Nikon D5300 Experience

The Still Photography Guide to Operation and Image Creation with the Nikon D5300

an e-book by:
Douglas J. Klostermann

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PREVIEW of

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http://www.nvcamera.com

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by: Douglas J. Klostermann
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1. INTRODUCTION

The introduction of the Nikon D5300 brings about several improvements over its predecessor (the D5200) plus a couple important features not previously included on a Nikon dSLR. In addition to a faster Expeed 4 processor, larger 3.2" articulating rear LCD Monitor, longer battery life, and improved video frame rate options, the D5300 now includes both Wi-Fi and GPS capabilities. This is the first time these two features have been built into a Nikon camera. The GPS feature will allow you to geo-tag your images with location and altitude data and to create a log of the camera's journey. The built-in Wi-Fi function will enable you to use your smart phone or tablet to remotely autofocus and release the camera's shutter, as well as to transfer images to the smart device and then to the Internet. The 24.2 megapixel sensor of the D5300 is capable of capturing high quality, low noise images even in challenging low-light situations, plus the optical low pass filter has been removed from in front of the image sensor, which will allow for higher image resolution when using high-quality lenses in controlled situations.

Figure 1 - Detail of the Nikon D5300 digital SLR.

The D5300 also includes the sophisticated 39 point autofocus system of the pro-sumer D7000 and D610 cameras. By offering such a large number of Focus Points, the powerful autofocus system will enable photographers to have more control over their compositions and more easily and accurately track and capture moving subjects. In addition, the D5300 boasts a 2016 pixel exposure metering sensor for subject tracking and determination of exposure settings, a fast 5 frames per second (fps) maximum

continuous shooting speed, the ability to rate and edit images in-camera, and an improved user interface (Information Display), first seen on the D5200, for changing the camera settings using the rear Monitor. When shooting video, the D5300 offers full-time autofocus, plus a built-in stereo microphone for capturing audio, and new 60p (in NTSC regions) and 50p (in PAL regions) frame rates for HD video. The D5300 offers the capabilities and features required for dedicated enthusiast photographers who wish to continue to grow, and is clearly an advanced dSLR that provides the potential to capture sharp, clean, and well-exposed images in most any situation you wish to use it.

But the D5300 is merely a tool. It is up to you to make use of its features and capabilities to create the images you envision. While the camera's manual can tell you about all the settings and controls, how to change them, and their intended function, this guide will build upon that and tell you when and why you want to use them. Every button, menu item, and Custom Setting of the D5300 is there for a reason: to help you capture the images you want. Some of them are more useful to different types of photographers and shooting situations and you don't necessarily need to learn and use them all immediately, but this guide should help to give you the knowledge to confidently use the ones that turn your Nikon D5300 into an image capturing tool that works best for you.

Figure 2 - Flowers, Cambridge, MA - Autofocus modes, exposure metering mode, aperture, shutter speed, ISO, and white balance all considered even in creating this simple image. Shutter speed 1/500, Aperture f/4.5, ISO 100.

1.1 Take Control of Your Camera

Since the D5300 is a tool to take the images you want to take, you obviously can't always allow the camera to make decisions for you. You have to take control of the camera to ensure that you capture exactly the images you envision - by autofocusing precisely where you intend, setting the aperture or shutter speed that you want, and obtaining the exposure you desire. While the D5300 is an intelligent camera, it cannot read your mind and your intentions and does not know that you wish to focus on, and properly expose, the yellow flower near the center of the frame, while making the other flowers and the background appear out of focus, and the fluttering petals and waving stems to be caught still and not be blurred from the motion of the wind, on this bright, sunny day (see *Figure 2*). You have to tell the camera to do all of this, through the various controls and settings, such as the Autofocus Mode and AF-Area Mode (lock focus on the center flower), the exposure metering mode (properly expose the petals), the aperture setting (the out-of-focus background), the shutter speed (freezing the motion of the flowers from the wind), the ISO setting (bright day) and the white balance (sunny day). Taking control of all of these functions and settings will enable you to consistently create the dramatic and compelling images you envision.

Learning to use and get the most out of a dSLR camera like the D5300 takes time, practice, patience, mistakes, and experimentation. If you have upgraded from an older dSLR to the D5300, its improved features and capabilities should more easily help you to capture high quality images that you may have been limited in consistently attaining before, especially in action and low-light situations. If you are new to dSLR photography, you will soon find that using a more versatile camera such as the D5300 can be initially challenging but ultimately more rewarding by offering you more responsiveness and greater control over your shooting and your results. If you are not yet familiar with all the controls of a dSLR and the exposure concepts of digital photography, don't expect to just pick it all up at once, in one or two readings of a single book. (In fact, you wouldn't want to, as the never ending journey of learning and mastering photography is a big part of what it's all about!) Taking control of the complex 39 point autofocus system and its Autofocus Modes and AF-Area Modes may be especially challenging at first. Try not to become frustrated when you don't quite understand something or aren't yet getting the results you desire. Instead learn the controls, functions, settings, and concepts little by little, try them out in real life shooting situations, and return to this guide, the manual, and other photography books to address questions and problems you encounter. Continue to learn and to photograph often and it should all begin to come together, sometimes slowly and sometimes in rapid spurts of discovery and understanding. With practice and experience you will soon be shooting with confidence and can then begin to take advantage of the camera's more advanced functions.

1.2 Using This Guide

There are many different ways to use a dSLR camera and its controls to capture images, and many diverse situations in which photographers work. I'm going to

concentrate on the techniques that I believe are the most practical, useful, and effective for the majority of enthusiast photographers using the D5300. The settings and techniques I discuss can apply to various types of photography including general photography, action, portrait, and travel photography. Once you have a firm grasp of the controls, settings, and basic techniques you will have the tools and knowledge to address different issues, specialized situations, and challenging scenes. I encourage you to then experiment and continue to learn, and to find the techniques that work best and are most comfortable or intuitive for you.

Since this guide is intended to help you get the most out of your D5300, I will not go into great detail about all of the automatic features or Auto and Scene Modes (though I will introduce and illustrate them). The D5300 is a sophisticated tool that deserves to be used to its full potential, and that involves taking control of the camera and its functions, which means taking it off automatic settings such as Auto and Program shooting modes and automatically selected autofocus points (when not needed). While this may be more challenging at first, these are the techniques that are necessary to take full advantage of the capabilities of any dSLR including the D5300, and will lead you to having more control and consistency over your image making. Hopefully this will inevitably lead to better images!

