

Mastering the EOS 1DX Mark II

Especially written for
Canon EOS 1DX Mark II users

A simple, modern approach
to mastering the advanced
features on your Canon EOS
1DX Mark II camera which
allows you to take more
control, customise your
camera and take even better
images



Written by Nina Bailey

About this book

This book is designed for photographers who have used EOS cameras for a reasonable length of time and have recently upgraded or as a follow on volume from the Understanding your EOS 1DX Mark II which looks at the basic features and key operation of the camera.

This book sets out to look at the advanced features that are offered by the camera and teach you how to use the camera to its fullest extent. There is a small amount of overlap at the start of the book and within one or two chapters as it is important for all photographers to familiarise themselves with some of the basic controls the camera has. The book assumes a good understanding of the terms used within photography and that you will understand when and how the modes the camera offers are used.

The EOS 1DX Mark II sets new standards for focusing and overrides for a camera that is targeted at the professional market. The extensive range of features

presented allows you to cope with a very wide range of subjects and make it a camera that you will not easily outgrow.

However, as is so often the case with modern technology, this flexibility with the ways that it can be used inevitably increases the complexity of the camera. Therefore to use it to its fullest extent the photographer will require a good understanding of the features that it has and when they should be used.

With any of the EOS cameras, no photographer uses all the features, in fact most photographers will only ever use about 25% of the features their cameras have. However, each photographer will use different features and settings which are so often defined by the subjects that they photograph.

There is no one setting that works for every subject that you are likely to tackle, you get the best results by learning to use the settings that are relevant to

the images that you shoot.

This book sets out to give you the information you need to confidently use the features in your photography.



PREVIEW
EDITION

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About the author



Nina started her career in the retail sector of the photographic industry and then moved to Canon UK where she had a successful nine years looking after training, exhibitions and marketing both in the UK and also within Europe. This gave Nina an unrivalled knowledge not only of the Canon EOS system but also how to develop and enhance the skills of photographers of all ability levels.

Nina started her own business in 1999, concentrating on training for amateur photographers. She developed and produces content for new Online EOS Training Academy after also writing and producing a range of 23 training DVDs especially for Canon EOS photographers which the Online training academy now supersedes.

In 2015 EOS Training academy merged with EOS Magazine and Nina is Technical Editor of EOS Magazine and Principal Lecturer of EOS Training Academy. As technical editor Nina writes a lot of the magazines features and her images appear regularly in most issues.

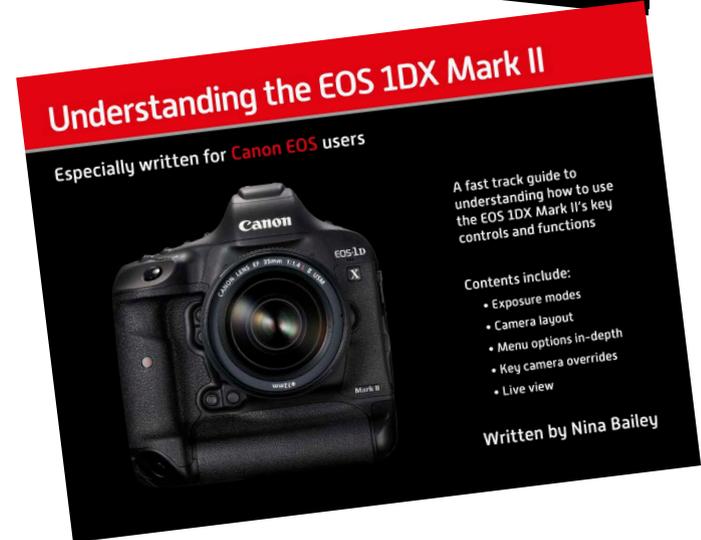
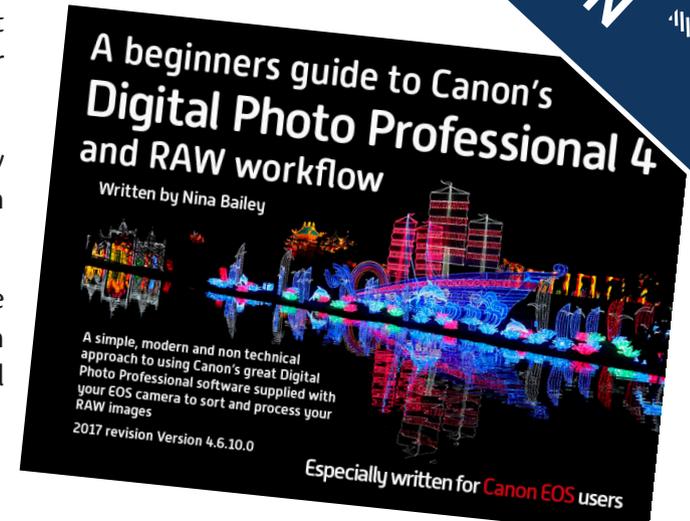
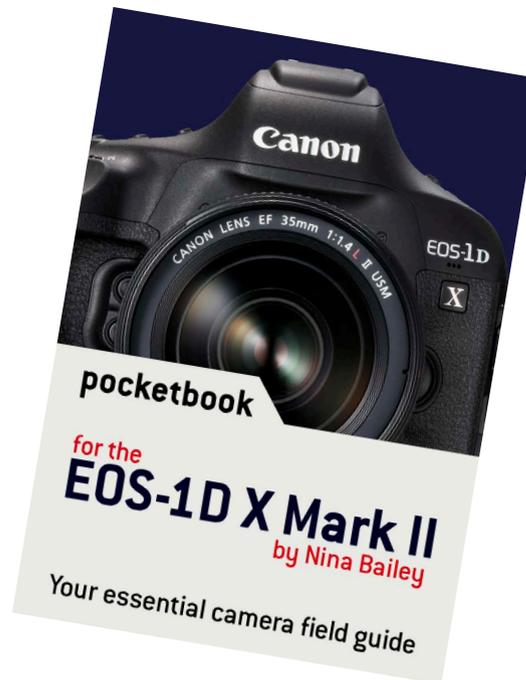
In 2014 Nina started producing her own range of ebooks to bring photography training to an ever wider audience and now has a range of over 30 books which are available as ebooks but can mostly also be produced as limited edition print copies via the EOS Magazine shop. There is also a best selling guide to Canons Digital Photo Professional software

available as an ebook.

