

Understanding the EOS 90D

Especially written for **Canon EOS** users

A fast track guide to understanding how to use the EOS 90D's key controls and functions

Contents include:

- Camera layout
- Exposure modes
- AF controls
- Key camera overrides
- Menu options in-depth
- Customisations
- Custom functions



Written by Nina Bailey

About this book

The EOS 90D is an enthusiast model, designed to offer high performance autofocus, at 10 FPS. It is packed with advanced features that allow you to capture a very wide range of subjects. There are also a whole host of creative features allowing you to create special effects and therefore be less reliant on post production.

I have historically produced two separate books, when covering the models in the EOS range. However, what I am finding is there is a significant amount of repetition needed to ensure that someone only getting one of the books has all the relevant information they need to operate the camera. So with smart devices now having more storage and download speeds getting faster all the time I have combined what was two volumes into a single book, which does allow me to provide better navigation around the book using hyper links.

It is designed to present the information in a much more accessible 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-shop.com and click on the links for books.

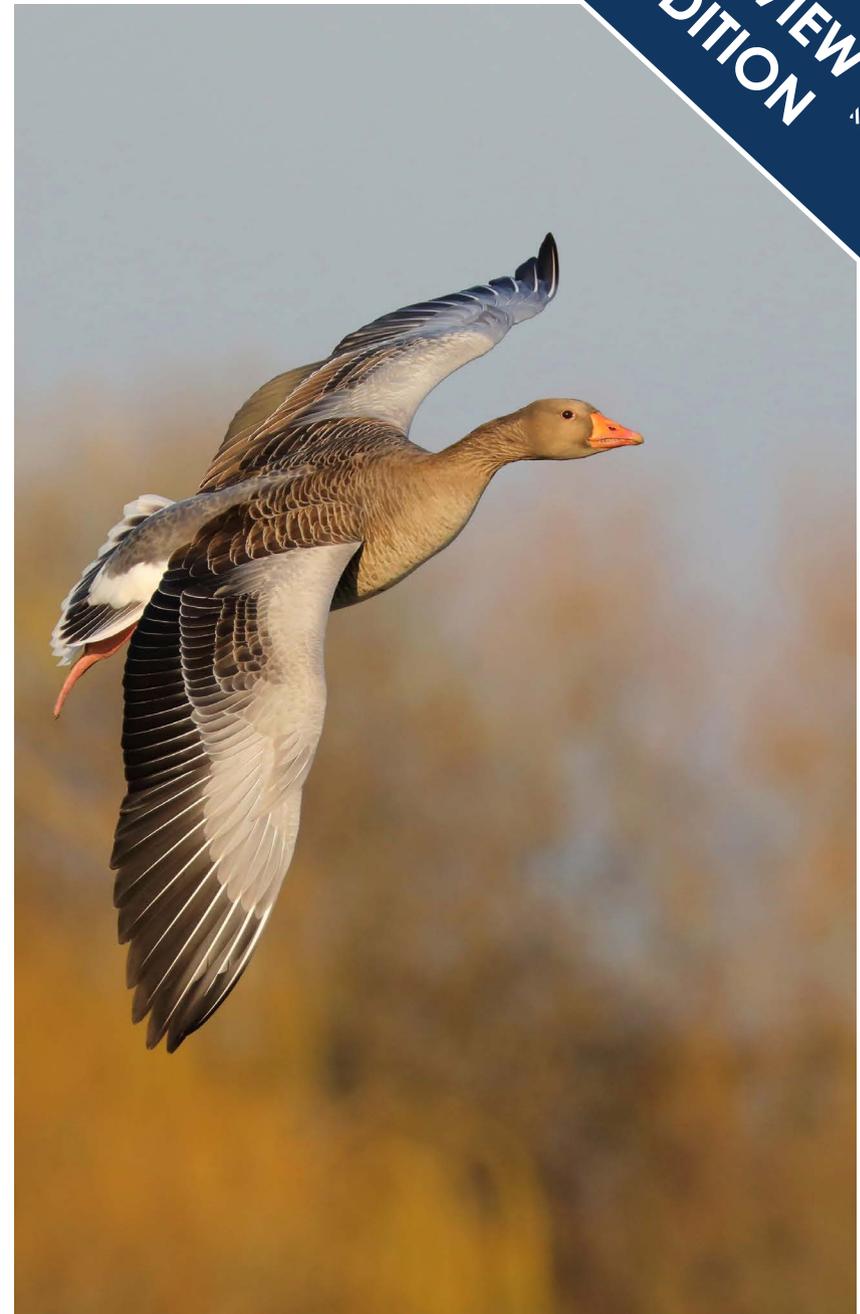
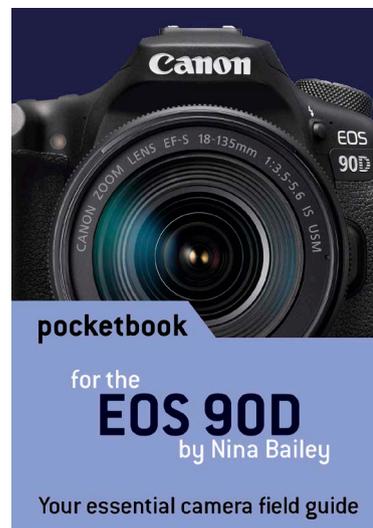
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**PREVIEW
EDITION**

About the author

PREVIEW
EDITION



Some of the test images shot on the EOS 90D by my colleague at EOS Training Academy, Brian Hall whilst testing the 90D whilst on safari in the Masai mara in Kenya showing the great images that can be achieved.