Figure 3 - Detail of the Nikon D5300, showing the articulating LCD Monitor.

This guide is intended to be used with the camera in your hands. That is the best way to directly follow and understand the controls, functions, and settings as they are being

explained. It is also intended to be used in conjunction with the camera's manuals, so I will sometimes refer to the *D5300 Reference Manual* rather than repeat its information about certain lesser-used features or processes that are clearly explained there. As you have probably discovered by now, the camera's *User's Manual* is brief and basic. The more detailed *Reference Manual* is included on the Reference CD included with your camera. I will be referring to page numbers in the larger *Reference Manual* in this guide. Among the official manuals' often brief descriptions and sometimes frustratingly incomplete and disjointed explanations, there is some very valuable information, as well as the basics for buttons, controls, screens, and how to access and change all the settings. Note that the *D5300 User's Manua*l and the more detailed *D5300 Reference Manual* can also be obtained as PDF files from the Nikon website:

https://support.nikonusa.com/app/answers/detail/a_id/18762

http://download3.nikonimglib.com/archive1/nDjd000XOIQF00mktpj7624w9V96/D5300RM_(En)01.pdf

If you have an iPad or tablet you will find that it is helpful to download all the manuals onto your device for reading and reference (along with this e-book, and the Nikon Wi-Fi app manual which will be linked to in the **Wi-Fi** section of this text).

As you can see, there is a lot to make sense of regarding terminology and controls, so I recommend that you familiarize yourself with the controls and displays of the camera body, as explained in the **Camera Controls** chapter below and shown on pages 1-3 of the *D5300 Reference Manual,* as well as read through the manuals at some point and attempt to understand or absorb as much as possible. Yes, much of it may be complicated and confusing at first, but this guide will explain and clarify the numerous buttons, controls, menus, and settings and explain when and why you will want to use them in your photography.

Also be sure to read and follow all the official use, safety, and handling instructions and precautions explained in the manuals provided with the camera and software, including those starting on page viii of the Nikon *D5300 Reference Manual,* plus the GPS and Wi-Fi precautions stating on page xv, and the Live View and Movie Shooting precautions on pages 124 and 127. These and additional cautions throughout the Nikon manuals are important to read because they explain things such as the high internal temperature that the camera can reach due to prolonged Live View / Movie use, and how using a non-compatible external flash can cause your camera to malfunction.

As will be explained throughout this guide, the majority of the camera's shooting settings can be viewed and/ or changed using the Info Button and the i Button plus the Information Display (see *Figure 4*). Press the i Button once and you can immediately navigate through the settings along the bottom of the Information Display and then change those settings. Press the i Button a second time to "deactivate" the settings area along the bottom and simply view the Information Display screen. Or you can press the Info Button to first view the Information Display *then* press the i Button to navigate and change the settings along the bottom of the screen. Navigate the settings using the

Multi Selector thumb pad, and press the OK Button to access the options for the selected setting. However, some settings of the Nikon D5300 can be controlled in multiple ways including using the buttons and controls on the camera body while reading the settings on the rear Monitor, or by accessing the settings in the Menus after pressing the Menu Button, as will be noted for various functions throughout this guide. Explore the options and find the ways that work most quickly and intuitively for you.

Figure 4 - Information Display, i Button, and Menu Button, on the rear of the D5300.

Any time I capitalize something in the text it is a proper term that can be looked up in the *Nikon D5300 Reference Manual*. I will capitalize the names of actual buttons, controls, camera parts, and menu items, such as Exposure Compensation Button, Command Dial, Monitor, and Format Memory Card. Again, please review the camera body, the **Camera Controls** chapter of this guide, and display diagrams in your *D5300 Reference Manual* to familiarize yourself with the names of various parts, controls, and displays, as I will use these proper names in this text. Words that are capitalized and bold refer to chapters and sections within this guide, such as **Menus and Custom Settings**. Turn on the bookmarks or contents navigation panel in your PDF viewer or access the Table of Contents of your e-book reader or reading app to quickly navigate to these different sections.

Many of the functions and controls of a dSLR such as the D5300 are closely inter-related, such as the shooting mode, exposure settings, and the metering mode. As a result of this I must sometimes refer to previous or upcoming sections of the text for further explanation of a related function. It is best to read through the entire text, in the order it is organized, before returning to specific sections for further study. It may take multiple readings followed by experimentation to fully understand both the individual functions and the relationships between functions.

Figure 5 - Fall Foliage, Cambridge, Mass. - In this guide I will explain how to take full control of the camera and its settings for most situations, and will encourage you to do so in order to consistently capture the images you desire. However this vibrant image is the result of Nikon's automatic "Autumn Colors" Scene Mode, which emphasizes the bright reds and yellows of the scene. Shutter speed 1/125, Aperture f/11, ISO 140.

Example Images

In the captions to the example photos throughout the text I include the camera settings that were used (see *Figure 5*). With digital photography there is no "correct" setting or "best" setting for any given situation. A dSLR gives you quick access to the basic and essential settings because they often need to be changed to adapt to the subject, the scene, the lighting, and perhaps most importantly your creative intentions. There is no "correct" aperture setting for any given image or scene, no "proper" shutter speed setting, and no "ideal" histogram. The choices you (or the camera) make depend on a number of variables and relationships as well as the photographer's desires. Because

2. CAMERA CONTROLS

Before setting up the Menu options and Custom Settings and then starting to use the camera, it is helpful to become familiar with the names and functions of the controls of the D5300. Have a look at your camera and the images in this chapter, and I'll go over the controls on your camera that you will be learning about and using throughout this guide. Customizing the various buttons and controls will be further discussed in the **Menus and Custom Settings** chapter. These controls will also be discussed in more detail throughout this text, in conjunction with the functions they perform and control.

Figure 7 - View of the top of the Nikon D5300.

Speaker - On the left side of the top of the camera, the three holes indicate the location of the Speaker used during movie playback.

Focal Plane Mark - The symbol of the circle with the line through it, located on the top of the camera just below the speaker, indicates the focal plane (location of the sensor) from which the focus distance begins. This can be used to measure focus distance in very precise macro or scientific photography.

On the right side of the top of the camera (see *Figure 8*) you will find, starting on the upper right of the body:

Power Switch - Located surrounding the Shutter Button, this is obviously used to turn the camera on and off.

