The Nikon D100

By Moose Peterson / copyright 2006

I didn't want to like the D100 but that's not how it's turned out! As soon as the D100 slipped into my hands and I looked through the viewfinder, I instantly grew fond of this little digital. While the D100 only weighs a mere 24.7oz, it is packed with goodies. I had to wonder with the 6MP CCD and the low price, what the compromise was in the D100 since Nikon doesn't give you more for less. The compromise is in the one place that makes the most sense, and that's write times, because it sure *ain't* in image quality. The D100 delivers features you won't find in any other camera. Point blank, the D100 delivers image quality, no mistaking that!

Big, Beautiful images!

Disclaimer

The information that follows is based on a limited number of body/flash samples. There are simply too many manufacture changes (as warned in the IB) to state for certainly that every feature is going work the same way with every piece of equipment every time in every way. This is an unedited text.

Original Announcement

TOKYO - Nikon Corporation is pleased to announce the introduction of the Nikon D100 digital SLR camera, on February 21, 2002. The Nikon D100 was developed to meet the growing demand for a superbly designed compact and lightweight digital SLR of exceptional value. The camera's target users are advanced amateurs and professionals who seek an approachable digital SLR camera that offers superb image quality and performance.

The new Nikon D100 boasts sophisticated digital image control technology, including superb image quality with 6.1 effective megapixels, an improved image-processing algorithm, and an enhanced Auto White Balance system. It inherits exclusive, high-performance Nikon features such as 3D Matrix Metering, Five-Area Autofocus and a built-in Speedlight with D-TTL flash control capability. And of course, it provides full compatibility with more than 40 AF Nikkor lenses for professional optical quality, as well as numerous other accessories including a dedicated Multi Function Battery Pack and a new Nikon Capture 3 software which enables remote control of the camera body as well as reading/adjustment of Nikon 'NEF' RAW image file for greater results. All of these features are packed in a stylish, compact and lightweight body for optimum portability. With so many innovations in such a practical design, the Nikon D100 is certain to attract countless new digital SLR users to the world of Nikon digital SLR photography.

Note: Specifications, design, product name and standard accessories may differ by country or area.

Nikon D100 Feature Highlights

6-megapixel high-definition images

The excitement begins with the Nikon D100's new large CCD -- equal in size to that of Nikon D1-series professional cameras yet offering even higher definition. The camera features **6.1 million effective pixels** which produce ultrahigh-definition **3,008 x 2,000-pixel images.** Quality in fact that rivals film printing itself. In addition, the D100's new **one-chip system LSI** provides super-fast image processing in a compact and lightweight body capable of handling this rich, high-resolution data, while keeping power consumption to a minimum.

Quality digital images – automatically

The Nikon D100 makes your introduction to Nikon digital SLR imaging quality easier than ever. The secret is Nikon's **3D Digital Matrix Image Control** that features a refined image-processing algorithm to ensure astonishingly **faithful color reproduction** with exceptionally **smooth gradations.** The three components of this highly effective image-control function are **3D Matrix Metering** for precise exposure control, **TTL White Balance** for precise color temperature determination, and **Tone Compensation** for optimal contrast whatever the lighting situation. Moreover, the camera's built-in Speedlight features **D-TTL Flash** operation to provide advanced flash control. The D100 handles it all automatically.

High-performance Nikon SLR features
Those acquainted with Nikon SLRs will find the Nikon D100 controls and operation intuitive. The D100 features the same control system and advanced features of field-proven Nikon SLRs -- including the acclaimed **Five-Area Autofocus** system, **10-segment Matrix Metering sensor** and **TTL Multi Sensor.** And as expected, the camera accepts the full range of **AF Nikkor lenses,** as well as a variety of **Speedlights** including the latest **SB-80DX.** Users will enjoy the same high level of performance and capability that they had expect from a Nikon SLR. It's the best of Nikon SLR advances made digital.

Digital photography that completes your vision
Users can fully explore the advantages of digital SLR photography with the Nikon D100 and exclusive Nikon software. **Nikon View *5*** software (supplied) enables easy transfer and viewing of images -- including those taken in Nikon 'NEF' RAW file format -- on computer. The new optional **Nikon Capture *3*** software features versatile image manipulation tools that allow users to fine-tune images. It even lets users control the camera remotely from their computer.

Nikon D100 Major Features

- 6.1 effective megapixels for 3,008 x 2,000-pixel images
- Compact and lightweight (weighs approx. 700g/24.7 oz.)
- New CCD sensor is the same size as that of D1-series SLRs (lens magnification factor x1.5)
- 3D Digital Matrix Image Control for precise exposure control, adaptive auto white balance, and optimal color accuracy
- High-performance built-in Speedlight with D-TTL flash control -- offers results equal to Nikon's field-proven 3D Multi-Sensor Balanced Fill-Flash
- Three color modes offered for different workflow environments
- Five-Area Autofocus with Dynamic AF operation
- High-speed image processing provided by new one-chip system LSI
- Top shutter speed of 1/4,000 sec. and flash sync speed up to 1/180 sec.
- Plug-and-play USB1.1interface for quick computer connection
- On-Demand Grid Lines can be displayed in viewfinder
- Custom Settings can be selected in the LCD monitor
- Compatible with CompactFlash™ cards Type I and Type II including 512MB/1GB IBM MicroDrive™
- Nikon View 5 software (supplied) enables easy transfer and viewing of images on your computer
- Optional Nikon Capture 3 software for excellent image management and remote operation
- Optional Multi Function Battery Pack MB-D100 accepts six 1.5V LR6 (AA-size alkaline) batteries or one or two Li-ion batteries for extended shooting capability. Features voice memo recording/playback function, vertical shutter release button, Main and Sub Command Dials, AF start button and a 10-pin remote terminal.

Nikon D100 Specifications
Type of camera Lens-interchangeable digital SLR camera Nikon D100
Effective Pixels 6.1 million
CCD 23.7 x 15.6mm RGB CCD; 6.31 million total pixels
Image Size L (3,008 x 2,000); M (2,240 x 1,488), S (1,504 x 1,000)
Sensitivity ISO equivalency 200 - 1600 (can be boosted to higher ISO equivalency)
Storage System: EXIF file (uncompressed TIFF or compressed JPEG); uncompressed RAW (12-bit), Media: CompactFlash™ (CF) Card (Type I/II) and 512MB/1GB IBM Microdrive™
Shooting Modes 1) Single frame shooting (S) mode, 2) Continuous shooting (C) mode 3) Self-timer mode: time duration can be set
White Balance 1) Auto (TTL control using image sensor), 2) Manual (6 settings with fine tuning), 3) Preset
Color Setting 3 modes available
Color Adjustment +3 to -3 step for each color setting

LCD Monitor 1.8-in., 120,000-dot (originally announced as 118,000-dot), low-temp. polysilicon TFT LCD with LED backlighting
Playback Function 1 frame; Thumbnail (4/9 segments); Magnifying playback; Slide show; Histogram indication; Highlight point display
Delete Function Card Format, All frames delete, Selected frames delete
Video Output NTSC or PAL (switchable)
Interface USB 1.1
Viewfinder Optical-type fixed-eye level pentaprism; built-in diopter adjustment (-2 to +1 m^{-1})
Eyepoint 20mm (at -1.0 m^{-1})
Focusing Screen B-type Bright View Clear Matte screen II
Viewfinder Frame Coverage
Approx. 95%
Viewfinder Magnification Approx. 0.8x with 50mm lens set to infinity and -1.0 m^{-1}
Viewfinder Information Focus indications, Shutter speed, Aperture value, Exposure indicator, Exposure compensation, Flash output level compensation, Frame count, etc.
On-Screen Information Focus frame, Grid lines, Center-weighted metering area
Autofocus TTL phase detection, Nikon Multi-CAM900 autofocus module; Detection range: EV -1 to EV 19 (ISO 100 equivalent, at normal temperature: 20°C/68°F)
Lens Servo 1) Single Servo AF (S), 2) Continuous Servo AF (C), 3) Manual focus (M)
Focus Area One of five focus areas can be selected
AF Area Mode 1) Single Area AF
2) Dynamic AF (Dynamic AF Mode with Closest Subject Priority is available)
Focus Lock Focus is locked by pressing AE-L/AF-L button or lightly pressing shutter release button in (S) AF
Compatible Lenses 1) D-type/G-type AF Nikkor: All functions possible, 2) D-type Manual-Focus Nikkor: All functions except autofocus possible, 3) AF Nikkor other than D-type/G-type: All functions possible except 3D Matrix Metering 4) AI-P Nikkor: All functions except 3D Matrix Metering and autofocus possible, 5) Non-CPU: Usable in [M] mode (camera's built-in exposure meter does not work)
Electronic Rangefinder usable with lens with maximum aperture of f/5.6 or faster; IX-Nikkors cannot be used.
Picture Angle Approx. 1.5x focal length in 35mm [135] format equivalent
Exposure Metering TTL full-aperture exposure metering system;
1) 3D Matrix Metering with 10-segment SPD, 2) Center-Weighted , 3) Spot Metering
Exposure Metering Range 1) Matrix Metering: EV 0-21 2) Center-Weighted Metering: EV 0-21, 3) Spot Metering: EV 3-21 (at normal temperature, ISO 100 equivalent, f/1.4 lens)
Exposure Mode 1) [P] Auto-Multi Program (Flexible Program possible), 2) [S] Shutter-Priority Auto, 3) [A] Aperture-Priority Auto, 4) [M] Manual; shutter speed/aperture adjustable in 1/2 or 1/3 EV steps; ISO Automatic Control Mode (Custom setting) is available in any exposure mode (P, S, A, M)
Exposure Compensation Exposure compensated in ±5 EV range in 1/2 or 1/3 EV steps
Auto Exposure Lock Detected exposure value locked by pressing AE-L/AF-L button
Auto Exposure Bracketing Number of shots: two or three, Compensation steps: 1/3, 1/2, 2/3 or 1 step
Shutter Speeds 30 to 1/4,000 sec. and Bulb
Sync Contact X-contact only; flash synchronization up to 1/180 sec.
Flash Control 1) D-TTL (Automatic Balanced Fill-Flash controlled by five-segment TTL Multi Sensor) with built-in Speedlight and external Speedllight such asSB-80DX/28DX/50DX: three modes available
2) Non-TTL Auto Flash with an external Speedlight
Flash Sync Mode 1) Front-Curtain Sync (normal sync), 2) Red-Eye Reduction 3) Red-Eye Reduction with Slow Sync, 4) Slow Sync, 5) Rear-Curtain Sync
Built-in Speedlight Manual pop-up type, GN: 11/36 (ISO 100, m/ft.)
Sensitivity range: ISO 200 - 800 equivalent Sync flash system with external Speedlight: Not available
Ready-light Red LED indicator inside the viewfinder
Accessory Shoe Standard ISO-type hot-shoe contact; safety lock provided
Sync Terminal Available in optional hot shoe adapter AS-15
Self-timer Electronically controlled; timer duration: 2, 5, 10 (default), 20 sec.
Depth-of-field Preview Button Stop-down lens aperture by pressing depth-of-field preview button (Electronically controlled type)
Voice Memo Available in optional Multi Function Battery Pack
Letter Input Multi selector enables inputting of alphanumeric characters (max. 36)
Remote Control 10-pin remote terminal available in optional Multi Function Battery Pack

Power Requirements Li-ion Battery Pack EN-EL3 (7.2V DC), AC Adapter EH-5 (100-240V AC)
Tripod Socket 1/4 in. (ISO1222)
Requirements Can be selected on LCD
Dimensions (W x H x D) Approx. 144 x 116 x 80.5mm (5.7 x 4.6 x 3.2 in.)
Weight (without battery) Approx. 700g (24.7oz.)
Optional Accessories Multi Function Battery Pack MB-D100, Li-ion Battery Pack EN-EL3, Charger, MH-18/19, AC Adapter EH-5, CompactFlash™ Cards, Speedlight SB-80DX/SB-28DX/SB-50DX, "Nikon Capture3" Control Software, Semi-Soft Case CF-D100

The D100 Package

When the D100 is purchased in the US, it comes in a blue box with the following:
D100 (with BF-1A body cap and BM-2 LCD Monitor cover)
Quick Start Guide
Nikon Guide to Digital Photography (the instruction book)
Warranty & Important Information envelope
DK-5 eyepiece
AN-D100 Strap
EN-EL3 battery
MH-18 charger
EG-D100 video cable
UC-E4 USB cable
Nikon View 5.1 CD-Rom
Nikon View 5.1 CD-Rom reference manual

D100 Serial Numbers

Since the D100 has only been out a very short time, there is no serial number track record established as of yet. The lowest serial number I've seen is 2000200, mine is 2000271.

D100 Instruction Book

The instruction book I received with my D100 had the serial number of 6MBA0111-01. There are very few omissions in the IB, what few there are will be noted.

The D100 Body

Nikon has never come out and said exactly the construction make up of the D100. It is definitely a combination of metal and polycarbonate, the top cover is metal and the prism and back polycarbonate as well as the base cover. With the camera being so light, I'm assuming the chases is magnesium but wouldn't swear on it. Since I had a relatively short time to test drive the D100 prior to writing this, I was harder on the D100 than I normally am on my gear just to see what it can withstand. This little body does great, you don't have to worry about ruggedness no matter what the actual construction materials might be!

Because of some physical attributes such as the prism with pop-up flash, conventional cable release socket, lens-metering limitations, some have assumed incorrectly the D100 is a digital N80. This is not the case. The D100 body is a unique design which must have cost Nikon a fortune to put into production!

