Understanding the Canon EOS R7

A fast-track guide for learning how to use your camera's controls and features to improve your images

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2024 UPDATE
FIRMWARE 1.4.0

About this book

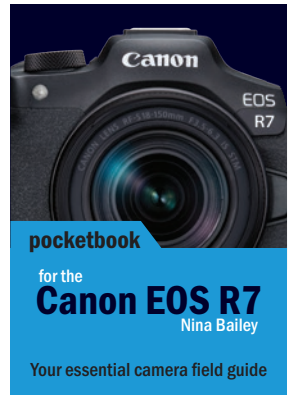
The EOS R7 introduces a camera with an advanced specification coupled with the smaller APS-C or 1.6x crop sensor, the first in the EOS R range. The camera features an extremely good autofocus system based upon the one found in the EOS R3 – this can detect and track subjects around the whole of the viewfinder area. The R7 also features the Subject to detect options which can detect people, animals and vehicles and makes tackling a wide range of action subjects easy. It's revolutionised the way we can shoot.

Although the camera is aimed at the experienced photographer, it also features a range of 13 special scene modes designed to allow newcomers to photography to shoot more specific subjects. It also introduces for the first time a panoramic shot option – this enables panoramic images to be captured and merged in-camera with no post-production needed. The camera also features a range of 10 creative filter modes allowing additional creativity. These modes are in addition to the standard creative modes of P, Fv, Tv, Av, M, B and three custom modes.

However, to get the very best from a model such as this you need to configure it in the correct way so as to get a feature to work, as a number of options need to be set up correctly. You also need learn to trust some of its new and innovative features and let them do what they are designed to do. This book also starts off by explaining some of the new 'mirrorless' specific features which those transferring from DSLR models need to get to grips with.

This guide is designed to present the information in a much more accessible and detailed way than is found in the manual and is liberally illustrated throughout with screen images and also images to show what the features actually do to the images that you take.

There is also a companion Pocketbook available to provide a small A6 size guide that is easy to take with you when shooting, to help you remember how to set the key features on the camera. This is available from the EOS magazine shop. Click here to find out more about the range of Pocketbooks or go to www.eos-magazine.com/shop and click on the links for Pocketbooks.



Written, designed and images by Nina Bailey
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About

Nina started her ca… working in the reta… sector of the photographic industry, before moving to Canon UK where she had a successful nine years looking after training, exhibitions and marketing both in the UK and in Europe.

This period at Canon gave Nina an unrivalled technical knowledge of not only the Canon EOS system, but also how to develop and enhance the skills of photographers of all ability levels.

In 1999 Nina left Canon to start her own business, which specialised in delivering training for amateur photographers. As well as developing a broad programme of events and courses through which to teach photographers, Nina continued to shoot professionally.

Nina started taking images when she was very young and is still a very keen photographer both professionally and personally. Nina loves travel, landscape and wildlife photography, and specialises in comparison shots which are used to illustrate the many books that she writes. Her images are also used to produce training materials for EOS Training Academy and to illustrate articles in EOS magazine, the long-running dedicated magazine for Canon enthusiast photographers.

Firmware updates are a fact of life for any recent Canon EOS model. Firmware allows Canon to add functionality to the camera as well as fixing any bugs within the software. It is very important on the EOS R-series models to keep your firmware up to date, especially if buying new lenses which may not work correctly unless the camera is running the latest version of the firmware. When you download the firmware there is a PDF supplied with full instructions as to how to update the firmware which should be followed to the letter and I also give more information about firmware within the setup menu section of the book. Listed below are the improvements made by both firmware 1.3.0, 1.3.1 and 1.4.0

Firmware Version 1.4.0 incorporates the following enhancements and fixes:

1. Adds support for RF-S10-18mm F4.5-6.3 IS STM lens.
2. Fixes minor issues.

Changes in version 1.3.0

1. Improves the stability of the touch operation control when the [Touch control] is set to [Sensitive].

Changes in version 1.3.1

1. Adds support for Speedlite EL-5.*

*The automatic light intensity adjustment of the AF-assist beam is not supported.

