQ.

You typically don't want this feature on all the time. I suggest putting it in **My Menu** so you remember it is there to use if you sometimes need it. Note that when you enable this, the camera will disable Auto Lighting Optimizer (ALO), will limit your minimum ISO setting to 200, and the expanded ISO speeds cannot be used. Also note that Highlight Tone Priority affects JPEG and RAW image files while ALO affects only JPEGs. When Highlight Tone Priority is enabled, a *D+* or *D+2* icon will appear on the displays. Both

Auto Lighting Optimizer and Highlight Tone Priority will be discussed in Chapter 13 of this text.

3.3c Photo Shooting 3 Menu



Figure 3.19 - Photo Shooting 3 Menu.

Anti-Flicker Shooting

When shooting images under certain types of lighting, such as fluorescent lights or lighting used at some stadiums and arenas, you may sometimes capture a dark or uneven exposure, and uneven coloration across the image. This is more noticeable when taking a series of continuous images and using a fast shutter speed. This effect can be caused by the fast shutter speed capturing the image just as the lights are at a certain part of their cycle. Our eyes don't necessarily detect this type of flickering, so the EOS R6 Mark II includes this Anti-Flicker Shooting feature which detects the flickering of the lights and captures the image at the more optimal moments (see *Figure 3.20 - left*).

I recommend that you enable this feature when shooting under stadium lighting, or with fluorescent lighting such as in an office setting if you encounter an issue. It is recommended that you use this feature with Tv or M shooting mode so that you can set a specific shutter speed, to avoid any color tone variation that may be caused by varying shutter speeds when using P, Av, or Fv Shooting Modes with flickering lights. This feature may cause a slight delay in the shutter release, or a slightly slower and irregular continuous shooting speed. Canon warns that it may not work well under all conditions and that it is designed only for 100 Hz and 120 Hz cycles.

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 R6 Mark II 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 1 or swipe the touch screen to navigate to previous or subsequent images, and use the Magnify Button and then the top-rear Quick Control Dial 2 to have a closer look. You can also use the top-rear Quick Control Dial 2 by itself, to zoom. Use the top Main Dial for image jump, to jump 10 images at a time. You can also change this to jump by other criteria such as rating, protected images, or movies only. You can also customize the Rate Button + Quick Control Dial 1 to jump images by a desired criteria.





Figure 6.1 - Image Playback - Left: Press the Playback Button to view the captured images. Right: Press the Magnify Button and turn the top Main Dial to zoom-in and inspect the details and the focus of an image.

As first introduced on the 5D Mark III, the EOS R6 Mark II 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 rear Quick Control Dial 2 to zoom in or out on an image (see *Figure 6.1*). Use the *Magnification* item of the *Playback 5 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 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.

When viewing a magnified image, use the Multi-Controller or touch screen to pan around the image, and use the rear Quick Control Dial 1 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 top rear Quick Control Dial 2 to zoom-out to an index screen with multiple (4, 9, 36, or 100) image thumbnails (see *Figure 6.2*). Use the rear Quick Control Dial 1 to navigate the thumbnails, and the top Main Dial to scroll screen by screen. Press the Magnify Button again to return to zoom. Recall that you used the *Image Jump* item of the *Playback 6 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.

You can turn on the *Playback grid* display in the *Playback 7 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.



Figure 6.3 - Using the Playback Grid 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 vertical or horizontal grid. Right, the 3x3 grid, showing that the card is aligned horizontally.

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 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).





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

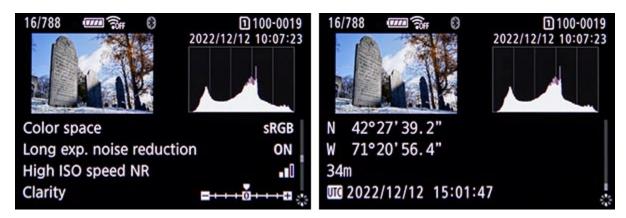


Figure 6.6 - Image Playback - Shooting Information Display, with additional camera settings (left), and with GPS information from a connected smartphone (right).

Remember that the *Playback information display* item of the *Playback 7 Menu* can be used to choose which information is displayed on each of the playback screens, each time you press the Info Button or press up and down with the Multi-Controller.

Highlight Alert - If you have enabled the *Highlight Alert* item of the *Playback 7 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 the white house 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 7 Menu*, then as you view your images on the displays, the AF Point or Points that were used for autofocusing 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 headlight of the car in *Figure 6.4*.

Playback Quick Control Screen - When viewing a single image, press the Q Button to access the Playback Quick Control screen, which will allow you to quickly access *Protect, Rotate, Rating, Creative Filters, Resize, Cropping, Highlight Alert, Image Jump, Image Search, Send Image to Smartphone, and RAW Image Processing (see Figures 6.8 and 6.9). You can access these items by pressing up and down on the Multi-Controller or using the rear Quick Control Dial 1 to navigate to the icon, then turning one of the top dials or pressing left and right with the Multi-Controller 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 Rating 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 R6 Mark II 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

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 - 1956 Maserati A6G/54 2000 Coupe Series III By Frua - Larz Anderson Auto Museum, Brookline, Massachusetts - Canon EOS R6 Mark II, Shutter speed 1/200, Aperture f/4.0, ISO 6400.

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 R6 Mark II 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, birds, and horses, and motorsport cars and motorcycles, aircraft, and trains 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 R6 Mark II 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 R6 Mark II 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 R6 Mark II 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 R6 Mark II, you can continue to take a 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 R6 Mark II, 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 R6 Mark II, 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 using Servo AF and Whole Area 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* autofocusing 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 miscalibration. 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 R6 Mark II (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 24.2 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 R6 Mark II 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 R6 Mark II, 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 autofocusing, 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 you intended subject, so that the camera knows which subject to detect, focus on, and follow.



Figure 7.3 - Canon EOS R6 Mark II 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. 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.

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 functions accessed with this button. 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 functions (see Figure 7.5 - right).



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 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.

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 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 7.6 - 1955 Chevrolet Bel Air - Lions Annual Car Show, Waltham, Massachusetts - Simulated view of EOS R6 Mark II Viewfinder, using 1-Point AF to position a single AF Point, and locate it on a detail of the car. 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 screen motions, *Active touch area*, to dictate the portion of the rear Screen that can be

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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 R7 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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