There is a weak point in the D100 construction I feel, one I've not personally tested just observed. The CompactFlash door is polycarbonate attached with two, small hinges. Because of the angle you have to use to insert the CF card, I can easily see this door breaking off if you're wearing gloves, in a hurry, etc. There are no contacts in the door so if it does break off (not personally tested) you can still continue to shoot (you can shoot with the door open).

The LCD monitor on the D100 is located in the dead center of the back of the camera. Originally announced as a 118,000-dot it ended up a 120,000-dot. While it does provide nice, bright images, like the D1 Family, you should not base your color and exposure by what you see on the LCD monitor (you need to

take advantage of Display Modes pg.xx). The image zoom feature of the D100 is outstanding though, big improvement over the D1 Family (pg.xx). And Nikon not only made it possible to use a monitor cover (unlike Canon) but finally produced a monitor cover that we can use! The BM-2 is a super clear plastic cover that fits snuggly over the monitor and that comes with the camera when brand new. And the nicest thing, the monitor is basically flush with the camera body!

My question about the monitor was/is, is it 100% viewing of the image you capture? This is not stated in any of the specs but from testing it appears to be about 98% and not 100%. This is a bummer with the viewfinder at 95%!

D100 Picture Angle

The CCD of the D100 is like that of the D1 Family in that there is a net focal length gain of 50% (but the CCD in the D100 is totally new, not the same as I the D1 Family). The CCD is smaller physically than a 35mm image so it only is capturing the "center" portion of the image projected by the lens at the film plane. This means a 14mm lens on the D100 is equal to a 21mm lens on a 35mm body. This focal length "increase" has some saying that a fullsize CCD is required.

I would like to pass on to you an old technique for getting wider shots. This technique started back in the days when either photographers didn't have available because of money or design, ultrawide lenses. This might help you until the day when a fullsize CCD shows up in a camera. Physically MOVE back! It is amazing how this old technique can be successfully employed shooting digital (unless you're against a cliff or wall)!

D100 Layout

The basic layout of the D100 though similar to other Nikon bodies, has some new twists and short falls to get use to.

The viewfinder is a pleasant surprise! When you put the D100 up to your eye and you look through the viewfinder, it doesn't feel like you're viewing down a tunnel. While the viewfinder magnification for the D100 is the same as the D1 Family (.8x with a 50mm lens) the actual "feel" is quite different! This is true even though we only "see" approximately 95% of the image we're capturing (in the D1 Family it's 96%). The viewfinder is bright as well, coming with the B-type Bright View Clear Matte screen II. What's cool is, like the N80, you can turn on grid lines (pg.xx).

The Eyecup and Diopter of the D100 aren't the greatest design. The eyepiec is the rectangle kind and slips over the viewfinder opening. It attaches by stretching over the viewfinder eyepiece and shrinking back into place. The eyepiece can be uncomfortable depending on your forehead. I personally find it uncomfortable so I switched to the DK-10 eyecup.

The Diopter provides correction of -2 to +1. The problem I find is with the slider you use to adjust the Diopter. I've accidentally hit the slider a couple of times now. The problem is there is no zero mark or detent to know where the zero correction is. The + side is at the top of the slider, the minus is at the bottom, but no idea where zero is technically. You are supposed to look through the viewfinder and adjust the Diopter until the lines or AF sensors become dark. Not the best of systems!

The ON/OFF switch for the D100 is around the shutter release button. It's a simple pull/push to turn the D100 on or off. The shutter release itself is where you activate the meter and fire the camera. One of the short comings of the D100 is the play in the shutter release button. Comparing it to the D1 Family, you'll find you have to push on the release harder and further, especially to actually fire the camera.

The D100 in unique in that is has a built-in pop up flash. This flash has limited power and runs off the EN-EL3 battery in the D100. The flash has a guide number of only 56, so it's works best in my opinion for fill flash. Built-in pop up flash is new to most digital shooters and they don't realize one major drawback in using them and that's the lens.

Because the pop-up flash is not tall, it doesn't stand very far above the prism, longer lenses or lens shades literally blocks the light from the flash. When this happens, that lower portion of your photograph will be dark from the lens/shade shadow. This is simply a limitation of the flash. If you want to do real flash photography, you need to use a real flash like the SB-80DX and then you won't have this problem!

Located to the left of the lens barrel and near the handle you will find the DoF button. You can depress this button closing down the aperture to the predetermined setting for viewing.

Power

The D100 is powered by a single EN-EL3 7.4V Li-ion Battery or by the optional MB-D100 Battery Pack powered by: 6 AA batteries or 1-2 EN-EL3). The instruction book says you should expect approximately 1600 captures on one charge. Sound a bit fantastic? To be honest with you, I got bored and stopped counting captures, the D100 battery lasts that long! When I first received the D100, I received it with a fully charged battery but no charger, yikes you might say. Well, I just went for it and shot, previewed and played and tested for four days before the charger arrived. The battery indicator after all of that still read "charge sufficient for full operation." This, even after a whole lot of 30sec exposures testing out the Noise Reduction (CS#4 pg.xx) to boot! Needless to say, I'm impressed! (Good thing since "spare batteries are impossible to get!)

The EN-EL3 is charged by the MH-18 charger (yes, new charger with new technology). The operation of this charger is basically the same as the MH-16 (pg.70 TDG) with a couple of changes. There is no refresh button on the MH-18. These means that whether it needs it or not, you cannot refresh the EN-EL3 3 times prior to use (like required for the EN-4). You still need to follow all other cautions outlined for the MH-16 which includes making sure the battery is cold to the touch and you leave the battery in the charger at least 15 minutes after the green light comes on.

MH-19 Multi Charger is available for the D100.

EH-5 is the AC charger for the D100. The socket in the D100 for the EH-5 is a different configuration than that for the D1 Family. If you were thinking your could use your Digital Camera Battery for the D1 Family for the D100, can't do it until a new cable is made just for the D100.

The D100 battery indicator acts differently than that in the D1 Family. The actual indicator is located in the top left corner of the LCD panel. When fully charged, the battery symbol is solid black. At some point, the indicator is only 7/8 black (you have approximately ¾ of a charge left), the left most portion of the battery indicator going transparent. This signifies "charge sufficient for full operation." The next change in the battery symbol is when only 1/3 of the battery is black. This means the battery is low (less than ¼ charge left). When this occurs, a battery symbol that is 2/3 blank appears in the viewfinder. When the battery is "exhausted" the battery symbol in both the LCD and viewfinder blink.

There is a clock battery in the D100. It is charged by either the EN-EL3 or the EH-5 when attached. It states in the IB that 3 days of charging of the clock battery by the EN-EL3 is good for 5 months of operation. If the clock battery should go dead, the date/time resets to the factory default. Unlike the D1 Family clock battery which has a life and must go back to be replaced when dead, it appears this is not the case for the D100. Since I have no way of testing this, we'll have to have faith in the IB.

Top Control/LCD Panel

The layout and functions accessed via the Top Control LCD Panel is different in the D100 from the D1 Family. This is partly because there is no rear LCD panel as on the D1 Family to display info. Obviously, to see anything, you'd think you'd need the camera turned on. Well, when the D100 is turned off, the number of captures remaining on the CompactFlash card is displayed. If no card is inserted, an – E – is displayed in place of the numeral. Once the shutter release is depressed and stays on (default is 6sec) you can see and set the following: Aperture, Shutter Speed, Exposure Mode, White Balance, File Type and Size, Dynamic Focus, ISO, Exposure Compensation, Flash Exposure Compensation, Bracketing and Bracketing Process Indicator, Clock and K (memory overload).

Aperture and Shutter Speed are set as they have been set on a Nikon for some time. The aperture is controlled by the sub-command dial (the dial in the front) and the shutter speeds by the command dial (the dial in the back). Depending on which exposure mode you're in depends on which you can change, aperture or shutter speed. (You have a shutter speed range of 30sec to 1/4000.)

The D100 has the usual exposure mode cast, A (aperture priority), S (shutter priority), P (program mode) and M (manual). In aperture priority, you select the aperture (via sub-command dial) and the camera selects the correct shutter speed (which is stepless though it only reports ½ stops). In shutter priority, you select the shutter speed (command dial) and the camera selects the aperture (which is stepless though it only reports ½ stops). Program mode, the D100 selects the aperture and shutter speed for you. If you don't like the combo of shutter speed/aperture the camera has selected, you can simply rotate the command dial.

This permits you to change the shutter speed and accordingly the aperture. When you're in Flexible Program mode, a P* appears in the LCD panel. The only way to deactivate Flexible Program is to either let the camera turn itself of or you turn it off or change exposure modes. (The exposure mode you have selected is only indicated by the dial or representing letter for the mode in the viewfinder.)

To select one of the four available exposure modes, you simply rotate the dial on the top left of the viewfinder. There is no button to push to rotate the dial, just turn it until the mode you desire is opposite the white line on the viewfinder. Besides the exposure modes, four other functions are accessed by rotating the dial: White Balance (WB), ISO, File Type & Size (QUAL) and Dynamic Focus ([+]).

White Balance on the D100 is little different from the D1 Family.

WB Setting	-3	-2	-1	0	+1	+2	+3
Sunlight	+400k	+200k	+100k	5200k	-200k	-300k	-400k
Shade	+1200k	+800k	+400k	8000k	-500k	-900k	-1300k
Cloudy	+600k	+400k	+200k	6000k	-200k	-400k	-600k
Incandescent	+300k	+200k	+100k	3000k	-100k	-200k	-300k
Fluorescent	+3000k	+2300k	+800k	4200k	-500k	-1200k	-1500k
Flash	+600k	+400k	+200k	5400k	-200k	-400k	-600k

The defaults for the D100 run down the middle of the chart above. The numbers on the left and right are the degrees in Kelvin you can fine tune a particular setting. For example, my favorite is Cloudy -3 which is the equivalent to 6600 degrees Kelvin. To make this all happen, rotate the dial to the left of the viewfinder to WB. When this is accomplished, you'll see a white balance symbol appear in the LCD panel. By rotating the command dial, you can change the white balance. By rotating the sub-command dial, you can fine tune the white balance by + or – 3 (as per the chart above). If you set a + or – to a certain white balance, it remains in place until you program it out.

I've not mention the A, automatic white balance setting yet. In the D1 Family, this white balance setting is useless so I didn't try it out on the D100 until my partner asked about it. Since the D100 calculates white balance different than the D1 Family and the A has a range of 4200-8000°k (greater than the D1 Family), I decided to give it a spin. This is what I found.

The D100 in A performs better than in the D1 Family. I provides reasonable color for most situations. I found though for my personal shooting, I still preferred the Cloudy-3 setting. Shooting Menu.

The D100 has Preset white balance. You can select PRE using the dial, but you must set the exposure mode you want to use in the Shooting Menu first (see pg.xx). The procedure for setting the Preset is outlined on pg.xx.

To set the **ISO** in the D100, rotate the dial to the left of the prism until ISO is opposite the white line. The D100 has the ISO range of 200 – 1600 in 1/3 stop increments. You change the ISO by rotating the command dial and unlike the D1 Family, you must go through all the ISOs to reach one, you can't cycle through them. Once past 1600 ISO, you come up to HI-1 and HI-2 (this can also be set using the Shooting Menu, pg.#). HI-1 gives you the approximate ISO of 3200 and HI-2 the approximate ISO of 6400. (The noise at these higher ISOs is) Custom Setting #3 is a real cool ISO Auto. (HI cannot be used when CS#3 is ON).

By rotating the dial to the left of the viewfinder so the **QUAL** is opposite the white line, you access the fourteen different file types / sizes available in the D100. You see all of your options but one displayed along the left side of the LCD (cannot change RAW from compressed to uncompressed via this method). Here's your options: Raw (NEF), RGB-TIFF, Jpeg-Fine, Normal and Basic. You have two options with Raw, Compressed and Uncompressed (there is no message on the LCD informing you which has been selected, you must look at the Shooting Menu). With all other file formats, you have the option of Large (3008x2000), Medium (2240x1488) and Small (1504x1000). The corresponding file sizes for each are as follows:

Raw (compressed) **9.6MB**
Raw (uncompressed) **4.8-5.8MB**
RGB-TIFF L=**17.4MB**, M=**9.7MB**, S=**4.5MB**
Jpeg – Fine L=**3.0MB**, M=**1.7MB**, S=**790KB**
Jpeg – Normal L=**1.5MB**, M=**870KB**, S=**410KB**
Jpeg – Basic L=**790KB**, M=**460KB**, S=**230KB**
(you can set these settings via the Shooting Menu as well)

Personally, I shot the D100 in either the Fine – Large or Fine – Medium when creating images. I used the other file types / quality settings only when testing. I found for everything I do, the Fine works great, producing beautiful 16x prints! A BIG point with the D100 and the file type / quality setting you select is the write times. As I've already mentioned, the write times of the D100 are not the same as the D1 Family. You need to be aware of this because it could effect your photographic success. In the following chart, the numbers were derived using a freshly charged EN-EL3, 50f1.8AF lens and Lexar 512 24x card. (for testing method, refer to TDG pg.242).

D100 Write Times			
	Raw	Raw-compressed	
1 Frame	5.50sec	39.11sec	
4 Frames	22.15sec	2.36min	
	RGB - TIFF		
	Large	Medium	Small
1 Frame	28.17sec	16.15sec	7.88sec
6 Frames	2.47min	1.36min	46.14sec
	Fine - Jpeg		
	Large	Medium	Small
1 Frame	2.63sec	1.90sec	1.26sec
6 Frames	10.90sec	7.20sec	5.01sec
	Normal - Jpeg		
	Large	Medium	Small
1 Frame	1.82sec	1.39sec	1.04sec
6 Frames	7.04sec	6.70sec	4.55sec
	Basic - Jpeg		
	Large	Medium	Small
1 Frame	1.27sec	1.12sec	1.10sec
6 Frames	6.74sec	6.60sec	4.65sec

This test was done as per pg.242 TDG. Be sure that camera is active prior to testing for accurate times. Be sure CS#4 is OFF for fastest write times.