Shutter-Release Button - Located inside the Power Switch, this is what you press to take a photo or series of photos. Tapping it half-way will do a few things like wake up the camera from Standby if it hasn't been used in a few minutes or start the exposure metering. Pressing and holding it half-way will also perform functions like locking focus or starting focus tracking (depending on your Autofocus Mode and Custom Settings). I will often refer to this simply as the Shutter Button in the text.

Movie-Record Button - This small button with the central red dot will start and end movie recording when working in Live View, which is enabled by using the Live View Switch.

Info Button - This button is pressed to turn on the Information Display on the rear Monitor, so that you can view the various camera settings. Press the rear i Button to then enable changing many of these settings with the use of the Multi Selector and OK Button (to be shown in *Figure 10*). Or press this Info Button again to turn off the display on the Monitor.

Figure 8 - Detail of the top controls of the Nikon D5300.

Exposure Compensation Button - Pressing this button indicated by (+/-) and turning the Command Dial will adjust Exposure Compensation, which will be discussed in the **Exposure Part 2** chapter. When working in Manual (M) shooting mode, this button is

pressed as the Command Dial is turned to adjust the aperture setting (as indicated by the aperture icon next to the button). When using the flash, press and hold this button plus the Flash Button on the front of the camera while turning the Command Dial to adjust Flash Compensation.

Mode Dial - This dial is turned to select the desired shooting mode, such as S - Shutter-Priority Auto, M - Manual, or one of the Scene Modes or Effects Modes. Line up your desired mode with the white line located between the Mode Dial and the Built-in Flash (see *Figure 8*).

Live View Switch - This switch, adjacent to the Mode Dial, is used to enter Live View shooting mode - either still photography or movie shooting. Live View is the mode where you use the rear LCD Monitor to frame and preview the image. Press the Movie Record Button to begin recording a video once in Live View.

GPS / WiFi - This bump denotes the location of an antenna used for GPS and Wi-Fi.

Accessory Shoe - Also called the hot-shoe, this is where an optional Speedlight flash unit (or other accessory) is attached, (after removing the hot shoe cover).

Built-in Flash - This is raised using the Flash Button, located on the front of the camera, when working in P, S, A, and M Modes. The flash will pop up automatically in the other shooting modes, when needed. Flash will be discussed in the **Flash** section of this text.

Built-in Microphone - The small holes directly in front of the Accessory Shoe (hot-shoe) indicate the location of the built-in stereo microphone for recording sound during movie shooting. Note that this mic may pick up sounds from the lens while shooting video. The D5300 is also compatible with optional external stereo mics such as the ***Nikon ME-1 Stereo Microphone*** or the ***Rode VideoMic*** or ***Rode VideoMic Pro*****.**

Figure 9 - View of the rear of the Nikon D5300.

On the rear of the camera (see *Figures 9 and 11*) you will find, starting on the upper right and moving across to the left:

Command Dial - This thumb dial, located at the upper right of the rear of the camera, is used in conjunction with some of the camera's buttons and controls to change a variety of camera settings. For example pressing and holding the Exposure Compensation Button (on the top of the camera) and turning this dial will allow you to adjust the exposure compensation amount. These types of button/ dial settings will be explained in conjunction with the related functions throughout the text.

Turning the Command Dial alone, during shooting, changes the shutter speed setting when working in Shutter-Priority (S) or Manual (M) shooting mode, and changes the aperture setting when working in Aperture-Priority (A) shooting mode. To change the aperture setting when working in Manual (M) mode, press and hold the Exposure Compensation button while turning this Command Dial.

AE-L/AF-L Button / Protect Button - This is the Autoexposure Lock / Autofocus Lock button, which is used to lock the exposure settings and/ or focus distance before recomposing an image (reframing) and taking a shot. This button can be customized in

3.2 Playback Menu

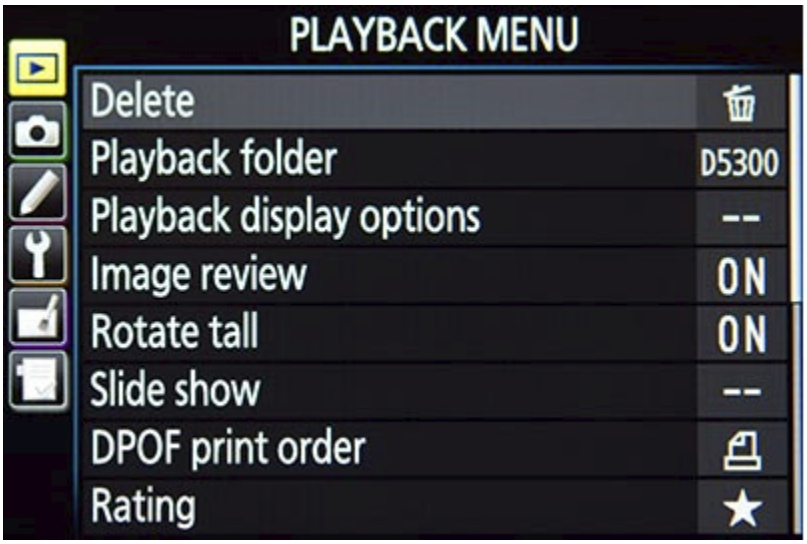

Figure 16 - Playback Menu

Delete
Use this menu item (see *Figure 17 - left*) to delete a selected single image or group of images (*Selected*), all images taken on a specific date (*Select date*), or all images in the current playback folder on the selected memory card (*All*). Set the Playback Folder item next to determine which images are included in the current playback folder.

However, if you are deleting a single image or just a few, you can more easily do this using the Delete Button on the rear of the camera. If you are deleting all the images on a card, it is better to use Format Memory Card (see Setup Menu below). Use large enough memory cards so that you don't need to worry about deleting images in-camera while working, and instead it may be best to manage the images on your computer after downloading all of them.