Nina started her own business in 1999, concentrating on training for amateur photographers. As well as developing the online training academy and direct training of photographers, Nina is a prolific professional photographer producing images not only for the EOS Training Academy but for a variety of outside organisations. In 2014 Nina started producing her own range of ebooks (now over 50 titles) to bring photography training to an ever wider audience. In 2017 Nina also launched a range of printed compact pocket books (now over 25 titles) for the EOS range.

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 shoots to illustrate the many articles and books that she writes.

Contents

PREVIEW
EDITION

Basic Camera Layout	7	Additional options when shooting in Live View	59	Focusing modes - Live View	
About the EOS 90D	8	SCN mode usage - Portrait	60	Focusing methods - Live View	
About the layout	9	SCN mode usage - Smooth skin	61	Face detection+ tracking - Live View	
Camera layout	10	SCN mode usage - Groups	62	Face detection+tracking with eye detection	
New guided options on the EOS 90D	11	SCN mode usage - Landscape	63	Spot AF - Live View	
Using the Q button to set the camera's key functions	15	SCN mode usage - Sports	64	1 point AF - Live View	
		SCN mode usage - Kids	65	Zone AF - Live View	
Understanding EOS settings	16	SCN mode usage - Close up	66	Focusing mode - manual focusing - Live mode	111
Understanding EOS settings	17	SCN mode usage - Food	67	Focusing mode - manual focusing - MF Peaking - LV	112
The shutter button - an essential control	18	SCN mode usage - Candlelight	68		
The shutter button - exposure lock	19	SCN mode usage - Night Portrait	69	Playback Options / Menus	113
What ISO means and controls	20	SCN mode usage - Handheld Night Scene	70	Playback options and controls	114
Test the ISO on your camera	21	SCN mode usage - HDR backlight control	71	Playback 1 menu	115
What shutter speeds mean and control	23	Creative Filter mode	72	Protect images	115
What the aperture does and controls	24	Creative Filter mode examples	73	Rotate image	115
The exposure triangle	25	Creative modes	76	Erase images	115
Understanding the connections	26	Which mode is best	77	Print order	116
The exposure triangle - the settings we can use	27	P - Program mode	78	Photobook set up	116
The exposure triangle	28	How and when to use Program mode	79	Playback menu 2	117
Understanding the effect your lens has	29	Program Shift	79	Creative Filters	117
Lens jargon and terminology	30	Understanding when to use TV mode	80	Creative Assist	118
Explanation of sensor size	33	How to use TV mode	81	Create Album	118
		Understanding when to use AV mode	82	Cropping	119
Display options	34	How to use AV mode	83	Resize	120
Viewfinder information	35	M - Manual mode	84	Rating	120
Where things are set	36	How to get B - Bulb mode	86	Playback 3 menu	121
Shooting displays	37			Slide show	121
Understanding the Q screen display - guided	38	Auto focus system	87	Set Image Search Conditions	121
Understanding the Q screen display - Non guided	39	About focusing on the EOS 90D	88	Image Jump with main dial	121
Using the Q button to set the Live View functions	43	About the focusing - Viewfinder	89	Histogram Display	121
Rear Live View LCD display	44	Understanding the focusing system - viewfinder	90	AF Point Display	122
Understanding the Live View Q screen display	45	Reality check	90	View from last seen	122
Live View/movie displays	46	Focus lock - Viewfinder	91	How to see the image settings on your computer	123
Additional Live View/Movie display options	47	Focusing mode - One Shot AF - Viewfinder	92	Canon software that you need	124
Playback screen displays	48	Focusing mode - AI Servo AF - Viewfinder	93		
Using the Q button to set the playback functions	50	Focusing mode - AI Focus - Viewfinder	94	Understanding Key Overrides	125
The playback Q button options	51	Focusing point selection - Viewfinder	95	About the key overrides	126
		Manual selection - Viewfinder	96	Image quality and file formats	127
Understanding the exposure modes	52	Auto selection - Viewfinder	97	RAW vs JPEG shooting	129
Understanding the shooting modes	53	How focusing detects subjects - Viewfinder	98	New CR 3 RAW format	130
Auto plus or scene intelligent auto	54	Why the focusing sometimes fails - Viewfinder	99	How C RAW Works	131
Creative Assist	55	Focusing and Drive selection - Viewfinder	102	C RAW Testing	132
Scene or SCN modes	58	Setting AF options - Live View	103	File formats - JPEG	135