In 2017 Nina also launched a range of Pocketbooks, designed to be taken out and about with you that guides you how to set the key features on your camera.

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 still shoots commercially though these days most of her time is spent writing and training.



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About The EOS 1DX Mark II

Camera navigation - Top

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The EOS 1DX Mark II does not have a mode dial. Instead the setting of the mode is done using the mode button. The function buttons and top LCD screen are used much more for setting options on this model than on any other EOS model. As this model is so different to the other models in the range I felt it was necessary to put these next few pages in both of the books for reference as much as anything else. Plus, of course not everyone buys the more basic book and an explanation of the names of the buttons on this model is essential.

MODE BUTTON Press and hold down and then turn main dial or quick control dial to scroll through modes. Modes can be seen on top LCD or rear Q screen display if set to display all the time.

DRIVE-AF BUTTON Press and hold down and then turn main dial to set the AF mode or quick control dial to set the drive mode. Options are seen on top LCD or rear Q screen display if set to display all the time.

MODE + DRIVE-AF BUTTON if both these are held down then AEB can be set on top LCD or rear Q screen display if set to display all the time.

FLASH COMPENSATION - METERING Holding this button down and turning the main dial on the top of the camera will set the metering whilst the Quick control dial on the rear allows flash compensation to be set.

All these can be set with main dial or Quick control dial either on top LCD or rear Q screen if active.

WB BUTTON This allows direct access to the white balance options.

EXPOSURE COMPENSATION BUTTON This allows direct access to the exposure compensation.

ISO BUTTON This allows direct access to the ISO settings.



SHUTTER BUTTON activates focusing and metering. Also half pressure will escape playback mode and from within menus.

M-FN BUTTON Can be used to set the focusing points once the AF point selection button has been pressed. It also is used to activate flash exposure lock if a flash unit is being used.

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

LIGHT BUTTON Lights up top and rear LCD screens to allowing viewing in dark conditions.

AF POINT SELECTION BUTTON Press to change the focusing points or areas through the viewfinder.

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 can separate out their operation.

AF-ON BUTTON When pressed this activates the focusing and metering (like the shutter button). The use of this for focusing when shooting in AI Servo AF is often referred to as back button focusing.



Camera navigation - Rear

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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 press to get more information when within the menu system.



QUALITY BUTTON press to change image quality options using LCD screen on rear. More options can be set in SHOOT1 menu.

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

MAGNIFY BUTTON Use to zoom in on just part of the image – to change the magnification turn the Main Dial.

ERASE BUTTON Deletes image in playback.

PROTECT BUTTON Applies a protect marker when pressed to an image. If held in for 2 seconds starts voice recording memo option.



LIVE VIEW BUTTON Display Live View button to shoot in Movie mode.

MOVIE SWITCH Rotate dial to activate Live View button to shoot in Movie mode.

MULTI CONTROLLER Works in conjunction with the 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.

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

QUICK CONTROL DIAL Use within the menu system and Q screen for navigation.

VERTICAL HOLDING CONTROLS Use within the menu system and Q screen for navigation.

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). Lock position locks the quick control dial to prevent accidental changing of options.

DIOPTRIC ADJUSTMENT Turn to adjust viewfinder to your eyesight (minor correction). Eyecup needs removing to access this.

EYEPIECE BLIND flick switch to right to close eyepiece blind if shooting on a tripod to prevent exposure errors through extraneous light entering through viewfinder/



Top LCD screen explained

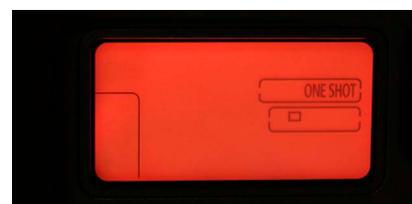
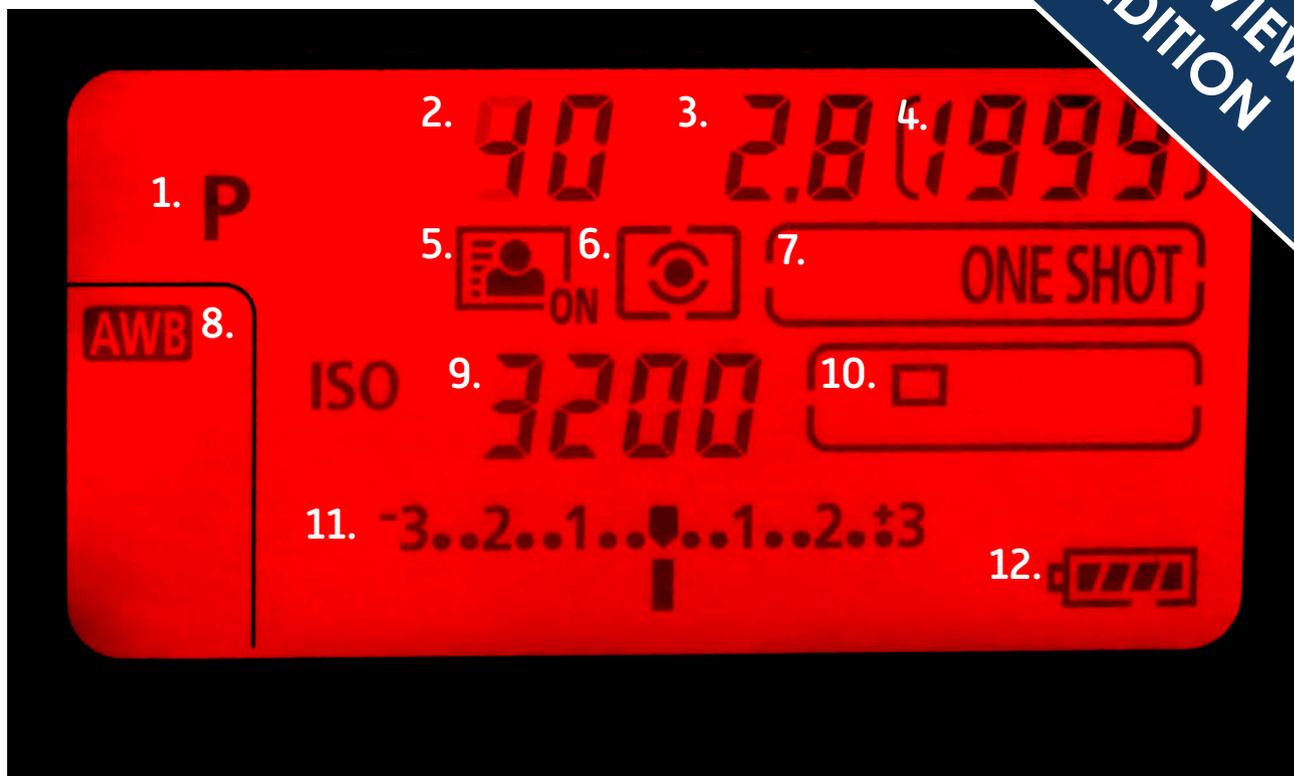
As I have mentioned the top screen on this model tends to be used a lot more than on any of the other models within the range due to the placement of the buttons on the camera. That said all of this information is available to set on the Q screen on the rear of the camera which I will look at shortly.