2. Adds support for the RF-S55-210mm F5-7.1 IS STM.
3. Fixes minor issues.

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The search options are slightly less obvious on a PC than on a Mac, but the same options are available. If you are not familiar with searching PDFs, click on the link below, which takes you to a couple of pages right at the end of the book, that will tell you how to search on your computer. There is a link provided at the bottom of the page that will bring you back to the index.

This is why we do not include an alphabetical index within the books, because it is far easier to search for the feature, than look it up in an index.

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NAVIGATING THIS BOOK

All of the menu items below are hyperlinked to the appropriate page – just tap on the item you want to go to that page. On each page the will return you back to this Return to contents page.

●If this is shown after the menu description it indicates that there has been extra information added compared to the last version of the book. This is t for those who had the last version to find the added content.

Introduction

The EOS R7 has been designed so that its controls are similar to the other EOS R-series models. However, there are a number of changes to the layout and certainly the camera features far fewer button controls than DSLR users will be used to.

Therefore for all photographers it is important to become familiar with the new layout on the camera to get the very best out of it.

This model moves the Quick control dial which is found on all of the enthusiast and advance models in the EOS range to a new position surrounding the multi controller, higher up on the rear of the camera. This places it in a very good position to allow you to change settings while shooting, as it falls naturally under the thumb when holding the camera.

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The EOS R7 is designed to be an equivalent to the EOS 7D Mark II/ R range. The camera inherits many of its autofocus features from the p making it ideal for photographers who want to shoot wildlife and actio two cameras are so similar that the autofocus menu only has two very sma comparing the two cameras.

The plus side of this, is it does make the EOS R7 a very capable camera when it comes t and action photography. However, it does also mean that you are going to need a very g level of understanding of the main controls to get the camera to tackle the subjects you wa successfully. For those who were previously only used DSLR models, the camera is going to take a bit of getting used to and new ways of setting it up and working are going to be inevitable. In fact one of the important things to remember about some of these new models is that they do not work at all well, if you are simply trying to replicate the way you shot with your previous DSLR model.

The camera has been designed to offer a large amount of customisation allowing photographers to get it to work exactly the way they need to, for their style of photography. However, just because it can be customised it does not mean it has to be customised. I rarely customise controls on my EOS cameras, as I find that as they come out of the box they are very usable and normally the customisations I use are to speed up the basic operation of the camera or to add a function onto a button I do not use that turns something on or off that's normally tucked away in the menu. On this model a number of the customisations I used to do are no longer needed either because the cameras now has those options as a default or the way that the new AF options work make it unnecessary. I would suggest waiting to do any customisations until you have got used to the camera and how its basic controls work and then customise the ones that you think you can improve on.

One of the things that makes its operations so different from the DSLRs, is that many of the buttons that photographers will have been familiar with on the enthusiast and professional DSLR models have been removed and replaced with other ways of setting those controls. If you look at the pictures of the back and top of the camera, you can see that there are a lot less buttons than we would normally expect to see and some of the controls that we use quite a lot have been moved to different places on the camera body, the Quick control dial and the Multi Controller being two of the key ones.

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About the comments boxes

Throughout the book you will find a number of grey comments boxes, where I may comment or further expand on the description of the feature. I may also explain a bit of the history or talk about where it is best used.

It also allows me to make comments based on my opinions about a feature. I come into contact with a lot of photographers, many of which are experiencing problems using their camera. It is surprising how much of the time the same feature crops up. Quite often the problems originate because the photographer is trying to use the camera exactly the same way as they use their old EOS model, rather than understanding that some of the ways of working need to change to get the very best out of these new models.

It is important to understand that one of the points of having these comment boxes is to make you think about how you're working. Just because you worked a specific way for the last 40 years, it doesn't mean that way of working is still the best way to capture the image today, especially on these very latest models.

In places within the book I will talk about how I set the camera up myself, that does not mean you have to work that way, it's simply explaining why I would use a specific feature. The way I work is not the only way to use the camera, you need to find your own way of working, that works for both you as the photographer and the way you like to shoot.

Ultimately it is the photographer who creates the image, the camera simply facilitates the capture of the image and the new automation being developed is designed to free up the photographer from some of the more basic and mundane controls. It allows them to concentrate much more on the creative side of photography. Canon increasingly are trying to produce focusing systems that can find, identify and follow the subject accurately around the frame without intervention from the photographer. Exposure and White balance systems have now been improved to the point where they rarely need to be overridden, ensuring much more accurate results and significantly reducing the need to shoot manually.