RAW vs JPEG - Which is best	137	Key settings summary	188	Dust Delete Data	
Why these controls are so important	138			Live View shoot	
Understanding Exposure Compensation	139	Image processing options	189		
AEB - Auto Exposure Bracketing	141	Highlight Tone Priority	190	The Set Up Menus	
Custom functions affecting bracketing and exposure	143	Long Exposure Noise reduction	192	Set up menus - Set up 1 menu	
AE Lock	144	Lens Aberration Corrections	194	Select folder	
Exposure options on the Q screen	145	DLO - Digital Lens Optimizations	195	File numbering	
About the EOS 90D's ISO range	146	About Peripheral Illumination Correction	196	Auto rotate	210
High ISO Noise Reduction	148	About Distortion Correction	198	Format card	210
High ISO Noise Reduction examples	149	About Diffraction Correction	199	Set up menus - Set up 2 menu	211
Multi Shot Noise Reduction	150			Auto power off	211
Multi Shot Noise Reduction examples	151	The Menu System	200	Disp. brightness	211
Camera overrides and RAW processing	152	Menu navigation	201	Screen OFF/ON button	211
About Picture Styles	153			Date/Time/Zone	211
Understanding what the Picture Style is controlling	155	The Shoot Menu	202	Language	211
Contrast	155	The shoot menus - Shoot 1	203	Set up menus - Set up 3 menu	212
Saturation	156	Image quality	203	Video system	212
Colour tone	157	Image review	203	Touch controls	212
Sharpening	158	Release Shutter Without Card	203	Beep	212
Comparing Picture Styles	159	Lens Aberration Correction	203	Battery info	212
Which to use?	161	Flash control	203	Recharge performance	212
Customising Picture Style options	162	E-TTL II Meter	203	Sensor cleaning	213
Why customise Picture Style options	163	Slow Syncro	204	Switch AF area selection button/AE Lock button	213
Monochrome Picture Style options	164	Built-in flash settings	204	Set up menu - Set up 4	214
Contrast	164	External flash function settings	205	HDMI resolution	214
Filters	165	External flash C.Fn settings	205	HDMI HDR output	214
Toning effect	166	The shoot menus - Shoot 2	206	Set up menu - Set up 5	214
White Balance system and overrides	167	Drive mode	206	C.Fn 1 exposure level increments	214
AWB options	168	The shoot menus - Shoot 3	206	C.Fn 2 ISO Expansion	214
White Balance - WB preset options	169	Expo.Comp AEB	206	C.Fn 3 Safety Shift	215
Custom White Balance	172	ISO speed settings	206	C.Fn 4 Exposure Comp. Auto cancel	215
White Balance Shift	174	Auto Lighting Optimizer	206	C.Fn 5 Mirror Lockup	215
White Balance Bracketing	175	Highlight Tone Priority	206	C.Fn 6 Warnings in viewfinder	216
Auto Lighting Optimizer	176	Metering mode	206	C.Fn 7 Shutter button/AE Lock button	216
Metering - measuring the light	178	The shoot menus - Shoot 4	207	C.Fn 8 Assign Set button	217
Metering - its connection to focusing	179	White Balance	207	C.Fn 9 Disp button function	217
Understanding metering	180	Custom White Balance	207	C.Fn 10 LCD display when power on	218
Evaluative metering	182	WB Shift/Bkt	207	C.Fn 11 Retract lens when power off	218
Understanding Partial metering	184	Color Space	207	Cleaning settings	218
Understanding Spot metering	184	Picture Style	207	Copyright information	219
Understanding Centerweighted metering	185	The shoot menus - Shoot 5	208	Manual/software URL	219
Drive settings	186	Long Exposure Noise reduction	208	Certification logo display	219
Aspect ratio settings	187	High ISO speed Noise Reduction	208	Firmware	219

Contents

Firmware updating	220
The My Menu Options	221
The My Menu options	222
Wi-Fi settings	224
Introduction to Wi-Fi functions	225
Connection to a smart phone - Bluetooth connection	226
About Canon camera connect app	227
Connection to a computer	229
About Wi-Fi options	231
Basic Movie shooting	232
Basic Movie shooting	233
Movie Q screen options	235
Movie Creative Filter options	236
Movie shoot 1 menu	238
Movie rec size	238
Digital zoom	238
Sound recording	238
Lens Aberration Correction	238
Movie shoot 2 menu	239
Time Lapse movie	239
Remote control	239
Video Snapshot	239
Movie shoot 3 menu	240
Movie ISO speed settings	240
Auto Slow Shutter	240
Metering Timer	240
HDMI Info Display	240
Shoot 5 Movie Menu	241
Movie Servo AF	241
Movie Summary	241
Using the built in flash	242
Understanding using flash	243
Operating the flash	244
What subjects to shoot with flash	246
How to use flash light - flash only	247
How to use flash light - fill in flash	248
Changes in operation	249
Other produces and services	250



PREVIEW
EDITION

PREVIEW
EDITION



Basic camera layout

About the EOS 90D

The EOS 90D is a very versatile model as its an easy camera to learn about photography on, yet its got enough sophisticated features to satisfy the most demanding of amateur photographers.

Some of the fully automated modes give you some control over how the image is going to look and this is an excellent way to start to understand what photography with a digital EOS is all about, which is creativity. This is the ability to control how the finished image looks, something that many compacts and phone cameras give you little control over at the time of shooting.

There is enough control in the creative modes to cope with the demands of the different ways of shooting range from offering complete manual control to some very sophisticated semi automatic ways of operation.

Photography has always had a steep learning curve, and in this modern digital age this has become steeper, as there are now far more controls on the camera. This is why I have tried to break the book into sections that allow you to get some great results and build your confidence, before tackling the areas that are by nature more technically challenging.

I always try and teach photography in a very modern way, starting off by taking images using the basic modes and building confidence that you can get great images without needing to take control of everything on the camera. Then, as time progresses and you start to shoot more challenging areas, it becomes time to start to use the camera on modes with more controls, where more understanding is needed.



Far too often I come across photographers who are the verge of giving up photography as they have been told to shoot manually because a photographer, whose techniques are well out of date, has told them that its the only way to shoot.

It's far from the truth as most of the images you will see in this book are shot on one of the camera's automatic or semi automatic modes. A handful will be shot manually as in those situations it may be the only way to get consistent results, but those

occasions are few and far between. I originally learnt on a fully manual camera, but today choose not to shoot that way, as most of the time the camera makes the same decisions as I would and usually a lot quicker.

The automation on the camera works incredibly well, providing you understand what it is doing. The art is using the right mode at the right time. The key to using the camera, is to understand it fully, and simply pick the right setting at the right time.