The image to the right was taken with the panel illuminated as it shows up the settings better than on its normal grey background, hence the orange colour. The button to light the panel up is found in front of the top left hand corner of this panel.

The settings are as follows:

1. Exposure mode
2. Shutter speed
3. Aperture
4. Shots remaining on card
5. Auto lighting optimizer status
6. Metering setting
7. Focusing mode
8. White balance settings
9. ISO setting
10. Drive mode setting
11. Exposure compensation and AEB settings
12. Battery status.

This is how the display looks when the shutter button has been part depressed and the camera is in its active state. If you press any of the setting buttons on the top of the camera the display will change and only display the option(s) about to be set. The illustrations at the bottom show the various setting screens.



Top row: Left to right - Mode setting, AF mode and Drive options, Metering and flash compensation
Bottom row: Left to right - Auto exposure bracketing (not currently set), White balance setting and ISO setting.

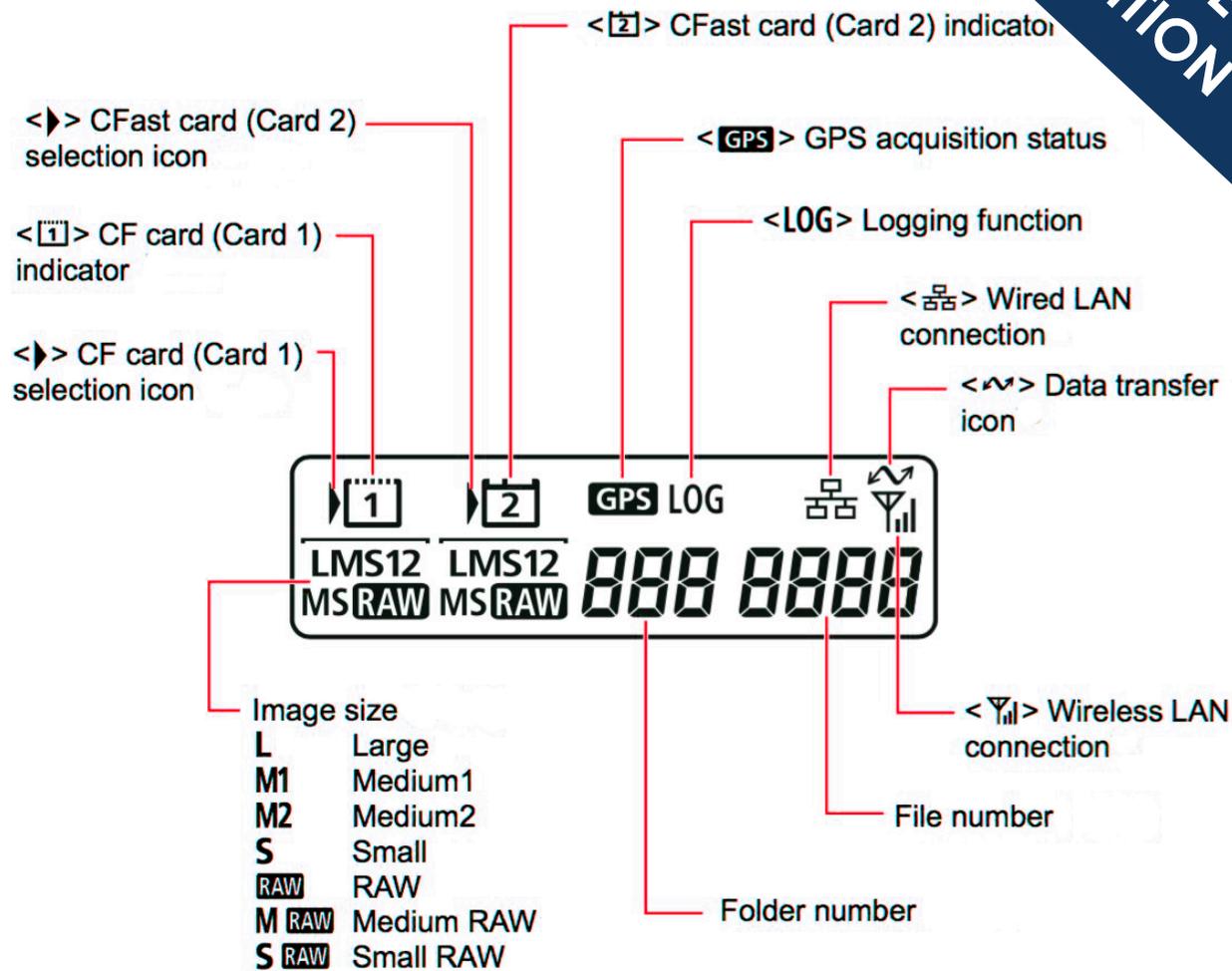
Rear LCD screen explained

There is also an LCD screen on the rear of the camera that displays a number of other options. The main function of this screen is to display the Image Quality settings on the camera, which are all shown on the left side of the display. There are options for all the JPEG and RAW sizes and these can be set up individually for the two cards types, compact flash and CFast cards that the camera takes. There are also additional quality options within the Shoot 1 menu which I will look at later in the book.