The instruction book states that for RGB-TIFF, the buffer will only hold 5 frames. This is a typo, it will hold 6. The interesting thing strictly from a mathematical stand point, that the D100 buffer for Raw though the files are smaller than TIFF, is smaller than that for TIFF.

There is a slight addition to these write times that comes from "buffer wake up." When you turn on the D100 or wake it up, you'll notice the green write light on the back of the camera comes on. This momentary wake up of the write system will add at most a second to the above write times (does not effect shooting time). Also be aware that if custom setting #4 is ON, the number of captures is reduced by one so if the max is 6, it's 5 with CS#4 ON.

You can activate **Dynamic Focus** by first rotating the dial to the left of the viewfinder until the [+] is opposite the white line. Next, rotate the command dial until you see + signs appearing in the box in the LCD. Dynamic focus is the same as in the D1 Family. Refer to pg.40 of TDG to learn how it works.

The D100 also has available Single-area AF. You'll know you're in this mode when there are no + symbols in the AF box in the LCD panel. You still have use of the five AF sensors in this mode, but the camera will not automatically switch from one sensor to the next as it does in Dynamic mode. You still have the automatic lock-on tracking, you just don't have the dynamic working for you.

Exposure Compensation in the D100 is not really all the different from any other Nikon. By depressing the ± button on the top right next to the shutter release, you can activate exposure compensation. By depressing the button and rotating the command dial, you can access plus or minus five stops of compensation. By using CS#9, you can set the compensation to ½ or ⅓ stop increments. I personally set mine to ½ increments. When bracketing is activated, a ± appears in both the LCD panel and viewfinder. If you have both exposure compensation and flash exposure compensation activated, you will see both ϟ± and ± in the viewfinder and LCD panel.

Flash Modes in the D100 are you standard Nikon options. By depressing the ϟ button next to the Exposure Comp button and rotating the command dial you can access the five flash mode. They are: Front-curtain sync, Red-eye reduction, Red-eye reduction with slow sync, Slow Sync, Rear-curtain / slow sync. No matter which one of these flash modes you select, you are stuck with a top flash sync speed of just 1/180 (compared to 1/500 with the D1 Family). For my personal photography, this is a major limitation! Having to always be looking in the viewfinder to see if the camera is saying HI gets real old real fast! When the HI message appears, you're only option is to close down the aperture which increases your DoF and shortens you working distance with the flash. All around, this is just a painful process!

In Front-curtain sync the camera syncs at 1/60 – 1/180 and the flash fires when the first shutter curtain starts its travel. In Red-eye reduction, the AF assist lamp comes on for approximately one second to help reduce the effect of red eye. The camera syncs at 1/60 – 1/180. In Red-eye reduction slow sync, you have the red-eye reduction working with shutter speeds of 30sec to 1/180. Slow Sync (my preferred mode) permits the camera to sync the ambient light exposure from 30sec to 1/180 permitting you to meld the light from the flash with the ambient light. Rear-curtain / slow rear curtain permits the same shutter speed range of 30sec to 1/180 with the flash firing at the end of the shutter curtain cycle.

By depressing the ϟ± button at the rear and left of the viewfinder, you activate the **Flash Exposure Compensation**. You have available +1 stop and -3 stop (keep in mind you have ± 3 comp with the SB-80DX). Personally, I didn't find this in camera flash compensation that effective. When using it in conjunction with the built-in pop up flash, the plus has nearly no effect and the minus, only subtle effect. Using this with the SB-28DX, SB-50DX, and SB-80DX, it has the same effect as if you dialed it in directly in the flash. When activated, the ϟ± appears in the LCD panel and viewfinder. If you have both exposure compensation and flash exposure compensation activated, you will see both ϟ± and ± in the viewfinder and LCD panel.

The D100 offers three types of bracketing, exposure bracketing, flash exposure bracketing and white balance bracketing. Exposure bracketing and flash exposure bracketing captures in multiple captures different exposures. White balance bracketing allows you to bracket the white balance setting without manually changing the balance. You select which you're going to bracket via CS#11. You have the options of: AE & Flash, AE Only, Flash Only and WB Bracketing.

You access bracketing by depressing the BKT button on the back left of the camera and then turning the command dial. When exposure bracketing is activated, **BKT** appears in the LCD and the ± starts blinking (it also blinks in the viewfinder). This is true for all except the white balance bracketing. When WB is activated, ◄► start to flash under WB in the lower middle of the LCD panel (they also start blinking in the viewfinder).

For ambient and/or flash exposure bracketing, first select either AE & Flash, AE Only or Flash Only at CS#11. Next, depress the BKT button and rotate the command dial to activate. While depressing the BKT button, rotate the sub-command dial to select bracketing program. You have a number of options for the number of frames and exposure compensation (value determined by CS#9). Refer to pg.92-93 in the instruction book for all the bracketing combination possibilities.

What cool about the D100 is the Bracketing Process Indicator. When activated, right above the capture counter can appear any combination of +◄▮►- depending where you are in the shooting/bracketing process. For example, if you've set the camera to bracket 3F 0.5, you'll see +◄▮►- in the LCD panel and after the first exposure you'll see +◄ ►- and after the next +◄ you'll see and after the last you'll see nothing. The chart on pg.92 of the IB shows you all the symbol / bracketing combos that are possible with the D100.

White balance bracketing is a whole new ballgame in bracketing. You access white balance bracketing as described above. You have the options of 2 or 3 frames and a limited WB adjustment range (as per pg.93 of the IB). Unlike exposure bracketing where you take one frame for each bracketed amount, you only take one capture in white balance bracketing. The camera creates from that one capture the additional bracketed captures. The D100 doesn't bracket from Auto to Cloudy to Shade but rather from -3 to -2 to -1 for a given WB setting. This means you need to make sure that with some bracketing programs, you're not already at -3 and you ask the camera to bracket beyond that. The bracketing process indicator +◄▮►- appears and operates for WB bracketing just like it does for exposure bracketing.

One word of caution in using WB bracketing. The very subtle changes made in the white balance using WB bracketing cannot be observed on the D100's monitor! To see the effect of your bracketing, you're going to need to use your computer monitor.

When you have any custom settings set in the D100, **CSM** appears in the LCD above the frame counter.

Finally, be forewarned that this dial can easily rotate when rubbed up against something like yourself. In this case, some things will naturally not work correctly. If you try to access certain items in the menus and can't, it's more than like this dial has been rotated. You must have the dial set to one of the exposure modes in order to access all menu items.

You might, might, sometime see the CLOCK symbol appear in the LCD panel (see battery pg.xx). If this happens, the clock and calendar in the D100 reset to the default date / time of 2002.01.01 00:00:00. If this happens, recharge the EL-EN3 and reset the date / time via the Set Up Menu.

The last symbol in the LCD panel is a very small k that appears above the capture counter. This appears when you have more than 1000 captures remaining in the CompactFlash card. A small k appears in the viewfinder as well, to the right of the capture counter.

Shooting Mode Dial

The Shooting Mode Dial is the dial at the base of the Function Dial. By depressing the button at the eleven o'clock position, you can rotate the Shooting Mode dial to select one of its three options, Single Frame, Continuous and Self-timer. When in Single Frame, you take one picture each time you depress the shutter release. When the camera is in Continuous mode, the camera continues to fire as long you depress the shutter release. You can capture the maximum of 6 frames (4 RAW) in one burst at 3fps. Self-timer is your basic self-timer and you can regulate the self-timer duration via CS#8.

One of my biggest bug-a-boos with the D100 is its shooting speed which is a combination of fps and write times. Being use to the D1H's 5fps / 40frame buffer, the D100 feels like it's crawling along. When it comes to capturing action, the D100 just doesn't cut it for my photography.

Custom Settings

The D100 has in many ways your typical D1 Family custom settings. With few exceptions, they function the same as in the D1 Family. Rather then listing the similarities to the D1 Family or unique settings, I'm going to just go through all of them. Where appropriate, I'll mention what I've used, how and if it worked for my applications.

You access the Custom Setting Menu by depressing first the MENU button located on the back to the left of the monitor. Depending on where the last menu was left (the D100 remembers the last menu/setting you used even if you turned off the camera or removed the battery), you will or will not have to use the Thumbpad to access Custom Settings. Once you access the CSM MENU (there are four main directories to select from CSM MENU being one, the highlighted feature must be on the left to thumb through the four directories and then you right Thumbpad to access the CSM MENU), you can thumb up and down the custom settings. You have the following available to you:

Custom Settings

R Menu Reset
0 Bank Select
1 Image Review
2 No CF Card?
3 ISO Auto
4 Long Exp. NR
5 File No. Seq.
6 Monitor Off
7 Auto Meter-Off
8 Self-timer
9 EV Step
10 Exposure Comp.
11 BKT Set
12 BKT Order
13 Command Dial
14 AE-L/AF-L
15 AE Lock
16 Illumination
17 Focus Area
18 AF Area Illum
19 Grid Display
20 Dyn. AF AF-S
21 DYN. AF AF-C
22 AF Assist
23 Flash Mode
24 Anit-shock
25 Batt PK AF Btn
26 Batt PK Volume

(default settings are on pg. 145 of the D100 instruction book)

Custom Setting R – Menu Reset

This custom setting permits you to reset all the custom settings to their default. To activate, select R Menu Reset and then depress the right arrow on the Thumbpad. You have two options OFF OFF and ON ON. If you want to preserve your custom settings, exit by having the OFF OFF highlighted. If you want to reset all your custom settings, highlight the ON ON and then depress the right arrow on the Thumbpad. Only the custom settings in the active bank (CS#0 or Shooting Menu) will be set back to their default.

Custom Setting #0 – Bank Select

You can store two separate "banks" or sets of custom settings in the D100, this custom setting permits you to select either bank. The standard bank is A, the second is B, you can select either but only use one at a time. Many ask why is there this custom setting and why are their numerous banks? You might have a diverse shooting schedule where you shoot sports during the day and school dances at night. You might have one set of custom settings for the day stuff and another for night. Instead of having to go back and reset all of your custom settings each time, you can have two separate banks and you activate the set of custom settings you want by just changing banks.

Custom Setting #1 – Image Review

This custom setting determines whether you automatically see an image right after you take the picture or not. If you have CS#1 set to OFF, then you'll see no image once you make the capture. If you have it set to ON (making selection via the Thumbpad) you'll see nearly instantly the image on the monitor. Nikon worked a little magic here because the preview is seen faster than the actual file is written.

Custom Setting #2 – No CF Card

When set this custom setting permits you to shoot when there is no CompactFlash card inserted into the camera, or, prevents you from shooting when no CompactFlash card is inserted. Using the Thumbpad, if you activate ON, the shutter release locks when no CompactFlash card is inserted. When OFF is selected, you can fire the camera when no CompactFlash card is inserted. If you're tethered directly to a computer using Nikon Capture 3, the shutter is enabled no matter how you set this custom setting.

Custom Setting #3 – ISO Auto

This is a kind of cool fail safe for some shooters! The theory is, when you have CS#3 activated, the D100 will automatically raise the ISO if the light level is too low for the exposure setting you've set. Not only will it do this, but the ISO is stepless! For example, when I shot test shots the D100 selected ISO 900 which is an ISO you cannot manually set.

Obviously this custom setting will not go into effect on a bright sunny day. Raising ISOs is for lower light levels, so that's when it goes into effect. I found to make it come on for testing, I had to basically be shooting at 30sec+.

If you have ON selected, you cannot select HI-1 or HI-2 (either via the Shooting Mode Dial or Shooting Menu). If you have already selected manually HI-1 or HI-2, then CS#3 is deactivated and you cannot set it (CS#3 is not available in the CS MENU when in HI-1/HI-2).

Custom Setting #4 – Long Exp NR

To me, this is one of the highlights of the D100! With this custom setting activated, when you have exposures longer than ½ second, the D100 automatically takes a second "subtractive" image along with the original capture. The D100 then does the work of processing the two images to produce one, gorgeous nearly noise free image! It works really great! Just be aware that it slows down the image processing time and that you will not hear the camera fire off a second frame. The LCD will have the message "Job nr" when the second subtractive capture is being made. Watch the green lamp on the back of the camera to determine when the camera is finished.

To activate simply go to the custom setting menu, select CS#4 and select ON (using the Thumbpad). Keep in mind that when using this custom setting you reduce the maximum number of captures the D100's buffer will hold to 3, 2 in RAW mode.

Custom Setting #5 – File No. Seq.

File number sequencing is important to me, it makes working with images in the computer after the fact easier, less mental! When File No. Sep. is activated (using the Thumbpad) the D100 retains folder and

file information so when you insert a new CompactFlash card, the file number is one greater than the previous. If this is tuned off, the file number is reset to 0001 each time a new CompactFlash card is inserted.

There is the additional option of Reset in the CS#5 menu. This resets the folders and files back to 100-0001. I've personally not tested this, so anything can happen (refer to pg.xx)

Custom Setting #6 – Monitor Off

This option determines the length of time the monitor stays on, either to view an image or menu. You have five options: 10s, 20s (default), 1min, 5min and 10min. With the D1 Family, the monitor on time could effect your battery life if used a lot. I don't think this is an issue with the D100 with the default. Since battery life in the D100 is so remarkable, I have mine D100 set to 1min. I did just out of curiosity try the ten minute setting to see what happens. It does drain the battery faster, I wouldn't recommend it.