About the layout

The EOS 90D's layout shares a lot in common with the high end models, such as the 5 and 7 series models in the range. The exposure mode dial over on the left hand side of the camera. This makes way for top display panel, and quick access buttons on the top of the camera. The exposure mode dial has a lock button in the middle, which prevents accidental moving of the dial.

On the rear of the camera is featured a quick control dial, This allows instant access to exposure compensation and also aids in navigating the menus. The multi controller inside the quick control dial has been retained, that's an additional multi controller above this has been added. This traditional multi-controller is much better placed to quickly access and change the position of the focusing points. The function of the two multi controllers is exactly the same.

As you would expect this model features touch control. This can be the quickest and easiest way to navigate many of the controls on the rear the camera. The rear screen is articulated and can be folded out or indeed flipped entirely round,for low angle or selfie shooting.

This camera has been significantly upgraded from its predecessor the EOS 80D, With crosstalk to focus, better metering system and a much higher frames per second rate.

An interesting development on this model is the addition of features will be seeing on the mirrorless models for sometime. This includes a much morph a sophisticated focusing system within my view,Enhanced movie functions, the ability to focus in lower light with live view and focus bracketing when shooting live view.

An interesting change of this model is that the flash no longer pops up automatically, even within the fully automatic modes. Instead it will indicate that it is needed in the photographer has to press the flash button to allow it to pop up.



Camera layout

MODE DIAL Where you choose the shooting mode. Press lock-release in centre to turn dial.

ON/OFF SWITCH Can be left on during a shoot as the camera goes onto standby after one minute (wake up with the shutter button).

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

INFO BUTTON Toggles between display options when the camera is active, and gives you more information when within the menus.

Tip

I see so many photographers struggling with the basic operation of the camera as they do not understand the correct controls to use to operate some of the key settings.

The buttons on this and the next page are really key to setting your camera up quickly to cope with the various photographic situations that you may encounter. The other key controls to learn, especially what the icons mean is the Q screen as shown below that I look at later in the next chapter.



Q SCREEN Pressing the Q button brings up the Q or quick set screen where most of the main camera settings can be set.

ERASE BUTTON Deletes image in playback.

PLAYBACK BUTTON Will show the last taken image; use the Quick Control Dial to scroll.

DIOPTRIC ADJUSTMENT adjust viewfinder to your eye (minor correction).

LIVE VIEW BUTTON Display real-time image.

MOVIE SWITCH Rotate dial on the outside of Live View button to shoot in Movie mode.

MULTI CONTROLLER 1 Works like a joystick – moveable in eight directions for navigation in menus and Q screen.

Q BUTTON Pressing this will activate the Q screen where the main settings are made.

QUICK CONTROL DIAL A rotatable dial for use within the menu system and Q screen for navigation.

MULTI CONTROLLER 2 Works like a joystick – moveable in eight directions for navigation in menus and Q screen.

SET BUTTON This is used within the menu system to apply settings; within the Q screen it allows you to see a

PREVIEW EDITION

Camera layout

SHUTTER BUTTON Half-press activates focusing and metering. Same half-press will also escape from playback mode and from within menus.



AF AREA SELECTION BUTTON This is how the focusing areas are selected once the AF point selection button is pressed. If you have set the Q screen to display all the time the camera is active then the options can be viewed on the rear of the camera. If not they are set in the viewfinder.

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

FUNCTION BUTTONS Allows individual functions to be changed on top LCD screen. Options are for AF, Drive, ISO, Metering changed by pressing and turning main dial. There is also a light button which illuminates LCD panel.

AE LOCK BUTTON (*) / AF POINT SELECTION BUTTON See right.



AF-ON BUTTON activates the focusing (like the shutter button). This is used for focusing when shooting Servo AF is often referred to as button focusing.

(1) AE LOCK BUTTON (*) Press to lock the exposure. In evaluative metering with One Shot AF the exposure locks automatically on half pressure of shutter button. This separates out their operation. **(2) REDUCE** The same button allows you to zoom out.

(1) AF POINT SELECTION BUTTON Press to change the focusing points or areas through the viewfinder. **(2) MAGNIFY** The same button allows you to zoom in on part of an image.

Tip

This model allows a number of buttons to be programmed for different or additional functions – this is normally done using the access button on the Q screen for the custom controls as shown to the right. I look at the custom controls later in book.

Some custom buttons are fairly safe to customize as they have no function other than for navigation purposes. Others have their own function and if changes that function can disappear from the camera which can be a problem. A case in point is the AE Lock button.



PREVIEW EDITION



Q screen

The Q button allows all the main functions on the camera to be accessed from the Q screen. The Q screen only appears like this if the camera is set to Creative modes. The screen at the bottom shows the more restricted overrides available when working within the Basic zone modes. That's P, TV, AV, M, B or C1-2 modes. In the 90D. If you are in the Auto +, or the SCN modes the display will be different, but there are less options available but all modes now have some degree of overrides. When you press the Q button on the rear of the camera, or tap the Q at the bottom left of the screen, the screen appears with a highlighted box. In the example left, the ISO is highlighted, top right. I have given the manual navigation options below but on this model the touch controls are by far the easiest to operate.

To navigate around the screen, the touch controls or the Multi controllers are used. Once the item is highlighted then you set the feature using the main dial on the top, or for most controls the Quick control dial on the rear of the camera also works. To see what options you have press the Q button. Most options then are set using the Multi controllers or the touch controls. On some features the quick control dial may also operate some options. To get out of the setting screen either wait a few seconds, or touch the shutter button which will return the camera to its normal shooting operation.

I will look in more depth at the Q button and what it does and sets a little bit later in the book.