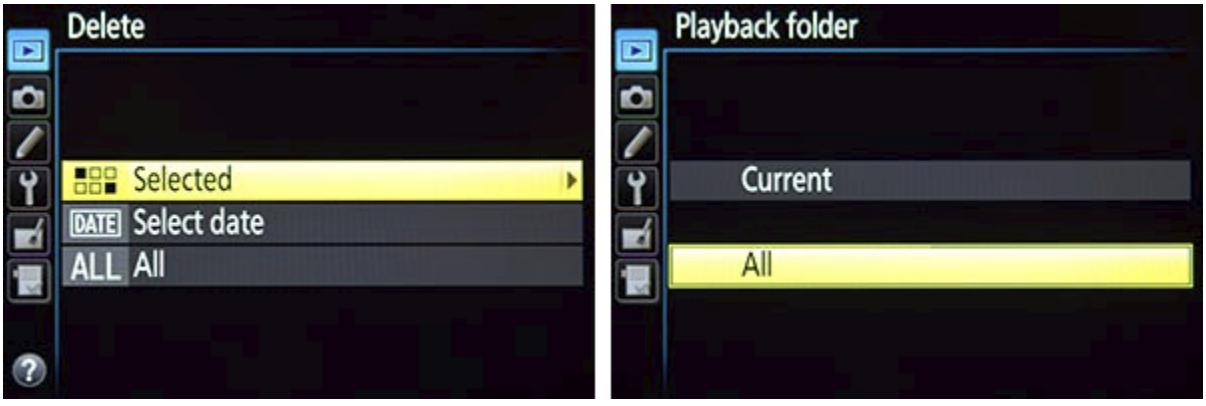

Figure 17 - Left: Delete options, to choose which images will be deleted from the memory card. Right: Playback Folder options, to determine which images on the memory card are visible during image playback.

Playback Folder
This sets which images will be visible during Playback (see *Figure 17 - right*). If set for *All,* all the images in all of the folders on the memory card (taken with this camera and other compatible cameras) will be visible. If you just wish to view only the images in the current folder, select *Current*. (You will select which folder is the current folder and create individual folders for organizing your photos, in the Storage Folder item in the Shooting Menu.) Most users will likely wish to set this for *All* so that you don't lose track of any images on the card and accidentally erase them.

Playback Display Options
During image playback on the rear Monitor you can cycle through various information displays in order to view your images either full screen or with various shooting data or histograms (see *Figure 18*). This menu item is used to select which of these views will be available during playback. I recommend that you select all of the options, at least initially. Then after some use you can determine which information views you prefer and deselect the ones you don't need.

Figure 18 - Playback Display Options, allowing you to select which information and displays are available to view during image playback.

None will display a full screen image with no information, which helps you to inspect the image. *Highlights* will display blinking areas to alert you of where the image has been overexposed, which can help you determine the proper exposure setting for the subsequent shots. *RGB histogram* will display histogram graphs of the various color channels to also assist you in determining proper exposure. *Shooting data* displays additional information including the lens and focal length used, flash information, and Picture Controls settings. This screen is not necessarily very informative immediately after taking the shot since you already know most of these settings, but can be handy when later reviewing an image in-camera. *Overview* displays a thumbnail of the image along with the RGB histogram and shooting information (see *Figure 19*). This is perhaps the most important and useful information screen to use while shooting to help

determine that you obtained the proper or desired exposure of an image. The various views will be illustrated and discussed in the **Image Playback** section of the next chapter, and all the information items displayed on these information screens will be discussed and explained throughout the guide, particularly in the **Exposure** chapters and in the **Histogram** section.

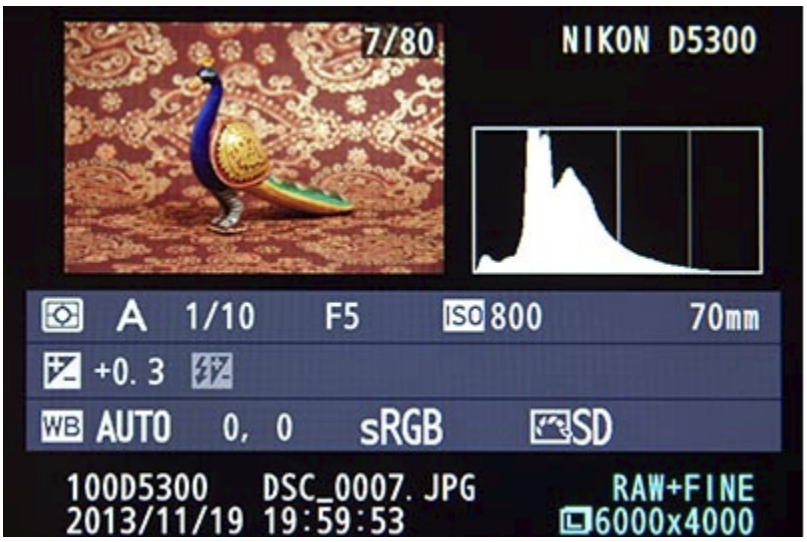

Figure 19 - The "Overview" Information Display screen during image playback, showing a thumbnail of the image along with the RGB Histogram and shooting and file information.

Image Review

Use this to set whether or not your images are immediately displayed on the rear Monitor after capturing them. If you typically review each image after taking it, turn this *On*. However, if you don't review every image, turn it *Off* to save the battery, then hit the Playback Button when you wish to review an image on the Monitor. You can adjust how long the images are displayed during review in Custom Setting *c2: Auto off Timers*.

Rotate Tall

This will automatically rotate your images to the proper orientation in the camera's rear Monitor during image playback (see *Figure 20*). Turn this *On* and use in conjunction with Auto Image Rotation (in the Setup Menu below) to view all images in the same orientation during playback. If you like seeing your vertically composed (portrait orientation) images larger but "sideways" on your rear screen, set this to *Off*. If this setting is enabled (*On*), images will only be rotated during image playback and will not be rotated during image review immediately after taking a photo, as it is assumed you are then still holding the camera in the same orientation that you took the photo.