I didn't have a EH-5 AC adapter to test with, but it's stated that when the EH-5 is attached to the D100, the monitor stays on for 10 minutes no matter what CS#6 may be set at.

Custom Setting #7 – Auto Meter-Off

This is another rather cut and dry custom setting that you use to keep your meter on after you are no longer depressing the shutter release. Since the D100 doesn't appear to have a battery life problem, you can set this according to your needs. You have the options of: 4s, 6s (default), 8s, 16s and 30min (30min would take its toll on the battery).

Custom Setting #8 – Self-Timer

This custom setting is right out of the custom setting playbook. This custom setting determines how fast you must run after you hit the shutter release. You have the options of: 2s, 5s, 10s (default), or 20s.

Custom Setting #9 – EV Step

This is an excellent custom setting that I take advantage of 100% of the time. This custom setting controls for you exposure and flash compensation as well as bracketing. The default is 1/3 stop but I personally like the other option, ½ stop. The reason I prefer ½ is because of the latitude of digital film, ½ stop has a greater effect. You select the desired EV stop by using the Thumbpad to highlight and select.

Custom Setting #10 – Exposure Comp (exposure compensation)

This custom setting on the D1 Family is fairly popular which is probably why it's been incorporated in the D100. You have two options you can select using the Thumbpad to select exposure compensation. The default of OFF, setting exposure compensation is achieved by depressing the ± button while rotating the command dial. Your other option is ON which permits you to make exposure compensation by just rotating either command or sub-command dial.

Depending on which exposure mode you're operating in determines which dial you use to make exposure compensation. If you're in Aperture priority, you use the command dial. If you're in Shutter priority or Program mode, the sub-command dial sets the exposure compensation. This is if you leave CS#13 set to its default of OFF. If you have CS#13 set to ON, then in Aperture priority the sub-command dial changes the exposure compensation. In Shutter priority or Program mode, the command dial changes exposure compensation.

One word of warning. When you have CS#10 set to ON, be aware that it's really easy to dial in compensation by accident when not desired. If you're using this custom setting, the only warning you'll see if the compensation has been activated is the ± symbol in the LCD and viewfinder.

Custom Setting #11 – BKT Set (bracketing set)

This custom setting permits you to select which function you wish to bracket. Using the Thumbpad, you can select the default, ambient and flash exposure, or ambient only or flash only or white balance. I personally have the D100 set to white balance. If you're in RAW mode, white balance doesn't work even though you can select it.

Custom Setting #12 – BKT Order (bracketing order)

This custom setting permits you to change the order in which bracketing is performed. The default is [N] MTR>Under>Over which translates to 0 > + > - in that order. By using the Thumbpad you can select Under>MTR>Over which translates to - > 0 > + in that order.

Custom Setting #13 – Command Dial

Using this custom setting you can reassign the duties of the command and sub-command dials. By default, the main command dial changes shutter speed and sub-command changes aperture (the OFF

selection). By using the Thumbpad you can select ON which reassigns the command dial to aperture control and the sub-command dial to shutter speeds (remember the ON effect CS#10).

Custom Setting #14 – AE-L/AF-L

This custom setting effects the AE-L/AF-L button located at the right rear of the camera near the viewfinder by reassigning its functions. You have five options: AE-L/AF-L Lock (default), AE Lock Only, AF Lock Only, AE Lock Hold and AF-On. Once you've made your selection you implement it by depressing the AE-L/AF-L button.

When AE-L/AF-L Lock is selected, you can lock both the focus and exposure. When AE Lock Only is selected (using the Thumbpad) when you depress the AE-L/AF-L Lock button the exposure is locked. When AF Lock is selected, you lock just the focus (not effecting exposure). With AE Lock Hold selected, when you depress the AE-L/AF-L Lock button you lock the exposure until you depress the AE-L/AF-L Lock button again. When you select AF-On, the camera will focus every time you depress the AE-L/AF-L Lock button.

There is a problem implementing this custom setting. A biggie to me is just depressing the AE-L/AF-L Lock button. It has to do with hand size and face structure, but just getting my finger up to that button to depress it and then to keep depressing it is a major pain! It's near impossible for me to shoot using proper handholding technique using this button.

The other problem I have with this custom setting is, there is not always a indication in the viewfinder you're actually depressing the button! Depending on how you set CS#15, the same EL appears when you depress the AE-L/AF-L Lock button as when you depress and hold down the shutter release. With no documentation, how do you know if the EL in the viewfinder is for depressing the AE-L/AF-L Lock button or just the EL that shows up? This is just too confusing for this old photographer!

Custom Setting #15 – AE Lock

I like this custom setting, it makes sense! The default is OFF which assigns exposure lock to just the AE-L/AF-L button. When you select ON using the Thumbpad, exposure lock occurs automatically when you depress the shutter release and hold it down. When using this option, EL appears in the viewfinder when you're depressing the shutter release. You just have to be careful you don't shoot yourself in the foot when you have this custom setting set to ON, and lock the wrong exposure.

Custom Setting #16 – Illumination

This custom setting permits you to light up your life! When the default OFF is selected, the LCD illuminator only lights up when you depress the illuminator button located top far right by the shutter release. When you select ON by using the Thumbpad, the LCD lights when you touch any button.

Custom Setting #17 – Focus Area

When it comes to following and capturing action, I think this is a very important custom setting to take advantage of. This setting determines how you can select the active AF sensor. The default of OFF, means you are "bound" by the four outer focus area sensors. That's to say that if you've selected the far left AF sensor and you want to select the far right sensor, you have to hit the right arrow on the Thumbpad twice to get there.

I prefer and use the ON or Wrap option, When this option is activated, if you are using the left AF sensor and you want to change to the right AF sensor, you just hit the left arrow of the Thumbpad once and you're there. Verbally describing this doesn't really do justice to the action. I would highly recommend you just try it and see for yourself.

Custom Setting #18 – AF Area Illumination

This is a pretty cool custom setting that I like. You have three options, Auto (default), OFF and ON, you select the desired setting using the Thumbpad. Auto is my preference. In auto, the active AF sensor is either black or red depending on the ambient light level. In normal daylight it's black and in lower levels it goes red. If working is a nocturnal situation where the red might make it hard for you to see the subject, you can select OFF and turn this feature off. If you want red AF sensors all the time, you can select ON.

Does this also effect the grids? If you activate the grid lines (CS#19) then they too will go red or black according on how you set this custom setting. Personally, I really like the Auto in conjunction with CS#19.

Custom Setting #19 – Grid Display (On-Demand Grid Lines)

This is one of the coolest features that originated in the N80! When you activate this custom setting (via the Thumbpad) grid lines appear in the viewfinder. The lines start at the outside of the frame and head

towards the center, stopping at the circle. The lines don't create the "rule of thirds" but where they meet and stop with the circle are the mythical four points of the rule of thirds.

When CS#18 is set to Auto or ON, these grid lines are either black or red accordingly. With this custom setting you replace having to have to buy the E Screen while getting the lines in Red! Way cool!

Custom Setting #20 – Dyn AF AF-S (Dynamic AF Single-Servo)

This and the next custom setting are for enabling closest-subject priority. This custom setting enables closest-subject when you're shooting in Single-servo autofocus (the focus mode lever is pointing at S). The default is OFF, use the Thumbpad to select ON if you want to activate closest-subject priority.

Custom Setting #21 – Dyn AF AF-S (Dynamic AF Continuous-Servo)

This custom setting is for enabling closest-subject priority when you're shooting in continuous-servo autofocus (the focus mode lever is pointing at c). The default is OFF, use the Thumbpad to select ON if you want to activate closest-subject priority.

Custom Setting #22 – AF Assist

This custom setting activates the AF Illumination lamp (white circle on the left front of the D100) in low light settings. This works only with the built-in flash, when it's popped up. When activated (use the Thumbpad to select ON), the illuminator "lights" up the subject for a couple of seconds, long enough for the AF to lock on. What's not mentioned in the IB with this custom setting is two other important settings you must make to activate the illuminator. The focus mode selector must be set to S and you must have the center AF sensor active. If you don't have these two set, the illuminator will not come on. (The AF assist has an effective range of only .5-3m.)

Custom Setting #23 - Flash Mode

This is an interesting custom setting, not really sure how to report it to you this early in the game. You have two options, the default of D-TTL auto flash and M Manual. The DTTL option is what you use 99.9% of the time. This option makes the flash "automatic" in that the flash exposure is handled for you, no exposure calculations required. The D100 does a marvelous job with flash exposure, this option works beautifully.

Does this option work with any flash? If you attach the SB-50DX and you pop up the flash (which you can do with the 50) then the two settings can be utilized. If you attach the SB-28DX or SB-80DX , then you can only operate in the DTTL mode.

When the CS#23 is set to DTTL, the pre-monitor flash fires so the camera's flash TTL meter can work correctly. The problem is the pre-monitor flash prevents one from using multiple flash units, especially the SB-80DX in wireless mode. When you switch CS#23 to Manual, you disable the pre-monitor flash. You can then use the SB-80DX in wireless mode (as described in the SB-80 section).

I've had wireless TTL work in both of these modes, but it's inconsistent in the DTTL mode. What do I recommend you do, do as the instruction book states, take test shots!

Custom Setting #24 – Anti-shock

This custom setting is to minimize camera movement caused by the mirror. The instruction book application for this custom setting is when shooting via a microscope. Personally, I don't think this custom setting makes any difference. When set to the default, OFF, nothing happens. When you select ON, the mirror raises just heartbeats prior to the actual exposure. The theory being that the mirror goes up and any movement it creates stops prior to the actual exposure.

The next two custom settings only work when the MB-D100 is attached to the camera. They don't even show up on the CSM MENU until it is attached.

Custom Setting #25 – Batt PK AF Btn (battery pack AF button)

This custom setting changes the functions assigned to the AF-ON button located on the MB-D100. You have three options: CSM14+Focus, Same as CSM14 (default) and Focus Area Only. With CSM14+Focus selected, the AF-ON button on the MB-D100 performs just like the AE-L/AF-L button on the, locking both exposure and focus (I did not get to test this). When Same as CSM14 is selected (the default), whatever you selected via CS#14 is in effect when you depress the AF-ON button on the MB-D100. When Focus Area Only is selected (via the Thumbpad) then you can select the AF sensor by depressing the AF-ON button and rotating the sub-command dial.

Custom Setting #26 – Batt PK Volume

Most don't realize that when the MB-D100 is attached, you can record your voice on the file. This custom setting simply sets the volume of the playback through the MB-D100 speaker. You have the option of 0-5, 0 being mute and 5 the loudest.

Set Up Menu

The Set Up Menu is where you "program" some of the basic functions that make the D100 work. The key word here is basic because you could almost never visit this menu and never miss it. Of the seven options in this menu, only the Date is truly something you need to work with (and it's important). You select the Set Up Menu by using the Thumbpad to scroll up the left four menu options until you reach the Set Up Menu and then your depress the right arrow of the Thumbpad to enter the Set Up Menu.

Format –formatting CompactFlash cards

One thing you need to do each time you load a CompactFlash card is format it. You have two way of accomplishing this in the D100, one is via the Set Up Menu. You select the Format option by highlighting it with the Thumbpad and then you depress the right arrow. At this point a big warning comes up filling the monitor. You'll see *Warning! All images will be deleted* and the options NO, YES. To format the card, select YES with the Thumbpad and then depress the ENTER button. EVERYTHING on the card will be erased with this action.

There is a whole lot easier and faster way of formatting the CF card than this. The two button formatting is my preferred method. By depressing the illumination button (located near the shutter release) and the flash exposure bracketing button (left of the viewfinder) simultaneously, the display on the LCD after two seconds will start to blink. You then let up on the two buttons and then depress them again simultaneously briefly until FOR appears in the counter window. Once FOR appears, let up from the two buttons and once a number appears again in the window, you're good to go with a formatted card.

The reason I recommend you format your card every time you load it is to avoid a possible problem sometime down the road. This is a real simple procedure that could save you some day!

LCD Brightness – Adjusting Monitor Brightness

By depressing the Thumbpad and selecting LCD Brightness and then depressing the right arrow, you can effect the brightness level on the monitor. The default and standard setting is 0 but you can change it from -2 to 2. I personally just leave it a 0, but you might want to change it based on the ambient light of where you're viewing it.

Mirror Lock-up – Readying the CCD for inspection

You can only access this option when the D100 is connected to the EH-5 AC adapter. If you don't have one connected, you can't even access this option. When the EH-5 is connected, when you depress the shutter release, the mirror is locked up until you depress the shutter release again.

The question in your mind is, does this operation stop the electrical charge to the CCD and does this matter? To the first question, I have no clue at this time. As to the second question, it might but that's a hard call. It is possible that if there is a slight charge in the CCD (using the Bulb method of cleaning), it might keep some stubborn dust particles from coming off.

Video Output – Choosing a Video Standard

You have two options for video output, NTSC or PAL. Check with the device you're connecting to and then select the appropriate one.

Date – Setting the system date and time

It is very important that the first thing you do when you get your D100 is you set the date and time. You do that here. And you need to keep resetting the time. There is a warning about this in the IB and I found the clock in my D100 lost about a hour a week!

You select the clock option using the Thumbpad as well as make your settings. You use the up or down arrow to change year, month, day and hour, minute, second. You move between the fields by depressing either the right or left arrow. Set your settings by depressing the ENTER button.