ABOUT MY "OPINIONS"

My opinions are exactly that, how I feel about things ar
I would make based upon things I have seen whilst training
years. If I make an observation about photographers in genera
based upon the things that I have observed and doesn't mean that
to all photographers, simply the ones I seem to encounter a lot! But I w
accept that it will not apply to all photographers.

I do sometimes find that common sense isn't very common, and it certainly can apply to many areas of life today. A good example is that I get photographers complaining that the batteries on a mirrorless body do not last as long as on a DSLR. There shouldn't be any great surprise as you are running an electronic viewfinder or the rear screen all the time. If you try and run a DSLR with the Live View permanently turned on, you will find the batteries last a far shorter time than they do on a mirrorless body. There is a very easy solution to batteries lasting less time, that is simply buy more batteries. I'm aware they're not the cheapest thing to buy, but compared to the cost of the camera body they are a very minimal cost and solve the problem of the battery not lasting a day.

When I go out for a day shooting I normally take four batteries for my EOS R5, which is going to be about the same amount needed on the R7 as it uses the same battery. I am fundamentally quite a lazy photographer, if the camera can automate part of the picture taking process for me, I am quite happy to let it get on and do it. I don't have a problem using technology to achieve the images I shoot and I am quite happy to accept that some of the time the camera manages some things better than I do. My laziness also extends to the amount of kit which I carry with me, I will select the lenses I need for that day and that is all I will take. If I'm going to shoot action I will quite simply take a camera body fitted with my RF 100-500mm f4.5-7.1L IS USM lens. In my pocket will be my spare batteries and possibly an Extender. I simply do not see the point of carrying a bag full of lenses that are not going to get used.

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Basic camera layout and operation

The layout on this camera body is similar to that which we have seen on the enthusiast range DSLR models, although there are some significant changes. Most of these have been brought about by the camera's small size, requiring some features to be relocated. The exposure mode dial is a good example of this, most commonly found located on the left hand side of the camera when looking from the back, this has needed to be moved to the right hand side of the body and this means that there is not a top LCD panel on this model.

However, this camera features touch controls and therefore very few functions are set using buttons on the camera body. Instead they are most commonly going to be set on the rear screen on the camera, which offers a choice of two different display options allowing you to set the most commonly used features.

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The EOS R7 features the IBIS system first appeared in 2020 and has been seen on all of the R-series models that have been launched since this time. This allows up to 7 stops of image stabilisation on this model, even on lenses that do not feature image stabilisation on the lens itself.

The camera is also designed to have a good level of weather and dust resistance, which is equivalent to the same level found on the EOS 90D which is specified by Canon as having a combination of sealing materials and high precision parts for a dust proof and drip proof design. However, it is important to understand that the dust and weather sealing on it is not as comprehensive as will be found on the higher level models such as the R6, R5 and R3 models. Although given that the cameras price is nearly £1000 less than the EOS R6, which is the cheapest of those models and features a 32 mega pixel sensor rather than a 20 mega pixel sensor, in my opinion this is to be expected. After all, as with many things in the modern day world you get what you pay for and this camera has been built to be affordable. If you heavily weather seal products they cease to be very affordable, due to the weather sealing and measures that are used.

The camera also has a new multifunction shoe which allows new accessories to be connected to the camera via the hot shoe style fitting. This model features the LP-E6NH battery as also found on the EOS R, R5 and R6 which is quoted as giving 620 shots with the viewfinder or 860 shots using the rear screen on power saving and 440 shots with the viewfinder and 760 shots with the rear screen using the smooth option. However, in my experience if the camera is being used for wildlife or action shooting, where you are shooting a lot of images continuously, it is not unusual to get significantly more shots from the battery that is actually quoted in the manual. I have regularly had over a couple of thousand shots when shooting action on the camera.

RF LENS MOUNT INDEX This is where you line up an RF or RF-S mount lens and then turn clockwise until it clicks to mount it. Notice the different shape from EF mount index (round red circle) and EF-S mount index (white square) which are only found on the front of the mount adapter as shown to the right. At the back of the mount adapter is the RF index to align with the mount on the body.