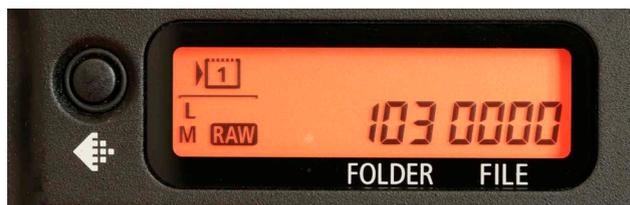
To set the size and type of the file you simply press the card/image size selection button to the left of the panel. It is possible to transfer the display for the file size and type to display on the large rear LCD monitor where the Q screen displays instead of the smaller screen if you prefer. Doing this makes the setting much more similar to all other recent EOS models. This is found within the C.Fn 5 menu where it is the last item in the menu. This will display on the larger rear monitor regardless of where it is set to display when the camera is on or not.

The rear display can also show the GPS status if the built in system is turned on and receiving as well as the wired LAN status if the camera is connected to the internet via a access point or wired LAN connection. These are all shown at the top right of the screen.

At the bottom right is the folder number that is currently in use, and the file number, these options are set up within the Set Up 1 menu that I will look at in the menu chapter. The bottom left image shows how the screen looks with a single card fitted whilst the bottom right image shows the image size and type options being set.



- Image size
- L** Large
- M1** Medium1
- M2** Medium2
- S** Small
- RAW** RAW
- M RAW** Medium RAW
- S RAW** Small RAW



INFO button display

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As the camera comes out of the box the rear LCD panel on the camera has no information on it. If you have been used to one of the more basic EOS models you may have been used to seeing a summary of settings displayed when the Q button is pressed, but of course the Q display disappears after only a few seconds. When the camera is switched on it is possible to bring up a variety of displays by simply pressing the INFO button on the rear of the camera.

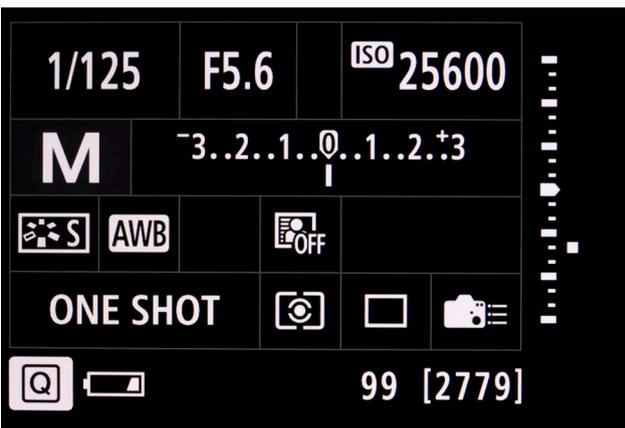
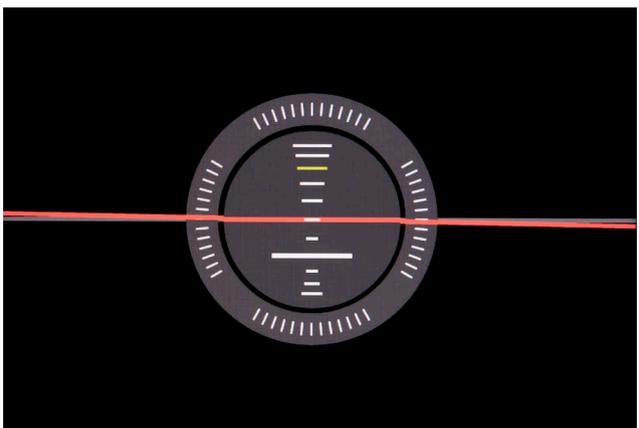
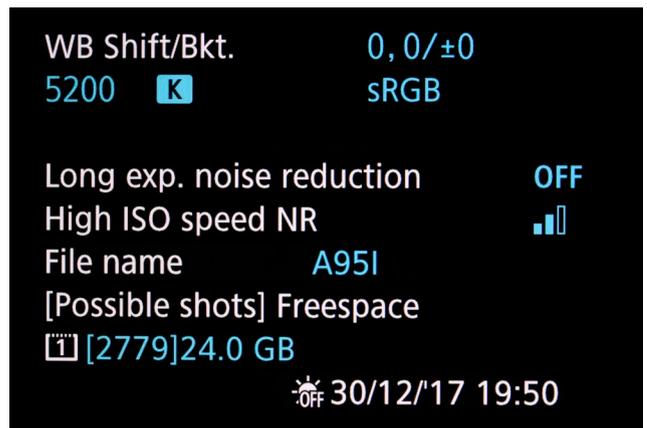
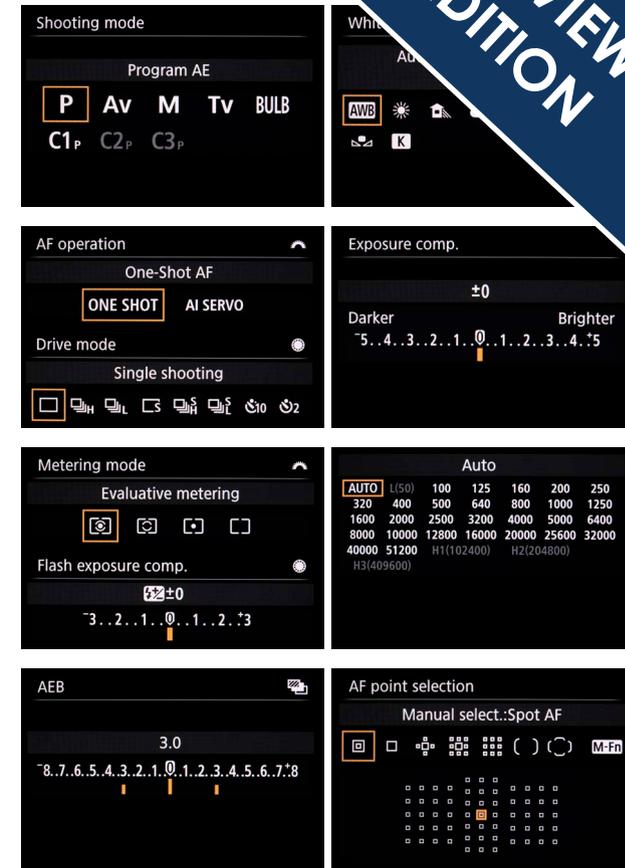
This allows a general information screen (bottom left), an electronic level (bottom centre) and the INFO screen (bottom right). When the INFO screen is being displayed pressing any of the buttons on the top of the camera or the focusing point selection button on the rear will bring up the displays as shown to the far right.