INFO BUTTON OPTIONS

The Q screen stays on normally at all times. If you press the DISP button on the rear of the camera the display will scroll through the available options showing either a blank screen, the cameras level or a screen that looks like the Q screen but with nothing highlighted. You then can press Q or tap the Q bottom right hand corner to activate the screen to set things. I normally leave the Q screen showing at all times as it provides a quick way to see how the camera is set up and only takes a small amount of extra power which providing you have a spare battery should not pose a problem.

If you want to escape from any screen or menu - it is actually very simple - press the shutter button halfway and you will be back to normal shooting operation.



Basic mode Q screen, showing the more restricted range of options that are available to set. Brightness is the same as exposure compensation on the Creative modes.

PREVIEW
EDITION



Understanding EOS Settings

Understanding EOS Settings

PREVIEW EDITION

The EOS 90D can be very automated. However, to make the most of the camera you really need to get away from its fully automatic settings.

Even within the fully automatic modes on this model you have some control and so it's important to understand some of the terms that are commonly used within photography and what they actually mean.

This section of the book is designed to give you a basic grounding in a lot of the terms that I am going to use throughout the book.



The way the camera works and how much you need to understand to get it to do what you want will depend on the mode that you are shooting in. I will look in depth at the modes in a couple of chapters time. However, it is almost impossible to look at any of the camera settings without talking about some of the things controlled within the modes.

Fundamentally, the exposure modes all do the same thing - they control how the three values that have to go together to get the exposure of the image correct are set. These are often referred to as the exposure triangle. The things I'm referring to are the ISO, aperture, and shutter speed.

So in order to understand the modes, it is crucial that you understand in-depth what part the ISO, aperture, and shutter speed play within taking an image.

Although a lot of photographers understand the terms, they far less often understand in depth what part they play within photography.

Even fewer photographers seem to understand the correct combination of the settings that can be used successfully under varying light levels.

Over the next few pages I will briefly explain what these three key controls do and how they affect the images that you are taking.

I will also look at a few other things that do have an effect on the images that you take and from the experience I have gained training are things that a lot of photographers fail to really understand.

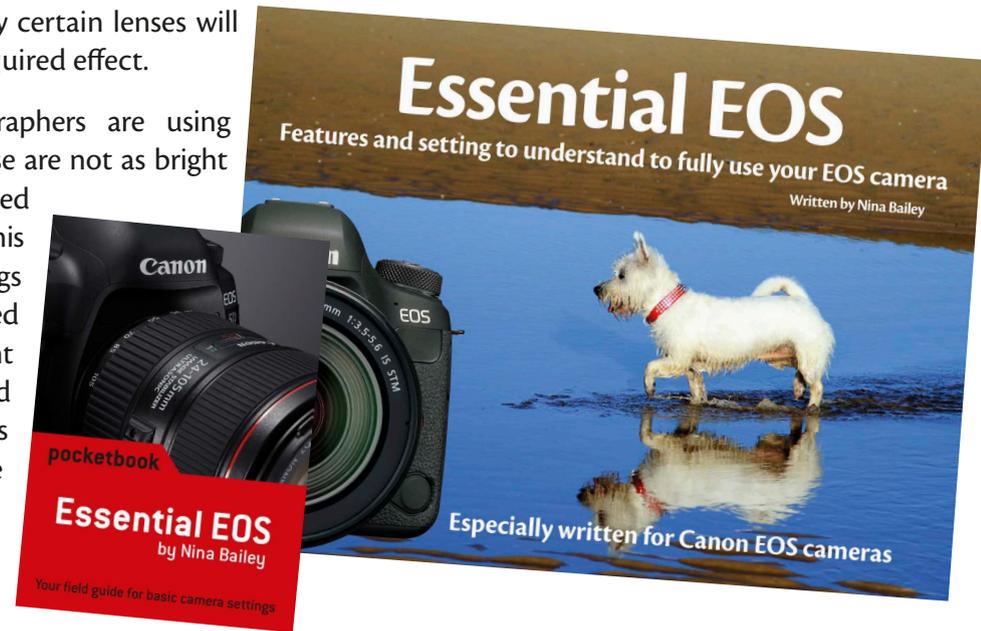
I am also going to take a look at the role lenses play in the way an image looks as even to talk about the correct use of the SCN modes on the camera it is important to understand why certain lenses will need to be used to get the required effect.

Generally today all photographers are using zoom lenses and some of these are not as bright as we would experienced back in the days of film. This means that higher ISO settings sometimes need to be used to compensate for less light entering the camera and producing blurred images through camera shake, as the shutter speeds used are not high enough for the light levels.

Although today the majority image stabilisation built into the. to respect the normal handholding. shutter speeds that allow us to safely ha. lenses.

I am only including this as a very short section due to restrictions of space, and of course a number of photographers will be familiar with these basics.

For those that are very new to photography, or have switched to the EOS 90D from a compact or mobile phone, my e-book Essential EOS, or its compact printed version Essential EOS will provide a good grounding of all the basic information about EOS cameras and the settings featured on them that you need to know to make the most of your camera.



The shutter button - an essential control

The shutter button on the EOS 90D and indeed all EOS models, features a two-stage operation. The first half pressure wakes the camera up and turns on both the focusing and the metering on the camera.

If the camera is set to One Shot AF and the metering is on its default Evaluative mode, then the camera will focus, meter the subject and then lock both the focusing and metering. This allows you to use a control called Focus Lock which puts you firmly in control of where the camera focuses and exposes.