This body is designed to allow all of the RF lenses to be fitted to it, however there are also a range of RF-S lenses which are designed to be smaller and lighter which take advantage of the smaller APS-C sensor featured on this model. These lenses are also compatible with the full frame cameras but when fitted onto them will automatically enable the crop mode that they feature which reduces the total number of pixels that are being used.

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VIEWFINDER SENSOR The sensor that detects when your eye is to the viewfinder, when this is obstructed the rear screen will turn off.

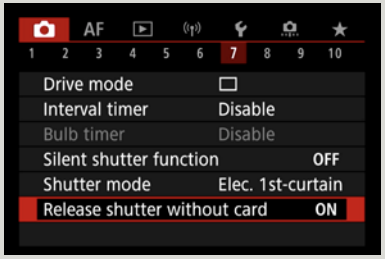
DIOPTRIC ADJUSTMENT A rotatable wheel to the side of the viewfinder where you can adjust the viewfinder sharpness to suit your eyesight.

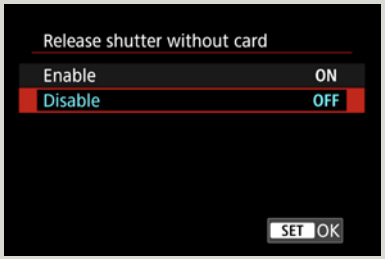
MENU BUTTON Press to access the camera's menu system where many options are set.

ERASE BUTTON Deletes image in playback.

PLAYBACK BUTTON Will show the most recently taken image; use the Quick control dial (see next page) to scroll.

REAR SCREEN Image can be viewed on here, screen can be flipped out for use at high and low angles. Can also be rotated inwards to store against camera for better protection.





HOW TO PREVENT SHOOTING WITHOUT CARD FITTED

As illogical as it may seem, as this camera comes out of the box, it is designed to allow you to shoot without any memory cards fitted. This is to allow the people who demonstrate the cameras in shops and exhibitions to demonstrate the camera without having to put cards in.

However over the years it has caught many photographers out, as the camera will allow you to shoot an image and it even displays the image on the rear of the camera, admittedly with a message saying no card in camera, before it simply discards the image, as there is no built-in memory at all on these models. On this model the option to turn this off has found its way back into the shoot 7 menu, which means it may be overlooked by a lot of photographers. If you go in and change this option to off, then if you try to take pictures without a card fitted the camera will refuse to let you fire the shutter and will give you a warning saying no card in any of the places that you can view the image. If you take the memory cards out of the camera to download using a card reader, it is remarkably easy to leave the camera with no memory card fitted. I have managed it on at least two occasions and I should know better! I now keep a small capacity memory card permanently in my camera bag that I regularly use, so that if it does happen to me I've still got a card I can use.

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QUICK CONTROL DIAL used for navigation in menus and changing of settings within Quick set menu. It also works to set exposure compensation when the camera is active in P, Tv and Av, plus it adjusts the aperture value when shooting manually. When setting functions on the Q screen it will adjust settings when a particular function is highlighted. Also changes the aperture in M mode.

MULTI CONTROLLER used for moving the AF points around and navigati… menus and moving around the Quick control screens button. On this model the n… controller allows direct moving of the AF points by default. To return the AF point or … the central position simply press the Multi controller straight in.

AF-ON BUTTON Pressing this activates the focusing and if held … is locked when shooting in One Shot AF. Can be held down to activ… focusing in Servo AF. Sometimes referred to as Back button focusing o… BBF for short.

AE LOCK BUTTON Press to lock the exposure. In Evaluative metering with One Shot AF, the exposure locks automatically at the same time as the focusing with a half-press of shutter but this can be used to lock Spot, Partial metering onto a specific subject.

AF POINT SELECTION BUTTON This allows selection of your chosen focusing method. Prompts are shown at the bottom of the screen.

MAGNIFY BUTTON Press during playback then use the Main dial to zoom in or out of an image

INFO BUTTON Toggles between displays when the camera is active. Five displays available, which are all enabled by default. One of the displays is the Q screen – this may be more familiar if you also use a Canon DSLR camera. Additionally, pressing the INFO button does as follows: when in the menu allows you to jump between the main menu tabs; brings up additional information and settings when it appears as a prompt on-screen; gives different information displays during playback.