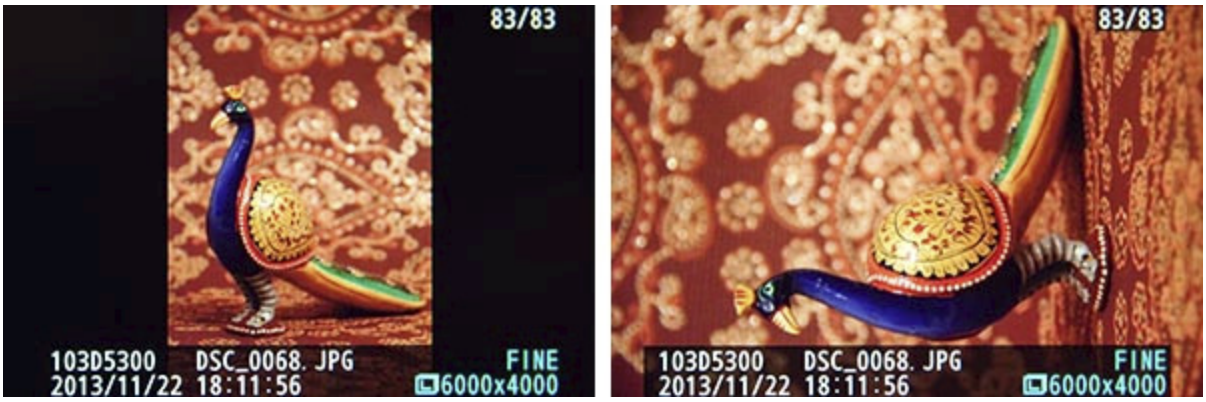

Figure 20 - Use the Rotate Tall menu item for image playback to display your images all oriented in the same direction (setting On, left), or to display vertically captured images "sideways" but larger (setting Off, right).

Slide Show

This is used to display a slideshow of all the images and/ or movies in the current folder, which you can setup to watch through your TV using an HDMI cable. You can select to show *Still images and movies,* or *Still images only,* or *Movies only,* or *By rating*, using the *Image type* option (see *Figure 21*). Using the *Frame interval* setting, you can select how long each image is displayed. When viewing the slideshow, press left or right on the Multi Selector to skip back or ahead, and press the OK Button to pause or continue the slideshow.

Figure 21 - The Slideshow menu (left), used to set the parameters for the slideshow, including the Frame Interval and Image Type for which images or movies will be shown (right).

DPOF Print Order

If you wish to print your images straight from the camera, use this menu item accordingly. The *Reference Manual* explains this thoroughly on pages 162-163.

Rating

This feature allows you to add a rating to images, to tag specific images for later editing or for in-camera slideshow selection purposes. After accessing this menu, press right on

3.4 Custom Settings

a - Autofocus

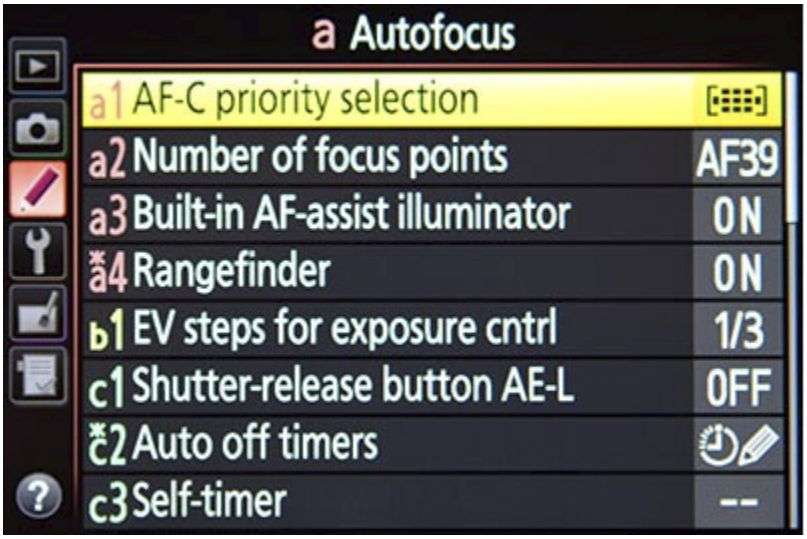

Figure 39 - Autofocus Custom Settings menu.

Note: The autofocus system of the D5300 will be explained in detail in Chapter 5 on **Autofocusing**. Remember to return to these Autofocus Custom Settings once you have become familiar with the autofocus system, including the Autofocus Modes and Autofocus Area Modes.

a1: AF-C priority selection
When you are working in Continuous-servo AF Mode (AF-C) - used to track and maintain focus on moving subjects - this setting determines if attaining focus is top priority or if you just want the shots to be taken even if exact focus is not attained for each shot (see *Figure 40 - left*). Specifically, when you press the Shutter Button, this setting determines if the image is taken immediately (*Release*) or if the camera waits for focus to be attained before taking the photo (*Focus*). For example, if you are tracking a moving subject such as a runner or an animal, you may wish to just capture a rapid series of shots at all costs in order to ensure getting specific moments, and exact focus of each shot may not be the priority. Or you may wish to make sure the camera has properly focused each shot before the shutter is released. This however may cause a slight (perhaps millisecond or more) delay for each shot and the exact moments may be missed. If capturing the images at all costs and maintaining the maximum continuous frame rate are the priorities, set for *Release*. If exact focus is your priority, set on *Focus*.

Figure 40 - Left: AF-C Priority Selection options, to determine if shutter release and maintaining the maximum continuous frame rate are the priorities, or if exact focus of each shot is the priority. Right: Number of Focus Points options, to choose if all 39 or just 11 AF Points are available for you to select from in the Viewfinder.

a2: Number of focus points

This setting determines the number of autofocus points that are available for selection in the Viewfinder (see *Figure 40 - right* and *Figure 41*). If you are manually selecting your Focus Point (as you typically should, and will learn about in this guide) you may find that it is quicker and easier, at least at first, to limit the number of AF points to *11 points*. If you prefer to have all the AF points available for your selection, set this at *39 points*. If you set to *11 points* your selection will be limited to those 11 AF points, but all 39 points will still be used by the camera in subject tracking, so the camera is still taking advantage of all the Focus Points of the autofocus system.