Understanding Focus Lock

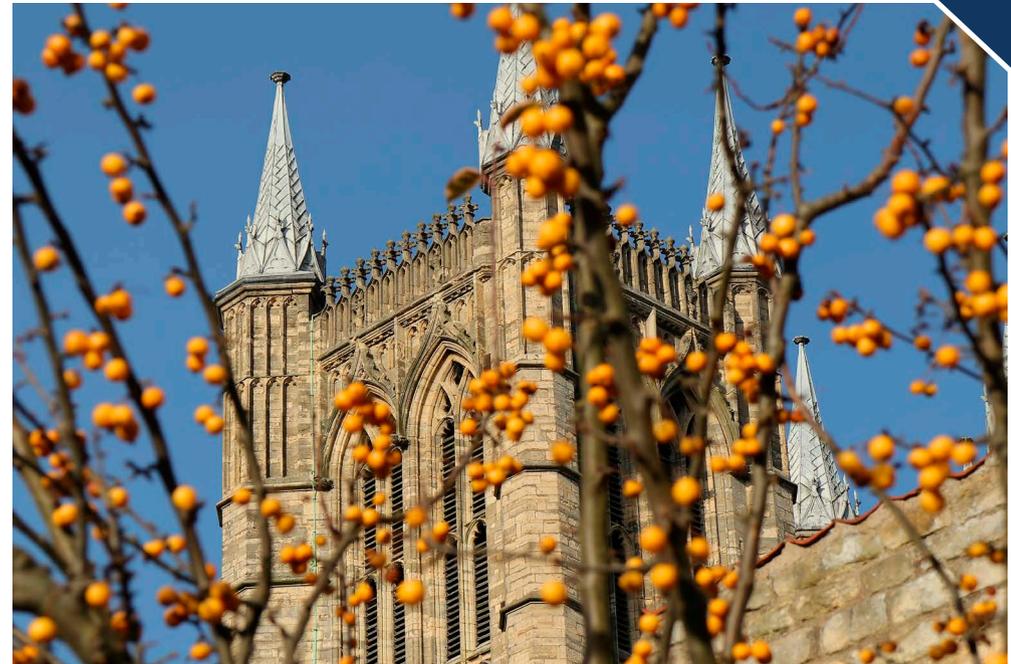
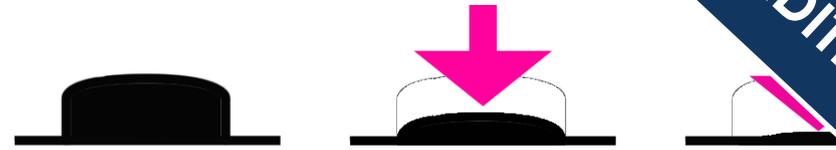
Focus Lock is simply pressing the shutter button onto its first stage. Assuming you have just the central focus point active, this enables you to point the central focusing point at the subject you want to focus on and focus it there.

The first illustration to the top left is the shutter button at rest, when there is no pressure on it.

Focus Lock can be used with all the different ways that the focusing can be set up, however, it is most commonly used in conjunction with a single focusing point, which is most commonly located in the centre of the frame. Once the focusing is locked, which happens automatically in the default One Shot AF mode when you take the shutter button onto its half pressure, illustrated by the centre illustration top, you then keep the shutter button on its first stage until you have moved the camera, to now give you the composition you want in the viewfinder.

This is the normal way to get the camera to focus where you want. You then continue to press the shutter button fully down until the image is taken as in the final illustration to the top right. There will be very little movement from the half pressure to taking the image, so there is less chance of camera shake occurring.

Focus Lock also allows you to focus on a part of the scene that will give the best exposure for the image or to avoid subjects that are giving a large exposure error in the image. For this to work to lock exposure, the subjects need to be at the same distance from the camera.



In the image above the most reliable way to focus is to use the centre focusing point and position on the cathedral and lock the focus. The image can then be reframed to its final composition and the shot taken, this ensures that the cathedral is sharp. If using more than 1 AF point this can be difficult as the camera will always try and focus on whatever is closest to the camera and in the example above it would be almost impossible to focus on the cathedral without using the focus lock.

The shutter button - Exposure Lock

PREVIEW EDITION

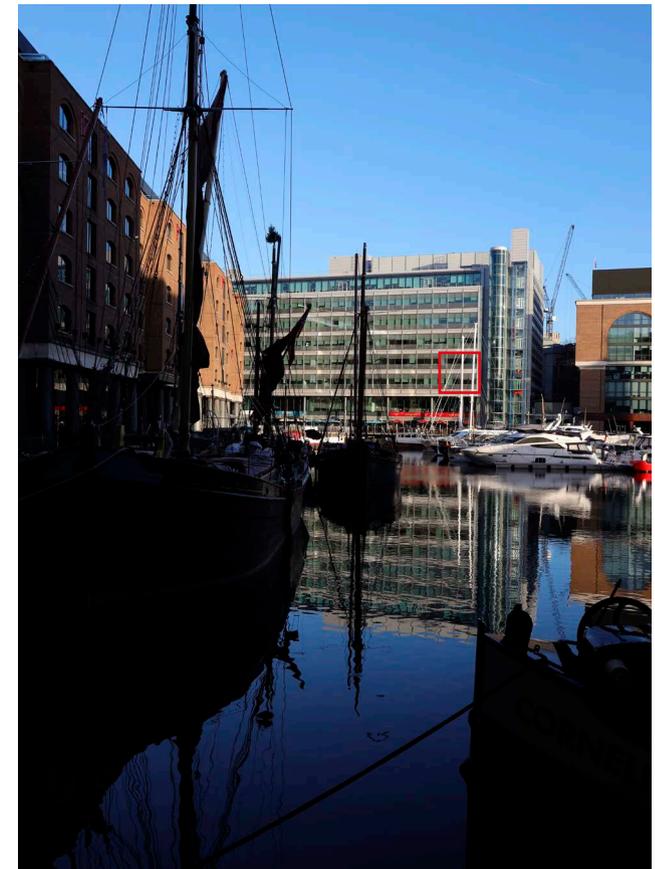
If the camera is set to its default One Shot AF and Evaluative metering as shown below, then when the



focus is locked the exposure is locked at the same time. This makes thinking about where you focus important especially if shooting a subject such as a sunset. We can see in the top pair of images how different the exposure can be depending where we focus within an image. Of course to hold the focusing in those positions we need to use the half pressure on the shutter button to lock the focus and then reframe as we looked at on the previous page.