Q BUTTON Pressing this will activate the Quick Set menu where the main settings are made. Can be done directly from the shooting screen or via the Black Q screen.

SET BUTTON Combined with the Q button on this model. Pressing this allows you to enter menus and will apply the currently selected setting. Can be customised to have a function in its own right.

CROSS KEYS Up, Down, Left and right buttons that allow navigation in menus and on some screens. These buttons are highly customisable and can allow features to be set directly from them if required.

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FOCAL PLANE MARK Shows the position of the image sensor. Your lens' minimum focusing distance is measured from here.

MOVIE SHOOTING BUTTON Starts and stops video recording when in Movie mode. If using Auto+ for stills photography, it will start shooting video in Auto+ Movie mode; if in any other stills mode it automatically starts shooting video using the Auto mode for movies.

SHUTTER BUTTON Half-pressure activates focusing and metering. Same half-press escapes from playback and menus.

M-FN BUTTON A multi-functional button brings up functions selected by the Quick Control D and the settings can then be changed with the Main Dial. Functions are ISO, drive, focusing mode, white balance and flash compensation.

MAIN DIAL Turn to adjust shutter speed or aperture within relevant shooting mode. In manual mode adjusts shutter speed. Can also change settings on Q screen.

ISO BUTTON Press and hold down and turn the main dial to set ISO.

ON/OFF/MOVIE SWITCH Camera ON/OFF switch and also allows the camera to be set into a specific movie mode.

EXPOSURE MODE DIAL Turn to set the required exposure mode. If set to A+, SCN or Creative filter options the menu system is restricted and will not show all options.

LOCK BUTTON pressing this can lock a number of controls on the camera. By default it locks the Quick control dial, as well as the control ring on RF lenses and on EF-EOS R control ring mount adapter. Can also be set to lock the multi controller, touch controls and main dial.

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RF lens controls (not all RF lenses have all of these controls)

CONTROL RING Can be programmed to change specific features. Default is to control aperture, but several other options are available.

MANUAL FOCUS RING Turn to manually focus once switched to MF.

ZOOM RING (Only on zoom lenses, i.e. with variable focal length.) Turn to zoom the lens closer or further away.

LENS ALIGNMENT MARK Line up with same mark on body to mount the lens. RF lenses – which natively fit the EOS R7 – have a red dash; EF and EF-S lenses – which can both be attached via Mount Adapter EF-EOS R – have a red dot and a white square respectively.

LOCK BUTTON (LENS) Locks the zoom in place to prevent the lens zooming when being carried. Must be unlocked to shoot. Not on all lenses.

MANUAL FOCUS RING turn to manually focus once switched to MF

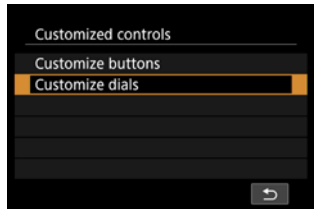
ZOOM RING turn to zoo… zoom is unlocked

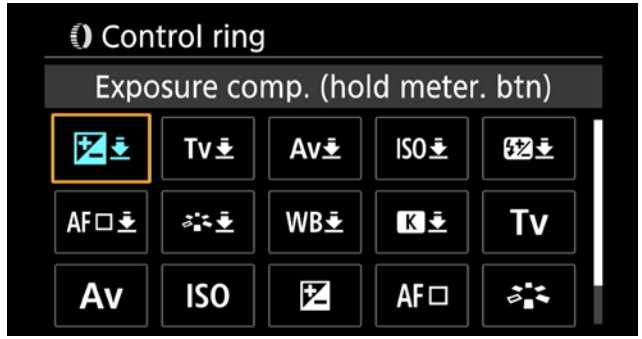
LOCK BUTTON Locks the z… place to prevent the lens zoom… when being carried. Must be unlo… to shoot. Not on all lenses

LENS ALIGNMENT MARK Line up with same mark on body to mount the lens.

AF/MF SWITCH on all RF lenses allows the lens to be set to AF for autofocus or MF for manual focus

CONTROL RING Can be programmed to change specific features. Default is to change aperture but can be programmed with a number of other options.





The control ring can be programmed from the black Q screen or from the camera's Custom function menu. There are a number of options that can be programmed onto it as can be seen from the screen bottom left. I look at these options in depth later in the book when I look at how to customise the camera. The options allow you to have the ring active all the time or to only activate when the shutter button is part depressed, indicated with a down arrow to the side.