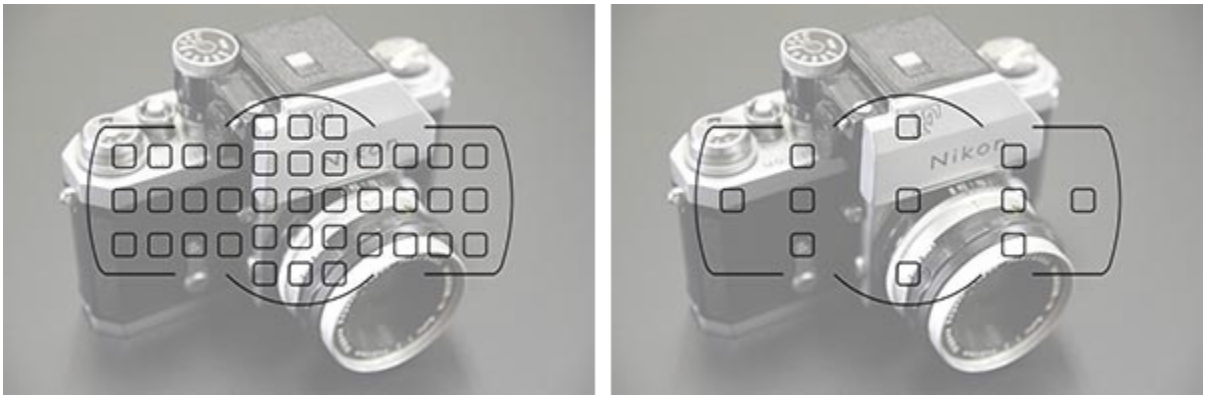

Figure 41 - All 39 AF points vs. 11 AF points - A simulated view of the D5300 Viewfinder showing the configuration of all 39 Focus Points (left), and the 11 Focus Points available when the 11 Points setting is chosen in Custom Setting a2 (right). Background image of Nikon F is shown at 50% opacity to better view the AF points. Note that only the single, selected Focus Point will be visible in the Viewfinder during actual shooting.

a3: Built-in AF-assist illuminator

This is used to enable or disable the AF-Assist Illuminator light, the small white lamp found on the front of the camera. Turn this *On* to assist you with autofocusing in low light, but be sure to turn it *Off* if you are working in situations where it will be distracting,

unwanted, or unnecessary (see *Figure 42 - left*). Note that if this light is enabled, it will only function in Single-servo (AF-S) Autofocus Mode (or in AF-A Autofocus Mode when the camera chooses Single-servo AF), and when either *Auto-area AF* is the active Autofocus Area Mode or the center Focus Point is being used in another Autofocus Area Mode. In other words, the AF-Assist Illuminator lamp is mainly designed to be used when taking shots of still subjects using AF-S Autofocus Mode while focusing with the center Focus Point. All of these variables will be explained in the **Autofocusing** chapter.

Figure 42 - Left: Custom Setting a3 to enable the Built-in AF-Assist Illuminator lamp found on the front of the camera. Right: Custom Setting a4 to enable the Rangefinder feature, used to confirm manual focus.

a4: Rangefinder

This setting is used to help obtain focus when you have turned off autofocus and are using Manual Focus mode (MF) and manually focusing (see *Figure 42 - right*). (Be sure to also set the autofocus switch on your lens to M.) The Exposure Indicator scale and the Focus Indicator light in the Viewfinder are instead used to indicate if the subject located at the active Focus Point is correctly in focus. You can select any AF point, place it over the subject, then turn the focusing ring on the lens until you see the Focus Indicator light up. The Exposure Indicator scale will show if you are focusing in front of or behind the subject, or are spot-on. If the dots and arrow are to the left of 0, the camera is focused in front of the subject; to the right means the camera is focused behind the subject. Note, unfortunately, that this indicator does not work for determining focus when working in Manual (M) shooting mode (when your Mode Dial is set to M) because it must be used instead to indicate exposure. However, the Focus Indicator dot will still illuminate. This feature also does not function in Live View shooting. Turn this setting *On* if you need its assistance when manually focusing. It is generally advisable to use the camera's autofocus system and not manually focus, though some users may wish to manually focus in certain situations such as close-up and macro photography.

5. AUTOFOCUSING

5.1 Using Autofocus

One of the essential steps in taking a successful and sharp photo is controlling where the camera autofocuses. If you allow the camera to autofocus by automatically choosing its own Focus Point(s), such as in Auto shooting mode or when using *Auto-Area AF* autofocus area mode, it typically focuses on the closest object or person. This may or may not be what you wish to focus on, so you should select or at least narrow down where the camera focuses by controlling the autofocus Focus Points. By doing so you are telling the camera exactly where to autofocus or where to look to find a moving subject to track. For example, you often want to focus on a subject's eyes, but if you allow the camera to choose the autofocus point by itself, it may select another part of the face, or somewhere else on the body, or even a raised hand that is nearer to the camera than the face, to focus most sharply on. If you are capturing an image of a bird in a tree the camera has no idea you want the autofocus system to zero-in on the bird so that it is in sharp focus, and not on the branches or leaves near it or perhaps even the leaves closer to you.