This is one of the reasons why more experienced photographers tend to use a single focusing point and then focus and lock the focus and exposure rather than using the larger amount of focusing points which can focus on an inappropriate area such as in the left hand image in the pair of images to the right. The EOS cameras are programmed to always focus on the closest subject, hence focusing on the boat in the shade rather than the brighter area at the back (if you are wondering why, the selfie is to blame for this annoying set up!)

So thinking about where you focus and using the focusing /exposure lock option can often be all you need to use to get better exposures.



What ISO means and controls

ISO - Changes the sensitivity of the imaging sensor to light

ISO stands for international standards organisation, a meaningless term. If you were born before the 1970s then you may have come across this setting under a different name. In the UK it was commonly called ASA (American Standards Association) and in Germany and many of the eastern block countries it was called DIN (Deutsche Industrial Norms). The only standard used today is ISO, the difference is that today it is produced on the imaging sensor electronically and therefore can be varied frame by frame, whereas on film it was set by how the film was manufactured and so the film had a specific ISO speed.

The ISO allows you to shoot in a very wide range of lighting conditions. The ISO range on the EOS 90D goes from 100 ISO up to 25600 ISO and can also be expanded within in the custom function settings up to H 51200 ISO.

As the ISO goes higher there is a small drop in quality for each increment that it goes up. From 100-3200 there is no really visible effect on the image. Above this the image can start to look slightly grainy if you zoom into it, but the printed quality will still be very good. However, the quality at the high ISO settings far exceeds anything that was possible with film and so even the very highest settings can be used to give great images.

The camera offers a choice of the ISO being set manually or automatically in all but the Auto+, SCN and Creative Filter modes.



PREVIEW EDITION

Test ISO the on your camera

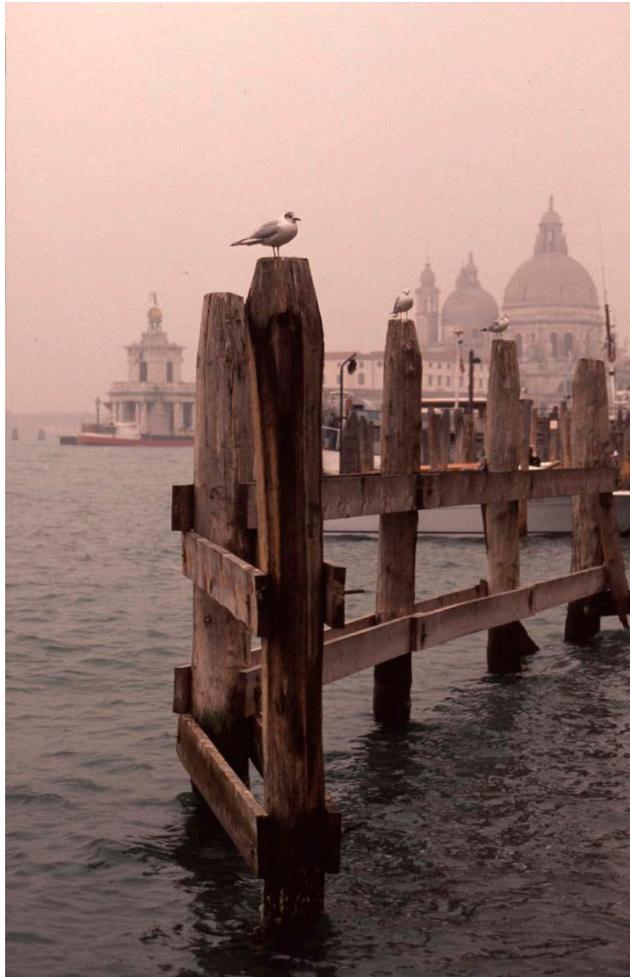
It is important when you get a new camera to test the ISO range and decide for yourself what ISO setting your happy to go up to. Far too often I come across photographers have been told by a friend or professional not to go above 400 ISO as the quality is rubbish.

If the quality was so poor Canon would not strive to keep increasing the highest ISO that the cameras can achieve.

I used film for over 30 years and I was very aware of the shortcomings that it had, even shooting at 400 ISO on slide film. However, things move on and since 2003 I have been using digital cameras exclusively. But when I first started using them the quality was actually better than film going right up to 800 ISO or higher.