One advantage of this is that the rear screen is far easier to read for those with less than perfect eyesight. It does consume a small amount of extra power but it makes a negligible difference with the higher capacity battery used on this model.

Having this screen active all the time makes sense,



especially when you move onto shooting in the creative modes where you need to understand and check the current settings that are set up on the camera.



Understanding the Q screen display

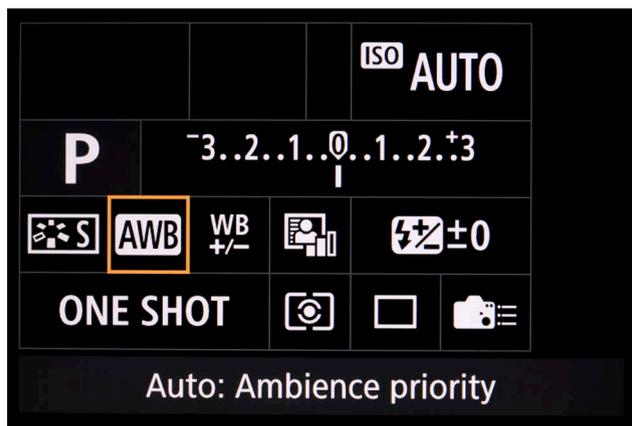
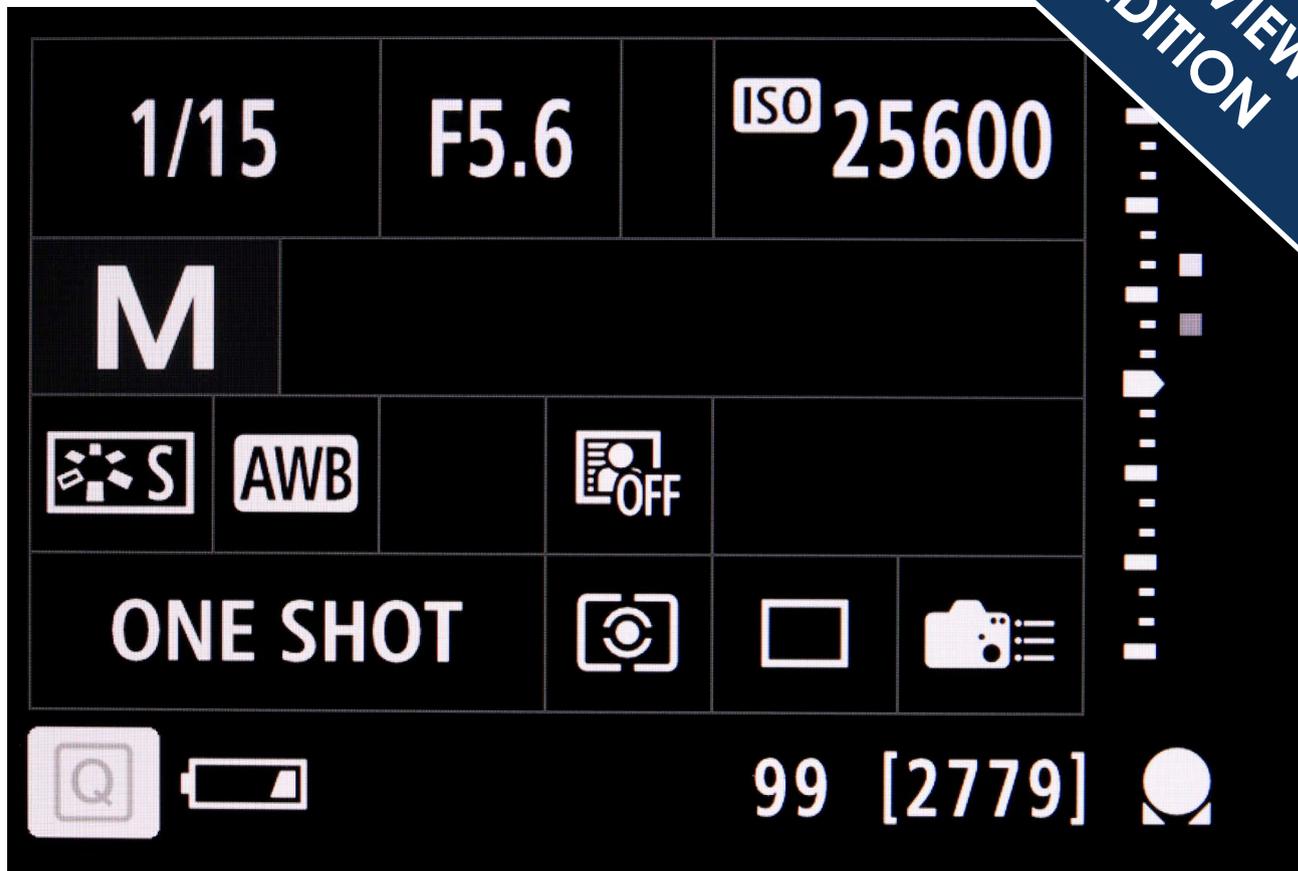
The Q screen on the rear of the camera is accessed in one of two ways. It can be turned on using the INFO button on the rear of the camera and allowed to stay on all the time the camera is awake as I have just looked at and then the Q button pressed to allow items to be highlighted if you want to set something. Alternatively if you prefer to have nothing showing on the rear screen it can be brought up by simply pressing the Q button. This way it is immediately available to set items and will have one of the boxes highlighted in orange. It can then be moved by the normal navigation controls.

When the item is highlighted it can be set by simply turning the main dial or in most instances the quick control dial will change the options as well. If the set button is pressed it will take you into a more detailed menu with all the options available displayed. You then either navigate to the one you want with the main dial or quick control dial.

Today this is the main way of setting all the models within the EOS range, however this model still retains the older button set options for professionals who are very used to that way of working. For me the Q screen works better as it provides a quick way of checking settings and is much easier to see than the top LCD panel.

The top image shows the screen as up all the time and the shutter button having been part depressed to make the camera active, the bottom images shows the Q button pressed and going into a specific setting.