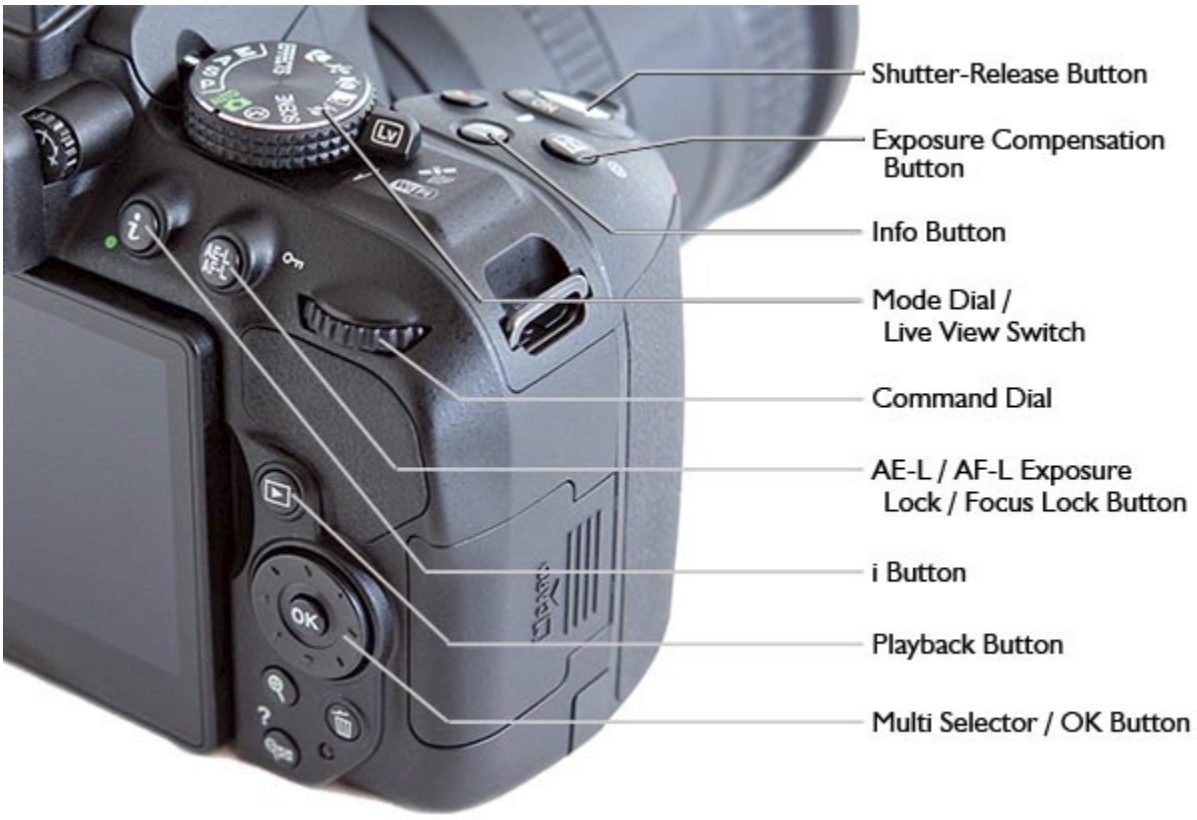

Figure 102 - Autofocus controls and other controls of the Nikon D5300.

The versatile and customizable autofocus system of the D5300 is a major part of what makes it such a powerful camera. In any shooting mode other than Auto and Scene

modes you can, and should, take control of the autofocus system. The autofocus system is comprised of the autofocus related controls (see *Figure 102*), the Autofocus Modes (such as *Single-servo AF,* called AF-S), the autofocus Focus Points and AF-Area Modes (such as *9-Point Dynamic-Area AF*), and the autofocus related menu and Custom Settings items described at the beginning of this text, which customize how the AF system works. You will select an Autofocus Mode generally based on whether the subject is still or moving (see *Figure 103*), and select an AF-Area Mode based on how large of an area you want the camera to look at to find and track your intended subject - ranging from a single point, to a wider Dynamic-Area, to all the available 39 AF points. You can set the Autofocus Modes and AF-Area Modes in a variety of combinations based on what and how you are shooting. Be sure to read the **Menus and Custom Settings** section first to make sure your camera is properly set up to make use of all the autofocus points and various other recommended autofocus settings.

Figure 103 - Selecting the Autofocus Mode using the i Button and Information Display. Autofocus AF-Area Mode is selected in a similar manner, using the icon just to the right of the "AF-S" icon currently highlighted in yellow on the image at left.

Autofocus works in part by looking for contrast so try to focus (locate your Focus Point as you view it in the Viewfinder) on a texture or a detail with a pronounced line or some amount of contrast between light and dark (see *Figure 104*). It may not be able to focus on a large area of consistent color - such as a white wall or clear blue sky, or even a uniformly colored and illuminated shirt - or on a subject or scene that is too dark. It can be disrupted by regular patterns and fine detail, or confused when looking through close objects to objects farther away, such as looking through a fence. And it sometimes fails to work well in highly contrasting or dim light, though the *Built-in AF-Assist Illuminator* of Custom Setting a3 can assist in this situation. Note that the nine central AF points are more accurate cross-type points which look for contrast in both the horizontal and vertical direction, and thus you may wish to make use of these points in low light or other challenging autofocus situations. When photographing people, generally try to focus somewhere on the face, ideally on the eyes or eyebrows (or the nearest eye of an angled face), then recompose the framing of your image if necessary.

Figure 104 - Gull in front of Motif No. 1, Rockport, Mass - Because autofocus works by looking for contrast, here I have selected a single AF Point and located it at the gull's eye. The AF Point also covers the strong line of the bird's head against the darker background, to ensure quick, accurate autofocus. The area that the camera looks at to find autofocus will be slightly larger than the square seen in the Viewfinder. Shutter speed 1/320, Aperture f/8.0, ISO 100, Focal length 200mm.

I will use the term "recompose" a few times throughout the text. By this I mean moving the camera after you have set the focus and/ or exposure such as with a half-press of the Shutter Button or use of the AE-L/AF-L Button, but before you fully press the Shutter Button and take the picture (as will be explained). This means that what you see in the Viewfinder changes from when you do those first actions to when you take the picture; you have re-composed the view you see in the Viewfinder (see *Figure 104a*).

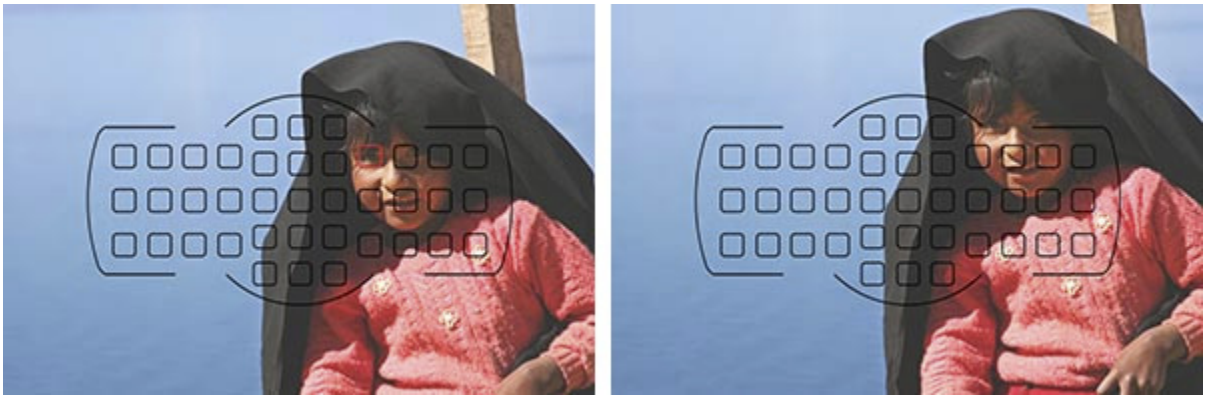

Figure 104a (previous page) - Recomposing the Framing of an Image - After autofocusing and locking focus on the girl's eye (left), I move the camera to recompose the framing of the image to include the girl's hand at the bottom of the frame, and then capture the image (right). Isla Taquile, Lake Titicaca, Peru - Shutter speed 1/800, Aperture f/5.0, ISO 100. (Background image shown at 80% opacity to better see Viewfinder elements - note that only the active AF Point will be seen in the Viewfinder when shooting.)