These settings do not change when you remove and the EN-EL3 battery for charging, the clock battery keeps it current. But if the battery goes dead as mentioned earlier, then the date and time reset to the default.

Language

This option sets up the language for all the menus that you read. You have five options: Deutsch (German), English, Francais (French), Japanese, Espanol (Spanish). Select the preferred language by highlighting it using the Thumbpad and finish the process by right thumbing.

Image Comment – Adding comments to Photographs

This is a cool option that while it won't improve your images, it's fun! With this option, you can add a comment, up to 36 characters to each file. The one drawback to this is the time it takes to type in your comment. It's not conducive changing the comment for each capture, it takes way too long.

You first need to input a message before can have it embedded into the file. So first select Image Comment and then Input Comment from the Image Comment menu (using the Thumbpad). With this done, a screen comes up with letters, numbers and a few symbols. At the bottom is a white box where you'll see what you've "typed" appear.

You input letters by first highlighting the letter you want to type then depressing the button. You keep doing this to type in your message. You can go back and change letter inputs by depressing the button and rotating the command dial. You can delete letters by highlighting them and then depressing the trash can. In this way, you type in your message.

To have your message embedded into your file, you next go to the Input Command menu and select Attach Command. Depress the right arrow of the Thumbpad and a check appears in the box to the left of the Attach Command. Next, go up and highlight Done and depress the right arrow on the Thumbpad and you're all set.

You can see your comment, at least 12 characters of it in one of the display menus on the monitor. You can see the full comment in the EXIF using either NC3, NV5 or DigitalPro. Personally, I just typed in my name so that way every file will have my name on it.

Playback Menu

This is the menu you access to look at and work with the images you have captured. Other than one option, you can only access these options via this menu.

Delete – Deleting Photographs

It has been said, the delete key is your friend.

You can delete images via this menu, either one or multiples at a time, or all at once. When you go to the Playback Menu, highlight Delete with the Thumbpad and then enter by depressing the right arrow on the Thumbpad. Once in you'll see two options, Selected and All. With Selected highlighted, depress the right arrow and you'll see the images you captured in a 2x3. You can thumb through the images by depressing the right and left arrow of the Thumbpad. You select the images you want to delete be depressing either the up or down arrow. When an image is selected a trash can symbol will appear in the lower right corner of the selected image. You can remove the trash can by simply depressing the up or down arrow again. One you've made your selections, you depress the ENTER button which brings up a message warning you you're about to delete images. You then have the options of NO or YES. Highlight your option using the Thumbpad and then depress ENTER.

Your other option is All and when that is highlighted and you depress the right arrow of the Thumbpad, you are presented with a big warning *Deleting all images* with the option of No or YES. Select your desire and then depress ENTER.

You can also delete images on the fly by depressing the |□| button (located left of the monitor) then depressing the TRASH can button, down arrow on the Thumbpad and then depressing the ENTER button. You can delete one image at a time on the fly using this method.

On the subject of deleting, with the D1 Family deleting images on the fly can cause some goofies to occur (refer to TDG). I've not found this to happen with the D100. With the D1 Family, the monitor quality is such that deleting based on sharpness from what you see in the monitor might not be a good idea. With the new zoom function of the D100, you could delete based on focus/out of focus with more confidence that the image is really out of focus. But I still recommend to folks they don't delete until the images are back in the computer.

Folder Designate – Folder Options

This option permits you to alter the folder numbering and assignments in the D100. This helps you organize and view your images in the camera. The D100 names folders xxxND100 where the xxx would be a three digit number like 100ND100 (not to be confused with file number DSC_xxxx). You can use Folder Designate to create your own folder if so desired.

You select Folder Designate from the Playback Menu using the Thumbpad and then depressing the right arrow on the Thumbpad you get to New or Folder Select. When you highlight and select New a screen comes up with a three digit number. You can change the current file number; the next number to assign to a folder automatically appears on the screen. Once you create a new folder, all subsequent images will be stored in that folder. You can only go as high as 999.

Your other option is Folder Select which offers you three options when you depress the right arrow of the Thumbpad, ND100, All or Current. When ND100 is selected, images created and saved will all be visible in playback from this folder. When All is selected, images created by any camera conforming to DCF can be viewed. When Current is selected only the images in the current folder can be previewed (folders created before you select Current cannot be previewed).

If you depress when you turn on the camera on, a new folder will be created if no empty folders are already present. This is correct unless you're already at file number 999 in which case the error message CHR appears.

Slide Show – Automated Playback

You can use this option to create and play your own slideshow of images. Keep in mind that you can only view images from the folder you have selected in Folder Designate.

You start by going to the Playback Menu and selecting Slide Show on the menu using the Thumbpad. Depress the right arrow on the Thumbpad and when Start is highlighted all the images in the Folder Designate will appear one by one on the monitor. The images will change as per the Frame Intvl that is set. You have the options of 2s, 3s, 5s and 10s intervals that you can select and start with the right arrow of the Thumbpad.

While the slide show is being displayed, you can perform the following operations. If you hit the top arrow on the Thumbpad you can return to the previous image in the slide show. If you depress the bottom arrow, you can skip to the next frame. By depressing either the right or left arrow, you can change the information menu that is or is not being displayed. By depressing the ENTER button you can pause the slide show. Depressing the MENU button ends the slide show on the image being displayed. The |□| button stops the slide show and returns you to the Playback menu. And finally, depress the shutter release halfway ends the slide show, turns off the monitor and returns you to shooting. If you depress the ENTER button or the show comes to an end, a menu appears giving you the option to Restart the slide show or change the Frame Intvl and restart the show.

One of the neat things about this feature is you can with the EG-D1 cable, do your slide show on the monitor like a TV. This can be a real fun and great way of sharing your images with friends and family!

Hide Image – Hiding images from Playback

You can select images and "tag" them so they won't be displayed during a slide show. This does not delete a file, merely prevents them from appearing during a slide show. Select Hide Image from the Playback Menu using the Thumbpad. When this is done images appear on the monitor in a 2x3 pattern. You move through the images with the left / right arrow of the Thumbpad (the file number appears in the lower right corner of each image). You select the images you want to "hide" by depressing the up/down arrow. You can "unhide" an image in the same way you hide it. When an image is tagged to be hidden, a box with a slash through it appears in the upper right corner of the image. Once you've "hidden" all the images desired, depress the ENTER button to finish.

Print Set – Making prints directly from the CompactFlash card

This option is for those who want to take their CompactFlash card directly from the camera and insert it into a DPOF device for direct prints. Certain personal printers and camera stores offer stations where this option would come in handy. If you want to take advantage of this option, you must shoot in either Color Mode I or III (pg.xx). The D100 uses EXIF 2.2 which tags the file with information to provide the best possible color when using this option.

Select Print Set Image from the Playback Menu using the Thumbpad. Then Select/Set and when this is done images appear on the monitor in a 2x3 pattern. You move through the images with the left / right arrow of the Thumbpad (the file number appears in the lower right corner of each image). You select the images you want to "print" by depressing the up/down arrow. You can "unprint" an image in the same way you hide it. When an image is tagged to be printed, a printer icon with a number next to it appears in the upper right corner of the image. Once you've selected all the images to be printed, depress the ENTER button to finish.

Once ENTER is depressed, you have the options of Done, Data Imprint and Imprint Date. If you want to have data or date printed with your images, you select the desired using the Thumbpad. Once that is accomplished you highlight Done with the Thumbpad and then depress the right arrow.

If you change your mind, you highlight and access Print Set with the Thumbpad bringing up the options of Select/Set and Cancel Order again. Highlight Cancel Order and then depress the right arrow. This will cancel the Print Order without changing anything else.

You cannot use this feature with NEF files. It's important that once you have created a print order you don't mess with the files in a computer prior to printing as that can mess up your print order.

Display Mode – Know what you're getting!

This is a very important feature I feel because we cannot trust the monitor to accurately display exposure. Unlike the D1 family, the only place you can set this feature is in the Playback menu.

When you highlight Display Mode in the Playback Menu and then depress the right arrow, four options appear: Image Only, Histogram, Highlights or Both. Image only is an obvious option, when selected it means that only the image itself appears when you depress the |□| button. When Histogram is selected (using the Thumbpad), when you view an image (and the right screen is selected), a bar graph appears at the bottom of the image. When Highlights is selected, those areas of the image that are beyond the range of the film blink black to white. When Both is selected, you can view histograms and highlights but on separate screens, not both at the same time.

The D100 displays four screens of information, you cycle through them by depressing the right arrow of the Thumbpad (you can use the left as well but the screens are meant to be read using the right to cycle through them in order). If you depress the right arrow one more time after the last text screen is displayed, if you have Histogram / Highlights or Both selected, the next screen you'll see is either Histogram or Highlights (depending on what you have selected). If you have both selected, you'll see histogram on the first screen and highlights on the second screen. You do not see them both at the same time.

But just what are you seeing?

David has a marvelous definition of Histograms (TDG pg.204) but here's a brief explanation. In the small Histogram graph, you can see on a scale of 0-256, shadows on the left and highlights on the right. This graph informs those who know how to read them information on exposure for the image being previewed (and the range being captured). Highlights or blinkies as I like to call them, are a graphic representation of the histogram chart. With blinkies, those areas in the image that are beyond the range of the film, blink black and white, black and white. Where histograms tell you you might have exposure problems, blinkies show you that you do and where. That's why I recommend blinkies to folks. They are a great way to learn light!

Shooting Menu

The Shooting Menu is in many ways a duplicate way of setting functions on the D100. I personally don't use the shooting menu very often, but here's how you use it. You have nine options of which you can only see five at a time on the monitor. The options are: Bank Select, Image Quality, Resolution, White Balance, ISO, Image Sharpening, Tone Compensation, Color Mode and Hue Adjustment. You access the shooting menu like everything else, with the Thumbpad.

Bank Select –Choosing a Settings Bank

As with custom setting #0, you can create two different banks of custom settings. You can select either Bank A or Bank B by simply highlighting Bank Select, right arrow and select either A or B. You can do this exact same thing by using custom setting #0.

Image Quality – File Type and Compression

This information is no different as to file types and quality that you'll find under QUAL pg.xx. That is by far the fastest way to change these settings. There is one exception to this and that's setting RAW to compressed or uncompressed. You can only perform that operation via this menu option. Highlight Image Quality then right thumb on the Thumbpad. Thumb to NEF (Raw), highlight and right thumb coming to the two options of compressed or uncompressed. Select the one desired. When you select Raw as you're shooting format, you will be shooting in whatever method you have selected.

You can select any image quality setting you desire via this menu in the same manor as selecting Raw. You can perform this same function as described on pg.xx.

Be sure to read what David says about this on pagexx.

Resolution – Choosing an Image Size

You can set Large (3008x2000), Medium (2240x1488) and Small (1504x1000) file size via this option (all except Raw). This is the same thing that is described under QUAL on pg.xx. You select the file size desired by highlighting Resolution, right thumbing, highlighting the desired setting and go. You'll see what you've selected in the LCD panel on the far left.

White Balance – Keeping Color True

I like the subtitle in the instruction book for this option. You can find definitions and information about white balance on page.xx.

You do need to use this menu for setting your Preset WB. You start by selecting White Bal then right thumbing to go to the next menu where you highlight and right thumb on WB Preset. You then select the exposure method you're going to use, you have the option of all four exposure modes. Once that is selected, you depress Done. Next set the function dial to WB and select Pre then rotate the sub-command dial. When done correctly, PRE will flash in the LCD. At that point manually focus on a gray card and depress the shutter release all the way. It will sound like the image is being taken, but that's not the case. If you did everything correctly, GOOD will flash on the top of the LCD and GD in the viewfinder for a couple of seconds. If it didn't work, then NO GD appears in the LCD and viewfinder. With Good, you can proceed to shoot with Pre wb.

You can select white balance by highlighting it then right thumb calling up the White Bal menu. Only four of the eight options are displayed, so you have to thumb up or down to access all the options. Once you select the desired white balance, you can right thumb and call up the white bal fine tune menu. You can then set the fine tune by depressing the up or down arrow (this is not documented in the IB under Shooting Menu).

ISO – Setting Sensitivity

You can access and select ISO by highlighting ISO from the shooting menu and then right thumbing. This brings up the ISO options of 200-1600 and HI-1 and HI-2. To learn about ISO options and limitations with the D100, refer to page.xx.

Image Sharpening – Making Edges More Distinct

At the time of the writing of this eBook, some folks were questioning if the D100 "over" sharpens or it has an "aggressive" sharpening. To be point blank honest, with the limited number of D100s I've had to shoot with, I can't really comment on this. In testing, we set Imaging Sharpening to Auto and we liked our results, we didn't find any problems. One thing that was frustrating to us is, the D100 reports in the EXIF only Auto for sharpening and not the specific setting it selected like Normal or Low (not the case with the D1 Family). It was impossible without testing to determine exactly what the D100 had selected.

Go to the Shooting Menu and highlight Image Sharpening; right thumb and you can access the five options: Auto (default), Normal, Low, High and None. (To get a better understanding of sharpening and what works best for your workflow, refer to TDG pg.201.) Highlight the option you desire, right thumb and you're all set!

Tone Comp. – Adjusting Contrast

Tone compensation is a very important facet of the digital capture! In the D1X/H, you can't trust the Tone Comp to Auto, you need to set it manually (what a pain). Is that the case with the D100? One thing I did test, and test, and test was the Tone Comp because of my experience with the X/H. I am happy to report that as of the writing of this eBook I had had no problems with the Auto setting for Tone Comp. I'm still going to push it to see if it truly is fixed, but as of right now I am satisfied with its performance.