It is important that you check the camera settings



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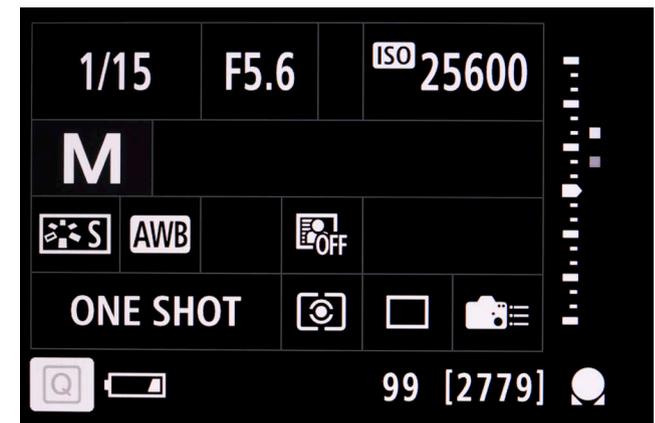
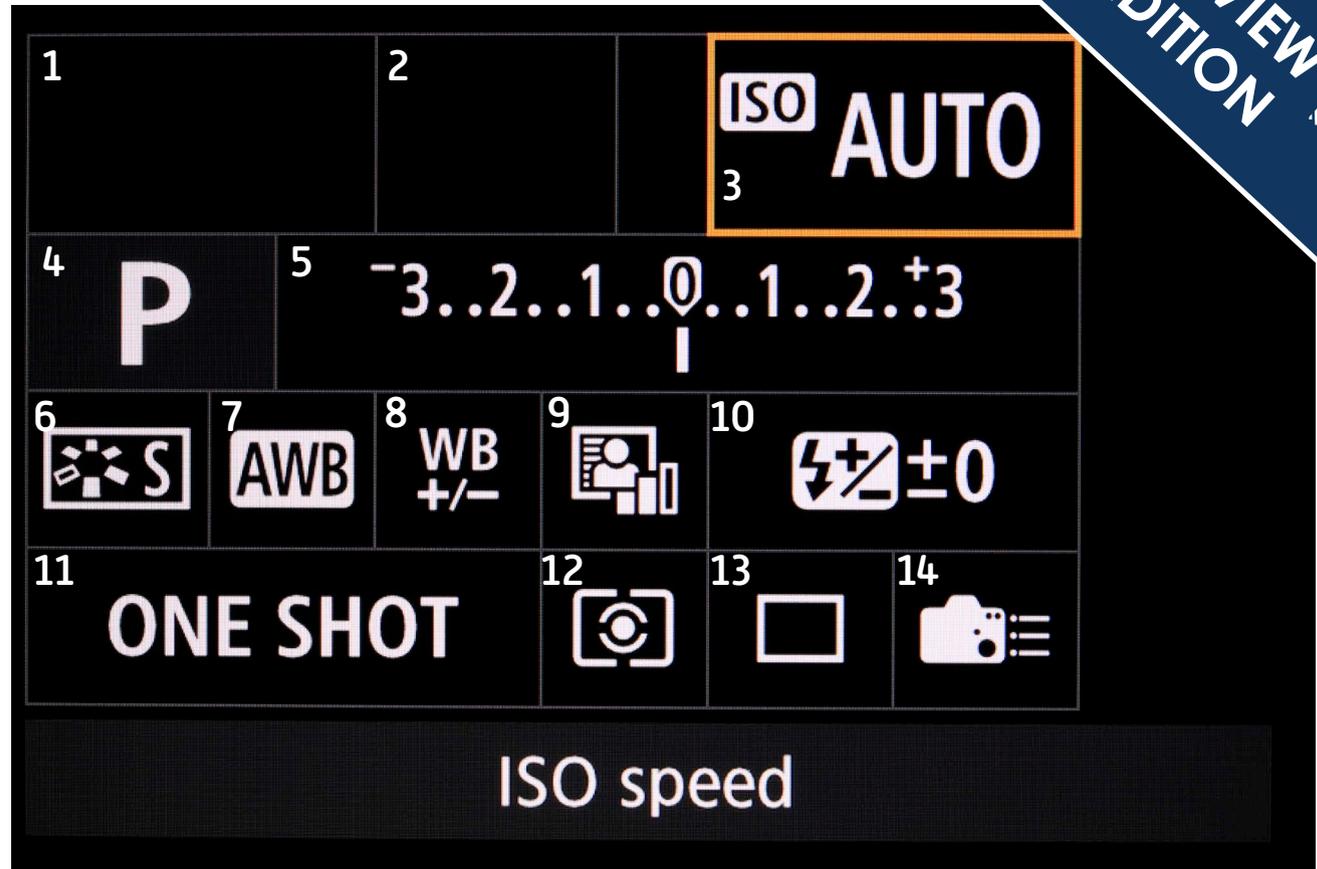
Understanding the Q screen display

when you pick up camera the first time as on this model there are no automatic resets. This model only has limited touch controls in Live View and so the Q at the bottom left (bottom right illustration) is there simply to remind you that pressing the Q button activates the setting options.

The items that are displayed are as follows, I cover what they are in depth in the Understanding your EOS 1DX Mark II or later in this book for some of the more advanced features:

1. Shutter speed
2. Aperture
3. ISO setting
4. Mode
5. Exposure compensation
6. Picture style
7. White Balance
8. White Balance shift/bracket
9. Auto Lighting Optimizer
10. Flash compensation
11. Focusing mode
12. Metering mode
13. Drive mode
14. Custom controls

This model does not rely on the Q screen as heavily as some of the other models in the range, however the one advantage of getting used to setting this camera this way is if you switch between different models the setting options always set in the same way from the Q screen whilst the body functions and buttons may be very different from one another.



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Viewfinder changes

Over the past few years we have seen the gradual introduction of additional information in the camera's viewfinder. The EOS 1DX Mark II now features the information at the bottom of the camera's viewfinder, which we saw introduced on the 7D Mark II and then the EOS 5DS/5DSR models. This takes viewfinder info to a new level, with information about the mode, white balance, drive settings, focusing mode, file format and even features like its flicker reduction. The illustration to the top right shows how it will look.