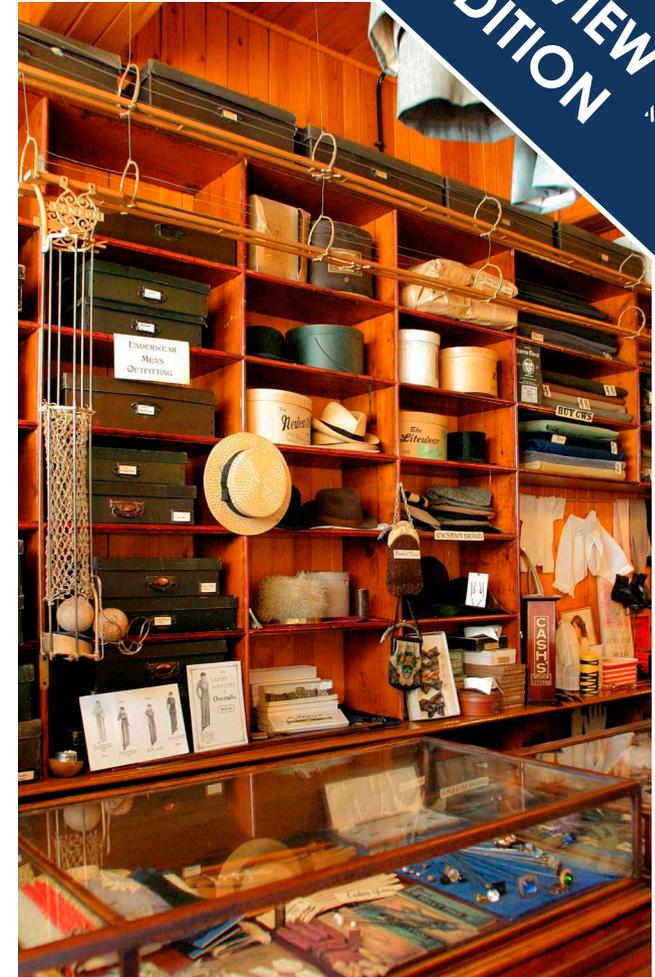
When I first started using digital cameras for various reasons I had access to a commercial scanning system and I decided to take advantage of it and scan my slide collection. I have quite a large collection and as such I thought it would be useful to have access to them to use in the future. Interestingly very few have ever been used since I went digital. The left-hand image of the two here was taken on 100 ISO Fuji Provia film, which I used to mostly use. The image to the right was taken on my first main digital camera, which was the Canon EOS 10D. I did use digital models before this but they were not my sole camera system as I was still using film.

The image on the right is one of the first images I took on my EOS 10D. It was taken at Beamish open air museum and was shot at 1600 ISO handheld. That was the highest ISO the camera had available without using the expanded setting. Although if you look closely there is a little bit of noise, the image



looks infinitely better than the image that has been scanned from a slide. So one of the things I found out very early on was that digital coped better in a much wider range of light levels than film did.

Something that I have always done is to test the range of ISO settings available on any new digital camera that I have. I have always been surprised just how high you can go while still getting acceptable



quality. True the quality drops when compared to what you get at 100 ISO.

However, if shooting at 100 ISO means that you have to take a tripod everywhere or else you're going to get blur caused by camera shake on some of the images you take, as the shutter speeds are too slow, then I would rather have a small amount of noise and a sharp image.

PREVIEW
EDITION

Test the ISO on your camera

So how do you test the ISO on your camera? It's actually a very simple process. You need a good sturdy tripod and somewhere to shoot that is relatively low light.

I normally use a church or cathedral for most of my testing, though in winter I also use night scenes or a studio set up as here. I set the camera up on a tripod and set a fixed aperture of normally f11 on AV mode. Take a test exposure and check that the exposure is absolutely precise, if not correct it using Exposure Compensation.

I then start on my lowest ISO and shoot each main ISO settings right up to the maximum expanded setting.

When I get back I have a look through the shots I have taken. I am looking for the one I am happy with the quality of so that I can set it as my maximum auto ISO. I then have a look at the other settings so I know what I could take the camera to manually should I be desperate to get a picture under any conditions.

I normally check the quality at my selected ISO by printing an image out to A3 size, the biggest I can print at home. I then normally print 2 stops higher to see how that looks. A reality of flat screen monitors is that they do show up noise far worse than the printed image and so I often find that I am happy to go to one stop or even two stops higher than what I'm happy with on-screen, in actual practical use.

Coming from a technical background I have always tested cameras myself rather than believe what someone else says. It's surprising how few photographers actually test the highest ISOs.



This image is produced from my test sequence. Yes the quality drops off as the ISO goes higher, but you may be quite pleasantly surprised how high you could shoot without the quality getting very poor. On this model I am happy to go up to 6400 ISO without thinking about it, and in lower light levels where I have to handhold 12800 ISO is acceptable.

PREVIEW
EDITION

What shutter speeds mean and control

PREVIEW EDITION

Shutter speed - changes how long the light enters the camera for

The shutter speed is one of two key controls that affects the brightness of the image that you take, better known as the exposure. The shutter speed has settings from 30 whole seconds up to 1/8000th, though on the fully automatic modes these extremes are seldom used.

The shutter speed has two things that it is used for within photography, the key one is for preventing blurring of the image. The camera will always try and achieve a shutter speed that will prevent camera shake occurring in Auto+ mode and most of the SCN modes. In the creative modes, P, TV, AV and M you need to ensure that the shutter speed is right for the subjects that you are shooting and to ensure that you can safely handhold the lens. Remember that for safe handholding you will need 1/focal length of the lens to be safe. On auto ISO in P and AV modes the camera also looks after the handholding shutter speed.

The shutter speed becomes important in action photography where taking the shutter speed up to its higher settings will freeze action, but this has to be done using the creative modes on the camera as the Auto+ mode and most SCN modes (except the Sports mode) will seldom set a shutter speed high enough to freeze action subjects successfully. On the Auto+ mode, the camera will think about handholding for you automatically which will prevent most camera shake occurring. Most of the time it does this by increasing the ISO setting it is using to give enough light for the shutter speed that is needed.



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