To set Tone Comp, highlight Tone Comp. in the Shooting Menu and right thumb. This calls up the Tone Comp. menu and your five options of: Auto, Normal, Less Contrast, More Contrast and Custom. Auto will automatically set the tone curve for you for optimal results for the scene at hand. Normal is the setting the camera will use 90% of the time. Less Contrast is for when you want less contrast because you're photographing a high contrast scene. More contrast is for when you want more contrast because you're shooting a low contrast scene. Custom is for using curves you create yourself in NC3.

Color Mode – Setting Colors Based on Workflow

The D100 has thrown a new curve (get it, color, curve) at us when it comes to color management. We now have three options for Color Mode, I, II and III. And in case it isn't confusing enough, #I and #III are both called the same, sRGB!

To select the desired Color Mode, highlight Color Mode in the Shooting Menu and then right thumb, this brings up the menu with the three options. Select the Color Mode you desire by highlighting it and then right thumb to set it.

The three options are sRGB, AdobeRGB and sRGB. What are the differences? Mode I and III are similar only in that they have "less" color compared to AdobeRGB for reproduction. Mode II is my preferred color mode because it is capturing and recording as much color as possible. The difference between Mode I and Mode III is that Mode III is biased in that it's colors are slanted towards capturing the "Velvia" look. For more on this, be sure to check out David's section pg.xx.

Hue Adjustment – Controlling Color

This is an adjustment that I personally rarely play with, simply because I forget it's an option. The principle behind hue is to combine two colors to create one, the example in the D100 instruction is a good one. Red combined with an amount of yellow produces orange. In the case of Hue Adjustment, if you're starting with red as the color you're photographing and you raise the Hue above the default of 0, the images will become more orange. In practice, you might be able to use this to improve the color of a sunset (keep in mind you cannot go by the monitor as "the" color you're capturing).

To select, highlight Hue Adjustment in the Shooting Menu and then right thumb. This brings up the menu where you can adjust the hue by ± 9° in increment of 3. You thumb the up or down to make you setting and then right thumb to set it.

I highly recommend you play with this setting. But make tests and check your results on your computer. Hue can really make things pop or really mess them up, so only use when you know what your results are going to be.

Back Controls

Unlike the D1 Family, the D100 has a number of its feature buttons right out in the open on the back. Even though a number of these are repeats from the above text, they are worth going through so there is no confusion.

Diopter Correction (previously covered but I feel it's important to go over again)

The D100 provides diopter correction of -2 to +1. The plus is at the top and the minus is at the bottom. The problem is, there is no indication, no line to tell you where zero might be. There is also no lock or detent to keep the diopter set once you make your selection. To make things even worse, it's easy to knock the diopter out of whack. This is not a good system!

To first set the diopter, look through the viewfinder, looking at the lines on the screen (activate CS#19). You want to slide the diopter up and down slowly, looking at the lines. You're looking to make the lines dark, as dark as possible. You will probably will have to slide the control up and down a few times to find the right spot. Once you do, make note of what notch on the diopter slider lines up with the Matrix symbol to the right. That's your only way remembering where to set the diopter when it gets knocked.

Metering Pattern Selector

The D100 has three metering systems, 3D Matrix, Center-weighted and Spot (range of -1 to 19). You select the desired metering pattern by rotating the collar around the AE-L/AF-L button and aligning the white line to the metering symbol around the collar.

The 3D Matrix is my preferred metering system. This ten segment meter does a marvelous job metering for the vast majority of the lighting situations you'll run into. The one short coming of matrix metering is photographing white subjects in low light. The matrix meter tends to underexpose.

The Center-weighted is biased on a 8mm circle in the center of the viewfinder (it's 60% center-weighted). There is no 8mm reference circle in the center, so you need to use the 12mm circle for a general reference to what the meter is seeing.

Spot meter is a 3mm spot which is basially the size of one AF sensor. Like the D1 Family, the AF sensor you select will do the spot metering. This permits you to spot meter and not have the subject dead center. If you have closet subject priority selected (CS#20/21) then only the center AF sensor can be used.

The instruction book states that only with G and D lenses will you be able to get 3D Matrix metering. I've tested AF lenses and they've had no problem with metering which comes under the CPU definition. While you can mount AI or AIS lenses onto the D100, you cannot meter with them. There is no aperture indexing ring around the lens mount for these lenses to communicate with the camera body. If you look at the lens mounting ring at about the 7:00 o'clock position, you'll find a small tab. This is what the G & D lenses activate to communicate to the camera the lens' aperture is all the way closed down.

Monitor Button |□|

By depressing the monitor button to the left of the monitor, you can view images you've captured. If you depress the monitor button again, you turn the monitor off. Custom Setting #6 determines how long the monitor will stay on.

Once the monitor is on, you can view one of seven possible screens. The first one just displays the file number in the lower right corner. Right thumbing (you can left thumb, but the proper "order" is going right), the next screen to appear over the image displays: frame number (top right corner), folder/file number, date/time and file type, size (lower portion of the frame). The next screen to appear has: Camera, Firm Ver, Metering, Shutter, Aperture, Exposure Mode, Exp +/-, Focal Length. This information is over layed over the center of the image. The next screen displays: ISO, White Bal., White Bal +/-, Tone, Sharpness, Color Mode, Flash Mode, Comment. The next screen is histogram (if selected in the Playback Menu), next is Highlights and the last is just the image.

One nice thing about the D100 that's a fix from the D1 Family is in regards to these screens. The D100 retains and remembers the screen you just looked at so next time you depress the monitor button, you'll see the same screen (this includes when you turn the camera off or remove the batteries). This includes histograms and highlights.

MENU Button

The use of this button is pretty obvious, you depress it to call up the various menus previously described.

Button

The Thumbnail button performs a couple of functions. If you depress the monitor and call up one image, you can by depressing the thumbnail button and rotating the command dial see contact sheets. You have the option of just one image, 2x2 or 3x3. Whatever display mode you leave it in is what you'll have the next time you depress the monitor button.

The other cool use of the thumbnail button is for the zoom feature. You first depress the monitor button to call up an image then depress the ENTER for the first zoom. You then depress and hold the button while rotating the command dial, you can zoom in eight fold, really increasing the image size. This is the nicest zoom feature Nikon has incorporated into any digital camera yet!

Button

The Protect button only serves one purpose, to prevent images from being accidentally deleted. When an image is displayed on the monitor in any form in relation to any other operation, if you depress the protect button, then that image cannot be accidentally deleted. There is only one exception to this and that's formatting the CF card, which deletes everything on the card.

ENTER Button

The ENTER button is used a lot even though only to verify and carry out other programming commands. The ENTER button is used in conjunction with other operations and only has one unique function, and that's starting the image zoom.

When an image is displayed on the monitor, by depressing the ENTER button, you can zoom in on that image (more zooming is conducted as described under the Thumbnail button). Once an image has been zoomed in on, you can use the Thumbpad to move around in the image to examine other portions of that

image. This is true for the single zoom or greater magnification achieved using the Thumbnail option. If you depress the ENTER button after an image has been zoomed, the image return to its normal size (appx 98% of the image captured). If you want to view other images, you'll have to "dezoom" or the camera turns off the monitor on you. This is why you see a magnifier next to the ENTER button, to remind you of it's other task.

 Button

The Trash Can button located on the right side of the monitor, serves only one function, deletion! When you have an image displayed on the monitor, you can delete it on the fly by first depressing the  button. Once you've done this, a menu comes up in which you'll have to down thumb and highlight yes, than making the deletion happen by depressing the ENTER button.

Lock Lever

It serves just one purpose, to locate the Thumbpad. When you change the lever so it's pointing to L, the Thumbpad selector is locked, you cannot change AF sensors. I personally never use this, so it's always point to the dot.

Default Settings

Focus Area – Center
AF-area mode – Single-area AF
Flexible program – Off
Exposure Compensation – 0.0
Autoexposure lock – Off
Bracketing – Off
Flash sync mode – Front Curtain
Flash compensation – 0.0
Image Quality – Jpeg-Normal
Resolution – Large
White Balance – Auto
White Balance Adjustment – 0
ISO - 200

D100 EXIF Information

Date
Time
File Size / Quality
Camera
Firm Version
Shutter
Aperture
Exposure Mode
Exposure Compensation
Focal Length
ISO
White Balance
White Balance +/-
Tone
Sharpness
Color Mode
Flash Mode
Comment
Hue
Lens
Focus Mode

Metering Mode

The Nikon SB-80DX

In the spring of 2002, Nikon released the SB-80DX. While it has the "DX" so it works with the D1 Family and D100 digital cameras, its features benefit the conventional more than the digital photographer. As I've already made publicly known, I'm disappointed the 80DX doesn't do more for the D1 Family photographer. Despite this, it's still the best flash option for the Nikon digital photographer. As most know, I use flash a lot in my photography so it's fair to say I've pounded the SB-80DX in just a short time and learned some of the things that make it tick. That's what I want to share with you here.

There are six "improvements" in the SB-80DX that I like and one that I couldn't live without. They are:

*AF illuminator out to 34 feet
*Auto Stand-by
*improved ISO foot
*+/- 3 stops exposure comp
*exposure comp in 1/6 increments
*five second modeling light

I will go through these and some of the other features of the SB-80DX in this chapter which includes using multiple flash. Not until I actually sat down to write this chapter did I decide though the chapters direction. The SB-80DX as you will see, does a lot more for the conventional photographer than the digital photographer. Since this eBook is in follow up to and about the D1 Family and D100, I've elected not to go into the SB-80DX's conventional operation. This will make the points clearer and avoid any confusion from folks reading conventional use and thinking it applies to digital.

SB-80DX Basic Layout

The look of the SB-80DX is slightly different from the SB-28DX or its predecessors. Actual factory specs for size is, SB-80DX is 2.8 x 5 3.6 inches: SB-28DX 2.7 x 5 x 3.6 inches. The SB-80DX essentially is just a tad taller than the SB-28DX. This increased height is due to the new, vastly improved flash foot. The flash foot on the on the SB-80DX is a modified SB-50DX foot and a radical departure from all previous flash foots. (The SB-80DX is .5oz heavier than the SB-28DX, a total weight without batteries of 11.8oz.)

The foot is a solid metal piece embedded into the body of the flash. There is no more thumb screw knob to rotate to lock the flash into the camera's flash socket. No more four screws screwed into plastic attaching the foot to the base (a very weak joint on all previous units). The foot of the SB-80DX is so secure that if you hit the flash against something, there is a likelihood that the camera's prism will dent before the flash foot breaks (I've heard of this happening already)! Where I would carry spare flash feet for the SB-28DX, this is not only not needed with the 80DX, but not possible because of the construction of the 80DX.

Building on this improvement of the foot is the locking mechanism. Replacing the slow and frustrating thumb knob is a simple flip lock lever. The locking lever with a quick and easy flip to the right locks the flash into the camera's flash shoe. At the same time, the lever extends the locking pin into the camera's flash foot. While it doesn't seem as "tight" as the older foots in fact the foot of the SB-80DX locks in solidly!

It might seem like a trivial point, but the battery door on the SB-80DX has been updated. In place of the anchoring, hinging door like the 28DX, the 80DX has a door that detaches completely yet hangs on by a single plastic strap. While it might make replacing batteries easier, this is a real weak design.

Looking at the front of the SB-80DX you'll notice a change in cosmetics and placement. The red-eye lamp on the 80DX is slightly smaller thanks to a better lens to protect the light. The AF illuminator appears to be smaller as the red dome is physically smaller. While this is the case, the actual bulb inside is brighter which brings us to one of the improvements of the 80DX. The 80DX AF illuminator reaches 34 feet compared to 18 feet of the 28DX!

You'll also notice a change in the sensor for A-Automatic. Lower on the unit, on the left instead of the right and with a highly modified light gathering cone, the sensor on the 80DX is an improvement on the 28DX. The basic disastrous "TTL" technology in the D1/SB-28DX combo was not known when the SB-28 was first designed (28 & 28DX share the same design) so it's A sensor wasn't state of the art. With this lesson learned, the 80DX has an improved sensor. While not as needed as with the 28DX, it's nice to know it's there!

The tilt mechanism and angles on the 80DX is the same as on the 28DX. You have the vertical detents at 90, 75, 65 and 45 degrees as well as -7 degrees (for macro work, line under distance blinks when at this setting). You can rotate the flash head on a horizontal axis from 90 degrees to the right and 180 degrees to the left. All of this is accomplished by depressing the head lock release button on the side of the flash.

The zoom of the of the 80DX has a greater range than any other Nikon flash unit. The flash zoom head has a range of 24-105mm by itself and can go down to 14mm with supplied Nikon Diffusion Dome SW-10H. In comparison, the 28DX has the range of 24-85mm and 18mm with built-in adapter. This is a good place to talk about the Nikon Diffusion Dome.

The SB-80DX comes with a Sto-fen knock off, the Nikon Diffusion Dome SW-10H. Physically smaller than the Sto-fen, when attached to the SB-80DX, the 80DX automatically changes to 14mm coverage. The SW-10H is not required for 14mm lens coverage. It is strongly suggested, but you can reach 14mm coverage by pulling out the built-in wide angle flash adapter (designed for 17mm coverage) and then manually changing the flash head coverage by depressing the 3Tree symbol to 14mm.