Before getting into the autofocus system, I'll briefly explain how autofocus point selection works. You will manually select your desired autofocus point (also called Focus Point or AF point) using the Multi Selector as you look through the Viewfinder. You can use the center OK Button to select the center AF point. Make sure the focus mode switch on your lens is set for autofocus (*A* or *M/A*). If it ever seems that your camera or lens is not autofocusing, be sure to check this switch on the lens. Set the Mode Dial to A (Aperture Priority), and use the i Button and Information Display screen to access and change the Focus Mode to *AF-S* (*Single-servo AF*) and the AF-Area Mode to *Single-point AF* (see *Figure 105*).

Figure 105 - Selecting the Focus Mode (shown as AF-S) and the AF-Area Mode (shown as the Single-point AF icon) on the Information Display Screen. These two settings are indicated by the yellow rectangle here. Press the i Button to "activate" the screen and then select these settings and choose the desired options.

1. Tap the Shutter Button with a half-press to wake up the camera and start the exposure metering.

2. Looking through the Viewfinder, use the Multi Selector to select the Focus Point that is nearest to where you want to focus.

3. Place that point over your intended subject.

4. Press and hold the Shutter Button halfway down and see that point blink red. The Focus Indicator dot should light up in your Viewfinder. You have locked the focus.

5. Keeping the Shutter Button pressed halfway, recompose if necessary and take the shot by fully pressing the Shutter Button.

If the In-Focus Indicator does not light up and the camera does not take the photo, the camera may not be finding something to focus on, may not be finding enough contrast to lock-in on, or you may be too close to your subject for the lens to focus.

There are reasons to select among all the Focus Points and not just the center one all the time, which will be discussed. It may sound difficult to manually select a specific Focus Point each time, but it is actually very quickly done and will become instinctive. You may even start to choose your AF point as you approach a scene before even bringing your camera to your eye, by tapping the Shutter Button then using your thumb on the Multi Selector. For example, you can press the OK Button to select the center AF Point, then click right on the Multi Selector a few times so that when you bring the camera to your eye, an AF Point on the right side of the frame is already selected. But if you wish, until you get the hang of using the AF Points, you can start by always using the center point and recomposing before taking the shot. And remember that Custom Setting *a2: Number of Focus Points* allows you to limit the number of selectable points to *11 Points* to perhaps make the AF Point selection process more manageable in the beginning or in certain shooting situations.

5.2 Autofocus Modes

The D5300 has three different Focus Modes to choose from, typically depending on if your subject is still, or if it is moving and you wish to track its movement and remain continuously focused on it. It also has six different autofocus AF-Area Modes (discussed in the next section) to specify how many of the Focus Points are active and how they follow or track a moving object. You can set these two functions in various combinations. I will first go over the Focus Modes. Select the Focus Mode using the i Button to access the Information Display screen, navigate to the desired setting, and press the OK button to view and select the desired option (see *Figure 106*). (Note that the following Focus Modes and AF-Area Modes apply to Viewfinder shooting and will differ for Live View and Movie shooting. **Live View and Movie Focusing** will be explained later in this chapter.)

Single-Servo AF (AF-S)

Use this mode when your subject is stationary, or is still and not going to move, or if your subject is not going to move very much, or if the distance between you and the subject is not going to change between the time you lock focus, recompose, and take the shot. Lock focus on the subject by locating the selected AF Point over the subject then half-pressing the Shutter Button, and then recomposing if necessary. This mode can even be used for moving people or subjects if you quickly take the shot after

establishing or locking focus. When using AF-S, you can select from two AF-Area Modes (to be described in the next section), either Single-Point AF where you select the Focus Point, or Auto-Area AF, where the camera selects the AF point(s) for you. I suggest you nearly always select your own desired Focus Point so that the camera autofocuses exactly where you want it to.

Figure 106 - Single-Servo AF Focus Mode - Select the Focus Mode icon on the Information Display screen (left), then select Single-Servo AF (AF-S) (right).

As noted above, focus on your subject by pressing the Shutter Button halfway. The active AF point will illuminate (blink), and the Focus Indicator light at the lower left in the Viewfinder will illuminate as well. Continue to press the Shutter Button all the way to take the shot. If you half-press the Shutter Button to lock focus on your subject, the camera will remain focused at that distance as long as you keep half-pressing the Shutter Button. You can recompose the shot as you wish and then fully press the Shutter Button to take the photo. Again, if the Focus Indicator light does not light up and the camera does not take the photo, the camera may not be finding enough contrast to focus on, you may be too close to your subject for the lens to focus, or the lighting may be too dim for the AF system to work well, though the AF-Assist Illuminator can help in low-light situations.

However, if you are photographing a subject that is approaching or receding from view at a relatively constant rate, or photographing fast or erratic or unpredictably moving subjects, or photographing sports, action, or wildlife you will usually want to use Continuous-Servo AF (AF-C) Autofocus Mode.

Continuous-Servo AF (AF-C)

Continuous-Servo AF mode is used for tracking and maintaining focus on moving subjects, and is ideal for capturing sharp images of sports and wildlife including birds. To take full advantage of this mode you will need to also understand the AF-Area Modes, as described in the **Autofocus AF-Area Modes** section just below. If the subject is moving towards you or away from you, the camera will keep evaluating the focus distance. And if the subject is moving from side to side or throughout the frame, the camera can track it as it passes from one AF point to other ones (depending on the selected AF-Area Mode).

About the Author

Douglas Klostermann is a travel, culture, and humanitarian photographer, as well as the author and publisher of *Full Stop* e-book camera guides including the best-selling *Nikon D7100 Experience* and *Nikon D610 Experience*. He has photographed for numerous organizations in the United States and in Latin America, been recognized by the *United Nations Development Programme* for his humanitarian photography, and been published in magazines and books including *Conde Nast Traveler, Sherman's Travel, South American Explorer,* and *Viva Travel Guides*. He also lectures and gives individual instruction on digital photography. Doug is a member of the National Press Photographers Association (NPPA).

Learn more about photography techniques and equipment on his blog *Picturing Change* at http://blog.dojoklo.com/, view his photography and e-books at www.dojoklo.com, and follow him on Twitter at @dojoklo.

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-R.D.C.

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-Malcolm

This manual is a clearly written, concise and useful explanation *of the rationale for the seemingly infinite and often confusing settings options for the camera. Used in conjunction with the Nikon manual I feel more confident in understanding how to at last proceed in getting better photographs.*
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