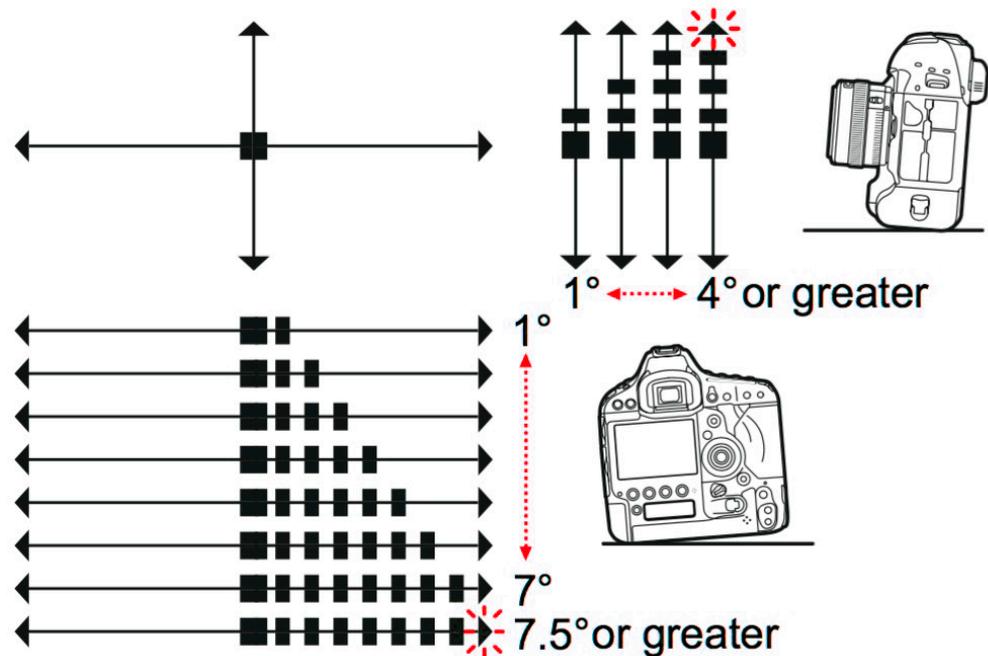
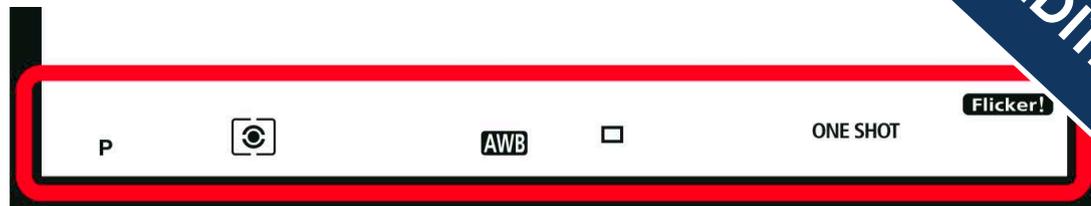
This information is in addition to the normal information displayed at the bottom of the viewfinder. There are options within the extensive menu system on the cameras to allow you to enable or disable many of these options. I will show you how to set these up on the next page.

A nice addition to the cameras is the viewfinder level displayed at the top of the viewfinder. The original 1DX did have a viewfinder level but it was complex to use and most photographers simply did not use it. This introduces the newer version which has also been on the EOS 7D Mark II and 5DS and DSR models

The new level comprises of two scales, which increase in length according to how unevenly the camera is being held. The diagram below shows the principle of how this works.

This is actually a big improvement over the old system and actually is going to prove useful to the majority of photographers.

These cameras have the ability to display a grid in the viewfinder. The grid in the viewfinder is turned on from the second of the setup menus. The



viewfinder grid is always a 6 x 4 grid. This has been on a number of models but photographers seem to get very confused between this option and the live view options.

The live view options are easy to identify as they are always in the live view menus, on this model the

shoot 4 and 5 menus. The viewfinder options are always within the set up menu.

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The Focusing System



The focusing system on the 1DX Mark II is designed to work in much the same way as the system put into the EOS 1DX, 5D Mark IV and the 5D Mark III. The low light focusing performance of the camera has been improved but by far the biggest improvement is its ability to focus at f8 on all 61 AF points when used with the right lenses and extenders.

When we talk about having good focusing on a camera, it can mean many different things. It can be about the camera's ability to follow a fast moving subject. It can be about the camera's ability to still focus in low light. Other subjects require precision so that the camera will focus on the right part of the scene. That's the key thing to understand about the focusing system on this model. It's designed to be able to fulfil all those requirements.

The reality is that there is no single setting that can do all of these things well without requiring a change in set up on the camera. So the 1DX Mark II now has a specific AF menu that allows the camera to be set up for how you want it to work. This is seen by many photographers as one of the most complex parts of the camera to understand and master. The good news is that the default setting the camera is supplied with works well for a very large amount of the subjects that you are likely to shoot. Changing the default options has to come with the warning that it will change the camera's performance significantly and it will not always be for the better, as many of the customisations allowed are there for very specialised photographers who shoot very specific subjects.

This is a camera where you have to understand the

options that are available and set them according to the subjects that you are going to be shooting. Interestingly many of the features in the AF menus have been on cameras in one format or another for up to 8 years. A lot of the options were seen right back to the original EOS 7D. However back then Canon decided to hide some of the more complex commands within the custom function menus so only the more advanced photographers with a good understand of the options would find them and change the options. 5 years ago the 5D mark III and 1DX models appeared within the EOS range and these introduced the concept of a menu that grouped together all the AF functions within a more accessible place. For those with a good understanding of the focusing system it has made the camera faster and easier to configure than was ever possible before.

Understanding the focusing system

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I am going to take a look at all aspects of the focusing system. Over the last few years I have taught more focusing events than all the other types of events added together, which shows just how much photographers are struggling with the set up on the cameras.

What has become clear through the courses is that many of the people I see are struggling with the real basics of how focusing works as they lack the basic knowledge they need to get the rest of the system to work.

So in this book I am going to go right through the focusing system and explain first of all why the cameras sometimes cannot get a subject into focus and then move on to look at the specific options that this camera has.

Reality check

You need a subject that is going to fill a reasonable amount of the frame. I try to frame images so they do not have to be cropped at all but I will not crop down to less than $\frac{1}{4}$ of the frame as the quality drops too much.