The SW-10H when slipped on (it can only go on one way) depresses a button on the bottom side of the flash head. When this button is depressed (you can do this with your finger to check it out) the zoom head goes to 14mm, whether you want it to or not. If you use the Sto-fen Omni Bounce for the SB-28DX on the 80DX, it will not depress the button so you can control the zoom head. If you use the Better Beamer or other project a flash unit, you must check to make sure the method you use to attach the unit doesn't depress the button.

The SW-10H is designed to spread the light to cover a 14mm lens (35mm) which is does very well. It is also recommended for macro work, and it does a very nice job for that as well. But using it for macro is one place where I have problems with it going to 14mm. The SW-10H already "sucks" up two+ stops of light which when shooting macro, that hurts! With the beam of light spread to 14mm, you loose another stop when shooting macro compared to manually setting the flash to 85mm. As you might be gathering, I like the idea of a unit to mellow out the light from the flash which is why I have the Sto-fen to start with. I don't like the flash going to 14mm automatically without anyway to turn it off. While the SW-10H is really nicely made and smaller than the Sto-fen, unless you want to cut a notch in the SW-10H to have control over the flash head, you're stuck!

As mentioned, the SB-80DX has the built-in wide angle flash adapter as well as white card. I like having both of these built-in! I use one or both quite often on various subjects and they do a really nice job. As I mentioned earlier in the camera chapter updates, when using the white card, I set the flash differently then if I was shooting the same set up on a conventional body. When the flash is the main light and I'm bouncing off a white card, I set the flash to DTTL -2/3 compensation (yes, the flash is in the bounce position). When the flash is the for fill and I'm using a white card, I set the flash to DTTL -2/3 (flash still in bounce position). While this is totally different from conventional, it's what I've found works the best the majority of the time when shooting balance flash.

SB-80DX back layout has a total make over that I personally prefer of any Nikon Speedlight! Gone are the small button that required a pen knife to depress. It's pretty clean and simple with a MODE and ON/OFF button and a large thumb dial with four select points. This is all that is required to operate and program the 80DX. On the top left and part of flash head is the modeling light button. This is a real cool feature especially for learning light that I'll cover in a moment.

Once last comment on the SB-80DX layout and that's it's "more power" which is an internal upgrade. In Nikon's own specs, they state the 80DX is 1/3 stop brighter than the 28DX. Hey, when it comes to using the darn thing, expect the same output power with both 80DX and 28DX. You'll be very hard pressed to find an operational difference in the light output!

Operating the SB-80DX

In general you'll find the SB-80DX is a better operating, more accurate and effective digital flash than the SB-28DX. Of course, one needs only to look at what we're comparing to to realize it's not saying much. One of the really nice features of the 80DX is the wireless TTL slave feature. It works beautifully! I've used it with up to four units to date. There's only one small, tiny, little, almost not worth mentioning problem with it. IT DOESN'T WORK WITH DIGITAL! Brother…how dumb is that! I've tested it with conventional and it does work really well, but that does us no good!

The basic problem (wish I had numbers to provide you) is the Monitor Preflash of the 80DX fires off faster than that of the 28DX. This is what causes the problems for the wireless but what makes the 80DX in general more reliable than the 28DX. While this is disappointing at least for the majority of the flash work we do, we have a better unit than before! On to making this puppy work!

ON/OFF Button

You turn the SB-80DX on by depressing the ON/OFF button for a 0.5 second or longer. You'll find the button is such that you can turn it on or off even when wearing gloves which is a nice thing. The SB-80DX is powered by 4 AA batteries. These have to be inserted even if you use an auxiliary power source. My favorite combo is 4 AA PowerEx 1700mAh batteries in the 80DX and a SD-8A powered by the same batteries plugged into the HV socket on the 80DX. This combo gives me basically instantaneous recycle times which is what I need the majority of the time. The 80DX carries on the very nice feature of retaining all of its settings if you remove the flash from the camera flash shoe or remove the batteries.

Mode Button

By depressing the MODE button, you access the various modes on the 80DX. When attached to a D1 Family or D100, you have the options of DTTL, DTTL, AA, M, M. Just what do these various modes do and when should you use them?

DTTL – This is your primary mode of operation when the flash is your main light. This is completely different from the SB-28DX! Exposure us still OTL, not TTL, so exposure information is generated by the Monitor Preflash (refer to pg.42 TDG). While this system had many, many limitation and exceptions to remember to use this mode, such is not the case with the SB-80DX. Thanks goodness!

In this mode you generally are shooting flash as your main light, which means there is no exposure compensation dialed in. Once you have selected your aperture, you can look at the rear LCD of the flash which will communicate numerically (not a distance scale) the effective distance for the flash. Just like conventional, you need to operate within this distance but unlike the D1/28DX you are not limited to the distance of the Monitor Preflash. Now if you are doing all of this and the 80DX does a goofy, which it can 1 out of 25 exposures, you can hear it goof up. The flash will "dump" its entire capacitor which you can audibly hear. This is when you chimp and check (which you should do with each, first flash exposure just to check).

I can honestly say that when I use the 80DX, if I don't hear the capacitor dump, I just keep on shooting. This is totally opposite of the 28DX where we had to worry about distances and background. The 80DX is no perfect, but it's nowhere as unreliable in this mode as the 28DX. (Camera must be set to either Matrix or Center-weighted metering to use this mode.)

DTTL – This was the mode with conventional I used the majority of the time so I would be in control of exposure compensation, and not the computer. It doesn't work that same way in practice though on digital as on conventional. I find myself using this mode generally when shooting in bounce mode, flash is the main light.

Be aware that in this mode the Monitor Preflash has been disabled! In Standard TTL (or bouncing the flash) the Monitor Preflash has been canceled. This is really confusing when you see your results and you know that flash exposure is based on the Monitor Preflash. There is a slight difference between **DTTL** and DTTL but man, not what you would think with the Monitor Preflash turned off.

AA – This old mainstay, is it only for multiple flash now? The AA is the same as A on the 28X (AA standing for Auto Aperture). This flash exposure system works off the Thyristor that is on the front of the flash (be sure to keep it clean if you want to depend on it). I know of a number of 80DX owners who only shoot with this mode, hold over from habits started with the 28DX. I've not found myself going to AA to get the right exposure. The "TTL" modes have been doing everything I need for single flash exposure.

M – This puts the flash into Manual mode permitting the you to dial in your own lighting rations of flash fill. The camera needs to be in either Aperture or Manual exposure mode to use M on the flash. Once you have selected M (by depressing the mode button) you then cycle through the options of ratios depressing the – or + sign on the 80DX thumb pad. You have the options when you depress the - of 1/1, ½ (0.0), ½ (-0.3), ½ (-0.7), ¼ (0.0), ¼ (-0.3), ¼ (-0.7) and so on all the way to 1/128 (0.0), FP. You have the options when you depress the + of 1/1, ½ (0.0), ½ (+0.3), ½ (+0.7), ¼ (0.0), ¼ (+0.3), ¼ (+0.7) and so on all the way to 1/128 (0.0), FP (pg. 47 of the 80DX IB). I honestly don't know of any photographer using this, I know I don't but if you need this kind of control, this flash sure does deliver it!

In this loop of compensation ratios, you will find the FP option. This actually works pretty darn well yet most never try it. Its main design feature is to permit one to shoot in bright light with a narrow DoF. To this end, it works. In this mode, you can sync the flash with shutter speeds of 1/500 – 1/16000! Does it work, you bet! I'm the first to admit the instruction in the IB are as clear as mud. This is what I do.

If I'm shooting flash fill and the camera says HI, I depress the mode button until M appears. Since I leave the flash in FP mode, once at M I'm good to go. There is a technical way you are supposed to do this, but I rarely follow it. Technically, you're supposed to look at the distance scale on the back of the 80DX and whatever that says, you need to be that distance from the subject. I just shoot and chimp to see what the results are. You've got to keep in mind you're shooting a high shutter speed which means the light is probably pretty harsh to start with so this is a compromise at best anyways. But it does work, give it a try!

M⚡⚡ – This is the repeating flash mode. Explaining this mode requires including tables from the IB which I don't have permission to reproduce, so I won't go into any great depth here. The just of this mode is for the flash to fire off a burst of flashes to expose the subject multiple times in one capture. You normally use this mode when the camera is set to either Bulb or a really long shutter speed duration. Refer to the instruction book for complete instructions.

If you depress the MODE & SEL button (dead center of the thumb pad) at the same time, you can recall the underexposure value of the flash capture (you must be in DTTL mode). If you depress the MODE & ON/OFF you reset all settings including the custom settings back to the factory defaults.

(Note: by depressing and holding down the Mode & Sel buttons after an exposure, you can recall underexposure if the ready light blinks multiple times after the exposure.)

The Thumb Pad

Nikon in a very smart move, removed all those incredibly hard button to depress on the back of the flash. The SB-80DX has five buttons all incorporated into just one, large thumb pad on the back of the flash. And along with the five features you can change with the thumb pad, you can also access the "custom settings" which makes programming the flash easier and faster. Let's start with the cool new stuff, the custom functions.

Custom Settings

While they are called custom functions, you'll find the are basic settings that previously were set by depressing a combination of buttons on other units. Nikon cleaned up this process but putting them all in control of the thumb pad. To access the custom settings, depress the SEL button, dead center of the thumb pad, for two seconds. When this is accomplished, the distance scale, compensation and other info on the LCD disappears and you'll see SEL appear. You're now ready to program.

The first option that is available is **Wireless Flash Mode**. The problem is if the SB-80DX is connected to any D1 Family camera or the D100, there is no wireless flash mode. This is only for conventional shooters only. So for us digital folks, the first option is a blank screen

The second option is **Sound Monitor** for the wireless flash mode. Guess what, since we have no wireless flash mode, we have no sound monitor. So the second option is a blank screen (have I got you excited yet about the custom settings?).

The third option, is actually there for us to use! The third option is **AF-assist Illuminator**, a vast improvement over the past couple Nikon flashes. The AF Illuminator on my SB-80DX tests out to be effective at 31 feet, huge improvement over the 18 feet of the SB-28DX (this is with a f2.8 lens). This custom setting permits you to activate or deactivate the AF illuminator. This is accomplished by depressing either the 3Tree or 1Tree symbols. You toggle back and forth between NO AF-ILL and AF-

ILL (seen in the lower right corner of the LCD). If the message says NO AF-ILL, you've disabled the function. (To get the AF illuminator to come on, you've got set the camera firing mode and AF mode to S and have the center AF sensor selected.)

When the SB-80DX is connected to a D1 Family camera or the D100, when you first depress the SEL button for two seconds, the first screen you'll see is the AF-ILL or NO AF-ILL. To complete your setting and lock it into memory, depress the SEL button for two seconds until the shooting display on the LCD appears.

The default from the factory is AF-ILL.

The forth option is really cool and one of my favorite new "custom settings." The forth is **Standby Function**. You have six options for how long you want the flash to stay on once you are no longer depressing the shutter release. You have 40sec (appears as 40), 80Sec (appears as 80), 160sec (appears as 160), 300sec (appears as 300), No Standby (appears as - - - -) and my favorite Auto (appears as Auto). You'll see SEL in the top left corner, the option of Standby time in the center and STBY in the lower right corner when you're programming. You select the desired Standby time by cycling through the options depressing either the 3Tree or 1Tree symbol until the desired option appears.

The 40, 80, 160 and 300 options are pretty obvious, this is the time the flash will remain on and capacitor charged after the shutter release is no longer depressed. The No Standy is obvious, the flash goes off right away saving some battery power. My favorite, Auto, set the flash to go off when the camera goes off (which you set via CS#15, pg.21/94/158 TDG). Why do I like this? This maximizes battery power in the flash while syncing with my shooting habits since the flash goes off when the camera goes off. To complete your setting and lock it into memory, depress the SEL button for two seconds until the shooting display on the LCD appears.

The default from the factory is 40sec.

The fifth setting is **Distance Unit**. You can select the SB-80DX to read out the effective distance of the flash in either meters or feet. This is accomplished by bringing up the screen which when brand new out of the box, appears as SEL in the top left corner and, lower case m, in the lower right corner. You change from one setting to the other by depressing the 3Tree or 1Tree symbol until either ft or m appears. To complete your setting and lock it into memory, depress the SEL button for two seconds until the shooting display on the LCD appears.

The default from the factory is m (meters).

The sixth custom setting option is **Power Zoom Function**. The Power Zoom function when activated permits the flash head to zoom back and forth to match the focal length being used. You can see this when you have a zoom lens attached

To complete your setting and lock it into memory, depress the SEL button for two seconds until the shooting display on the LCD appears.

The seventh setting is **Emergency Mode**. I have to admit when I first saw this title, I was wondering what was built into the SB-80DX? This mode is to prevent flash coverage problems if the Wide Angle Adapter should be broken off the flash. If you break off the Wide Angle Adapter, you'd go to this custom setting and turn ON to prevent possible problems. Sorry, I've not personally tried this custom setting so I don't have any firsthand knowledge to pass along. To complete your setting and lock it into memory, depress the SEL button for two seconds until the shooting display on the LCD appears.

The eight and last custom setting is **LCD Panel Illumination**. This custom setting makes it so anytime you want the LCD panel on the SB-80DX (and the camera as well) to light up, all you have to do is depress any button on the back of the flash. This is the factory default. When selecting your option, toggle the + or – sign until SEL appears in the top left corner and a light bulb on the right, center. You then depress the 3Tree or 1Tree to turn this option on or off. Keep in mind that if you have this option turned off but you want the LCD panel to light up, you can simply rotate the On/Off on the camera body to illumination to make everything light up. If you have this option set to ON, the light bulb symbol will be present in the shooting LCD display to remind you have activated it.