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The RF-S lenses (shown left) have been designed especially for the cameras that feature the APS-C or 1.6 crop sensors. However, they are designed so that they can be fitted onto the full frame models. But, when they are fitted on these models, it will automatically enable the crop mode which will result in less pixels being captured.

These lenses are designed to be small light and very affordable and so they have a fairly limited range of controls on the lens. There is a zoom ring which is clearly marked along with a general purpose ring which can be switched in the AF 6 menu between working as a manual focus ring or a control ring. The lens itself has no other controls on it, not even a AF/MF switch. However on the front of the camera body there is now a switch provided that allows this to be done which is found on the EOS R7 and R10 bodies.

The options provided within the AF6 menu that allow the switching of the ring between a focus and a control ring will only be visible if one of these lenses is in use.

If one of these lenses are in use there will also be an additional command appear within the AF 1 menu which allows switching between autofocus and manual focus within that menu.

It looks likely that all RF-S lenses are going to have this simplified construction.

CHANGING LENSES ON THE EOS R7

When lenses are changed on the EOS R7 the body should be turned off, otherwise the sensor is exposed to dust/rain spots as there is no protection in front of it as there is on a DSLR, as can be seen in the top image where the sensor is clearly visible. Also note how close the sensor is to the lens opening compared to a normal DSLR model. When it is switched off the shutter closes and protects it as shown in the image to the right.

It only took me 3 weeks to discover this and get a significant mark (caused by a rain spot) on the sensor on my original EOS R. The image to the right is a section of the full image enlarged big enough to fill this page, so a significant size spot which had to be removed for me by Canon's service department.

If using the mount adapter it should be fitted to the EF or EF-S lens first and then the combination mounted onto the EOS R7 body. To remove the lens you take the lens complete with the mount adapter off and then disconnect the lens from the adapter. If using an Extender on an EF or RF lens the Extender is fitted to the lens first, then the adapter is added and then the combination is fitted onto the body.

It was when using the mount adapter that the body was left unprotected when mounted to a tripod and the spot of rain got in. You quickly run out of hands when trying to change a lens and mount adapter and handle all the caps.

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About the APS-C / 1.6x crop format

This is the first of the EOS R-series models that features the APS-C or 1.6x crop sensor, all the models up until this point have used full frame sensors. The other camera launched at the same time, the EOS R10, also uses the smaller sensor.

The difference in sensor size is important as it changes how much of the scene you see through the lens. Essentially, the smaller sensor captures a smaller portion of the scene than a full frame model would when taken from the same spot using the same focal length. However, that's all that changes.

We tend to refer to them as a crop sensor because they are effectively capturing a cropped area of the equivalent full frame sensor, which is illustrated to the right. On the full frame EOS R-series models, there is actually the option within the Aspect ratio settings to select a crop option and this will be produce the same area which is found on one of these models. However, the problem on a full frame camera in using this is it reduces significantly the number of pixels that you are shooting with. On the EOS R5 which starts of with a 45 MP sensor it drops down to just 17.3 MP when the crop mode is used.

So if we take a picture with the EOS R7 which has a 32 MP sensor, the image will have almost double the number of pixels that you would have compared to using the crop mode on the EOS R5. Therefore the images you capture are a better quality and you have a better ability to fill the frame.

There are both advantages and drawbacks to each sensor size. Although the 1.6x crop is often referred to as the magnification factor, it is important to understand that it is technically just a cropped area. So, though a 18mm lens on an APS-C camera may fill the frame to the same degree as a 28mm lens on a full frame camera, all aspects of the lens remain the same – it's still a 18mm lens. So the depth-of-field and visual effect on the scene remains the same.

For many areas of photography which one of the two sensor sizes you use, can make very little difference. When shooting in urban areas it's important to understand that you will need lenses which have a shorter focal length if you use the models with the APS-C sensor. That is why Canon are producing some RF-S lenses for this model as they have focal lengths that suit this format far better for general shooting.

The greatest benefit using the smaller sensor size comes when shooting wildlife images, where lenses will give you a greater reach because of the smaller sensor size. For example if shooting with a 400mm

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