The image to the right is a good example of this. The bird was too small in the frame to really be worth shooting, and when cropped down it has become very soft due to the amount of pixels that have been lost by the crop. It was also taken at a shutter speed too slow ($\frac{1}{320}$ th) to effectively freeze the movement of the bird so the cropped image shows up much more the movement of the bird in the image. Interestingly the bird in the original image bottom right is much larger in the frame than what many photographers I see on events are trying to capture and then enlarge up. The focusing is struggling due to how small the



bird is in the frame and the photographers inability to keep the focusing area on the bird..

The smaller the bird is in the frame the harder it is going to be for the camera to find it to focus on in the first place and then to keep it in focus.

In this instance the camera has got the subject sharp, the softening of the image is due to the crop and insufficient shutter speed that the image was taken at, not the fact that the camera focused incorrectly.



Understanding the focusing system

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What's important

To get a successful image of a moving subject you need a number of things to work together.

Fill the frame as much as possible - long lenses are a reality for this type of photography. The camera will not focus well on a subject that is just a tiny dot in the viewfinder.

Use the shutter speed that will freeze the action - this will need to be a minimum of 1/1000th if the subject is moving, I prefer to shoot at 1/2000th if the subject is moving a lot. Even at that shutter speed the wing tips of some birds will still not be sharp.

Have the focusing mode set up for action - for things that move you need to shoot on AI Servo AF and keep your finger part depressed on the shutter button whilst shooting to keep the focusing working and use a sensible amount of focusing points.

If your subjects are static - have the camera set up for static focusing - One Shot AF and use a single AF point. Remember this allows you to lock the focus using a half pressure on the shutter button you then re-frame the image and take the shot.

Use the focusing area that works for the subjects that you shoot - you have a choice of 7 focusing areas that you can use, so choose the area that will work best for the subject that you are shooting. This will mean that the focusing mode and focusing area will need to change a lot.

Accept that not all shots will be sharp - The camera's focusing is good but it will still take images that are not sharp so you need to take plenty of images.



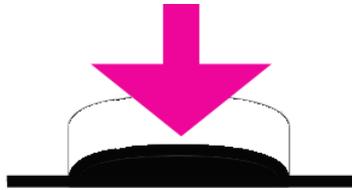
Beware of using overrides you do not fully understand - there are a number of settings on the cameras that can make the focusing better for some things but considerably worse for other things. The defaults are set up they are for a good reason - they work well for lots of things.

Be careful of customising buttons - you need to understand what the changes mean for the images that you are taking. Do not assume that as it works for someone else it will work for you. Back button

focusing and some of the options used within it are a good example of this. I have seen them causing more problems than if the camera was being used in its default settings.

Accept the fact that there is not a magic setting that works for everything - you need to look at the conditions and subject and evaluate what is going to work in that place, at that time, for that subject.

Focus lock



Focus lock is simply pressing the shutter button onto its first stage as illustrated above, this enables you to point the central focusing point at the subject you want to focus on and focus it there. For this to work you need to be on One Shot AF and it is normally used with a single focusing point selected. Once the focusing is locked the image can then be reframed to give better composition if required. This method work well with any static subjects that you are shooting. If I am shooting several images I will always refocus on each shot to check that the focusing is always set correctly. On the image to the right the focusing was always set onto the lemur's eyes

This only works this way using the shutter button, if you have changed your camera to work on back button focusing then it works in a very different way. I look at the customisation of buttons in the customisation chapter later in this book.

You then continue to press the shutter button fully down until the image is taken. 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. To work, the subjects need to be



at the same distance from the camera. On a subject like the one above where your view is interrupted by twigs and leaves you will normally need to use a single focusing point to avoid the twigs and get the camera to focus where you want.

If you use a larger focusing area then the camera will try and focus on what it sees closest to the camera and therefore will always be trying to focus on the twigs or leaves in the foreground.

If the subject is in a really challenging location and you have a lens that features FTM, Full time mechanical manual focusing, then you can turn the manual focusing ring until the subject looks sharp and then when you press the shutter button part way the camera should be able to lock onto the subject. This proved to be essential in some of the denser rain forests. L series lenses all have the FTM option. For other Canon lenses if it a USM lens and has a window where you can see the focus distance it will have FTM.

Why the focusing sometimes fails

PREVIEW
EDITION

Photographers do get very frustrated when the camera will not focus or when it focuses on the wrong thing. However, there is a very simple reason why this happens, which is how it sees the subject. There are some conditions, contrast levels and subjects, which the camera may find very difficult to focus upon. If you are shooting in conditions that make it difficult for the camera to focus, it may well struggle at times.

The boxes that light up when you are focusing show where the focusing sensors are located. The EOS 1DX Mark II has 61 of these, a lot more than the other consumer models within the range.

Under these boxes, there are sensors that look for the contrast patterns within the subject. Contrast is basically areas that can be distinguished as being different from what is next to it. In the image to the right the edges of the cyclist contrast well with the sky and would be easy for the camera to focus upon. However the blue sky and to a degree the brown earth have much less definition and so would be harder for the camera to pick up on.

The camera can only see to focus where the sensors are located, it is totally blind outside of these areas. EOS models like this have tightly packed sensors and so there are not many bits that do not fall under a focusing point making the camera much more consistent with its focusing.

However, in the image to the right there are actually only two of the focusing sensors achieving the focusing as the cyclist is almost out of the focusing area.

A fraction higher and the camera would not see the cyclist at all and probably focus on the earth mound



at the rear of the image.

So in order to be able to focus, the camera needs to have one or more of its active focusing points over something with some detail in it.

The camera has 7 different focusing patterns that you can select. In the image above all of the camera's 61 AF points were active allowing the camera to follow the cyclist around the frame. If you only had a single AF point active at the centre the camera would be unable to focus on anything due to the lack of subject and contrast at that point.

A lot of the problems that I see on the focusing events

that I teach are caused by photographers selecting the incorrect focusing area for the type of subject that they are shooting. Generally I would say that having all the AF points on can cause the camera to focus on the incorrect part of the scene, yet over the last couple of years I have seen far more problems with photographers trying to use an unrealistically small area to focus on a fast moving subject. A small area is fine if the subject is static or moving only slowly.

Black and white subjects can be particularly problematic for the camera to focus on due to the lack of visible contrast that can be seen.

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