To complete your setting and lock it into memory, depress the SEL button for two seconds until the shooting display on the LCD appears. The factory default is ON (I have mine set to OFF).

Shooting Mode

When you have the SB-80DX in regular shooting mode, the thumb pad effects operation of certain features. To make these changes, you must be sure you're in "shooting mode" and not "custom setting" mode.

You can manually change the **zoom position** of the flash head. By depressing the 3Tree or 1Tree you can cycle through 24, 28, 35, 50, 70, and 105mm (if the wide angle adapter is deployed, you only have the option of 14 or 17mm). As you cycle through these options, you'll see a M appear above the word ZOOM in the lower left corner. This M will disappear at one zoom head setting, the one appropriate for the lens attached. Once you manually set the zoom head and the M is present, the zoom head will no longer automatically adjust its coverage to match your lens. Automatic zooming will only occur when the M does not appear above the word ZOOM.

By depressing the + or – symbols on the thumb pad, you access the **exposure compensation**. The SB-80DX is the first Nikon flash to provide the ability of going + 3 stops of compensation! Why is this such a hot deal, be sure to read In Camera Dodge further down. The SB-80DX has a range of +/- three stops which is creatively really cool. You access these by depressing either the + or – symbols and then watching the compensation in the top right corner.

Unlike other flash units, the SB-80DX when attached to a digital body, cycles through both traditionally thought of 1/3 and ½ stop increments simultaneously, or 1/6 stops. For example you start at nothing appearing in the top right corner signifying no compensation. You then can proceed to 0.2 (1/6), 0.3 (1/3), 0.5 (1/2), 0.7(2/3), 0.8 (5/6), 1.0, 1.2 (1 1/6), 1.3 (1 1/3) and so on, either + or - ! This is a big improvement especially for digital where we have so much film latitude to start with, we can fine tune flash exposure even better now!

The SB-80DX on the D1…does it solve the problem?

The short answer, no. The CYA answer is, it's a tad batter but that's not saying much. You might be able to use the SB-80DX a little more on the TTL mode rather than the AA mode, especially with dark backgrounds, but I'm not sure an extra 15% of usability is worth jumping up and down about. Obviously the pre-monitor flash in the SB-80DX is "improved" but it doesn't appear this improvement is enough to make up for the shortcomings in the D1 flash software.

If you want consistent flash photography with the D1, you still need to learn what is on pg.42 of TDG.

The SB-80DX and D100

Simply said, it all works just like it should! What do I mean by this? TTL, wireless, exposure comp, the whole enchilada works on the D100 just like on a conventional body! In other words, the SB-80DX works much better on the D100 then on the D1 Family, that sucks! The only thing that's new by using the SB-80DX on the D100 that I've not touched on is the wireless feature, so let me explain just how neat that is!

The Wireless Custom Setting on the SB-80DX is a no-brainer to use. Depress the thumb pad for 2 seconds to call up the settings. As you thumb through the options, you'll see a small curved arrow appear in the lower left corner with the word OFF in the center of the LCD. Depress either the 1Tree or 3Tree to change the function to ON. That's it, it's activated (this is for the slave flash, not the one attached to the camera). You have two options in wireless mode, A (auto) or M (manual) which you can determine by the A or M next to the wireless curved arrow in the lower left corner of the LCD. You switch modes by first being in wireless and then depressing the MODE button on the flash (I've only used the A mode). In A mode, the slaved, wireless flash works up to approximately 23 feet from the subject. You can use the M mode to create flash ratios.

The next screen on the custom settings you'll see SEL in the top left corner and a sound symbol right below it. You can now either turn off the wireless sound Okie Dokie sound or turn it on. In the beginning when testing, you might want this on. When the wireless is working correctly (which it does unless too close or too far from the subject), you'll hear two beeps if the flash fired correctly and continual beeps for 3sec if incorrect.

This system works pretty seamlessly. When in the wireless mode, the modeling light does not function. If you want to use the modeling light to check out your lighting prior to shooting, you simply

turn off the wireless, test, then reactivate the wireless. Since you're shooting digital, you can simply just take a test picture just as easily. And that's just how simple flash is with the SB-80DX on the D100.

In Camera Dodge

This is an old "trick" that started back with the N8008. All it involves is dialing in minus compensation in the camera body and plus in the flash and letting the computers deal with the exposure from there. Here's what we're accomplishing.

The idea is to underexpose the ambient light while properly exposing the subject with the flash. The underexposure we dial into the camera body will accomplish underexposing the ambient light. How much is determined by the lighting at hand and your desires. Generally, whatever amount of minus you dial into the camera, you dial in the same amount into the flash, but plus. So for example if you dial in -1 into the body, you would dial in +1 on the flash.

The underexposure in the camera body effects both the exposure of the camera and the flash. The minus in the body will also underexpose the flash. The compensation you dial into the flash will only effect the flash, it will not effect the body. If the body has -1 and the flash +1, the ambient light is underexposed by one stop and the flash will properly expose the subject.

What makes the SB-80DX so cool is it provides you +3 stops of compensation where the SB-28DX is only +1 stop. The two extra stops permits you to dial in more minus compensation in the body to underexpose the ambient light when the light is really hard or you really want a "spotlight" on the subject. This is a real plus (great pun) to our flash photography.

Multiple TTL Flash Photography

TTL flash digital flash photography is painful!

I had a huge section written on just how to make this work (now scraped). I've done it now at least four different ways successfully, for brief periods of time. I've done it with many different flashes with wide ranging serial numbers. I've had it working perfectly one day and the next day with the every exact same set up except for recharged batteries and had it not work. Simply put, this flash system is all screwed up!

There is only one way that works all the time and that's basically the way the instruction book states. This is not a TTL system! You simply set the main flash, the one connected to the hot shoe of the camera to A or AA (SB-28DX / SB-80DX) and then set the SB-80DX to wireless A mode and shoot. This works just fine as long as the flash are no closer than the minimum distance indicated on the LCD panel. While not in TTL mode, the A mode works very well and delivers great flash exposures.

As for those other methods I've used successfully, briefly, I'm not going to explain them. Odds are that they will work for you too, briefly, before going kafooy! If I were you, I'd write my congressman and complain!

SB-80DX Goofies

This is the first flash I have ever used that had goofies. These can happen when the flash is being used single or wireless, hardwired or wireless and there is no rhyme or reason to it.

*you hear the zoom head cycle like it's zooming in and out. Causes no harm, doesn't change anything, it just makes its own little happy noise.

*will go from DTTL to AA all on it's own. This is a pain as it can royally mess you up!

*zoom setting will go from 105 to 24mm all on it's own. Can be a problem depending on what you're shooting.

*can turn itself from AA to wireless when hardwired.

There is no fixes to these problems yet that I know about. I've written Nikon who thinks I've gone off the deep end on this. I had a group of digital shooters in AZ who, when I told these problems to gave me a look of perhaps I'd been in the sun too much. That's until while I was giving a demo, the flash all on its own changed settings. And as the week progressed, these things happened to them whether they were shooting digital or conventional.

If I ever find a cause or fix, I'll post it at www.nikondigital.org. In the meantime, be aware this happens!

New Digital Products

With the luxury of unlimited pages (since we're not paying for a book to be printed), I want to make you aware of a couple of "new" products not covered in **The D1 Generation**.

CompactFlash Cards

The Lexar 512 24x CompactFlash Card

Speed…why is it important? For many applications in photography, it simply isn't important. For me personally, it's very important though. The time it takes the D1H to write can make the difference in capturing action or not, capturing the one great image in a series or saying, %&(&)@ later. That's why every time a faster card comes out, I get it to see it if will make a difference in my photography.

Unlike the 16x card which I didn't feel really made that big a difference from the 12x speed I had gotten use to, I think the 24x card is a must for my work. There is a difference between the 24x and the 16x, but there's an even bigger difference between the 24x and the 12x, which most photographers shoot with. Here's how the numbers compare for me in my D1H.

Lexar CompactFlash Card Speed Comparisons						
File Format	**40 frames – 512 24x**	**40 frames – 512 16x**	**40 frames – 512 12x**	**1 frame – 512 24x**	**1 frame – 512 16x**	**1 frame – 512 12x**
Basic	23.36 sec	24.1 sec	24.8 sec	.138 sec	.15 sec	.18 sec
Normal	23.77 sec	24.0 sec	24.7 sec	.147 sec	.18 sec	.21 sec
Fine	24.49 sec	25.2 sec	25.8 sec	.168 sec	.19 sec	.23 sec
HI YCbCr TIFF	1.549 min	2.186 min	2.216 min	2.962 sec	3.17 sec	3.24 sec
HI RGB TIFF	3.312 min	3.497 min	3.541 min	4.958 sec	5.46 sec	5.68 sec
HI Raw*	53.89 sec	1.047 min	1.076 min	1.936 sec	2.41 sec	2.45 sec
*RAW is only a 27 frame burst, not 40						
tested with D1H set to M 1/125, manual focus with newly charged EN-4 for each card, default tone & sharpening						

Many photographers ask why I use this methodology for testing card speed which is different from most testers. I guess it's just the way I've always done things which is to test under actual conditions. I'm very sure that you could get a much more accurate write time speeds for these cards using a computer to test them, much better than my timing using a stop watch and watching the green light on the back of the D1H. When I'm shooting though, it's with the camera and not the computer so the computer's time doesn't really reflect IMHO what I'm going to experience in the field. That's why I test in this way.

Just for fun, I decided to run the same tests for the D1X, this is what I found.

Lexar CompactFlash Card Speed Comparisons						
File Format	**9 frames – 512 24x**	**9 frames – 512 16x**	**9 frames – 512 12x**	**1 frame – 512 24x**	**1 frame – 512 16x**	**1 frame – 512 12x**
Basic	9.83 sec	9.98 sec	9.90 sec	.55 sec	.56 sec	.52 sec
Normal	9.96 sec	10.4 sec	10.58 sec	.59 sec	.70 sec	.61 sec
Fine	11.14 sec	11.24 sec	11.6 sec	.74 sec	.95 sec	.85 sec
HI YCbCr TIFF	1.01 min	1.09 min	1.09 min	.66 sec	.71 sec	.72 sec
HI RGB TIFF	1.43 min	1.53 min	1.57 min	10.95 sec	12.1 sec	12.4 sec
HI Raw*	24.08 sec	30.1 sec	29.5sec	3.7 sec	4.7 sec	4.6 sec
*RAW is only a 6 frame burst, not 9						
tested with D1X set to M 1/125, manual focus, Large file with newly charged EN-4 for each card, default tone & sharpening						

The times for the D1X bugged me enough that I did the test over for each card. I normally take three timings for each settings, add them together and divide by three to get an average. I did this each time for both series of tests but I then took the two averages for the two series, added them together and divided them by two to obtain the numbers you see above. What bugged me were the 16x and 12x went back and

forth on which had the best times for a given setting. Clearly though, the new 24x does the best job of the three cards.

I hope this trivia gives you some idea where you should spend you CF money. Before you email me and ask if I'm going to test the 1GB CF cards, let me answer that for you. I have no plans to at this time. If in the future new cameras demand more space because they have bigger files than present cameras, I might reconsider. But for right now, I simply don't want to put that many images on one card. Even with Photo Rescue which I use often with the D1X, I just don't want that many images on one card. (Keep in mind, I don't shoot large files so I get about 430 captures per 512 card.)

The Digital Camera Battery

The Digital Camera Battery is not new to the market place. With the performance I'm getting out of the Nikon EN-4 battery, their size and weight, I had felt that EN-4s were the best option for the money in powering the D1, D1X and D1H for my photography. After relying on this system for two years without any problems or loss of images due to power blackout, my first doubts about the EN-4 performance arose just prior to my trip into the Yukon Territory.

I was heading out to photograph Dall Sheep over 1000 feet up a steep hillside (that is, I climbed up 1000 feet to the sheep) with a possible low of -10 degrees. After climbing the hillside and being amongst the sheep, the last thing I wanted was to suddenly be out of power because of the cold zapping the EN-4 (which never did occur). So, I bought the 30W Digital Camera Battery ($240) as inexpensive power insurance. Wow….did it work out even better than I could have ever dreamt!

The Digital Camera Battery plugs into the DC socket on the front of the D1/X/H. When this is done, the camera is kept "active," it never turns off after however many seconds you have the camera set for auto sleep. This meant for me that I always had the camera "on" and never had to deal with a lag time in the camera waking up. This made all the difference in the world in capturing two images including that of a Lynx that just appeared right in front of me! I would have been out in the cold in capturing the image if I hadn't had the DCB plugged in! This constantly having the camera on is a great feature of the Digital Camera Battery!

The Digital Camera Battery nuts and bolts are pretty simple. First, be sure to buy the case for the battery, that makes it really simple to hang the Digital Camera Battery from your tripod. Next, connect the cord to the battery and then to the camera (with the camera off), turn on the battery and confirm the green light is lit and then turn on the camera. Lastly, shoot and shoot and shoot. I've filled 2-512 and 2-320 cards and not had the status lights go from green to yellow, and that's at -9 degrees!

Do I recommend the DCB all the time? No. I recommend it and use it when I'm going to be "parked" somewhere for a time, waiting for the subject. The DCB is not light, weighing a couple of pounds. Being plugged into the front of the camera doesn't make it easy to use if you're handholding. I find myself using it just with my longer lenses, 300f2.8, 400f2.8 and 600f4 AFS on a tripod.

The Digital Camera Battery can do a lot more (like power the camera to clean the CCD using CS#8, see above), and they have other larger sizes (though I think the 30W is plenty for just the body). Be sure to check them out at www.digitalcamerabattery.com!