Nikon D80 User's Guide

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CONTENTS

INTRODUCTION

This will teach you to be an expert on the Nikon D80's controls
and menus. It also includes a lot of tips, tricks, and the settings I prefer to use.

To get great photos you still need to get yourself to the right place at the right
time and point the camera in the right direction, which is a lot harder than
mastering the D80. Right out of the box at default settings the D80 does a
great job so long as you preset the exposure compensation to -0.7. Making a
great photo involves locations, timing, patience and a whole lot more.

Below are the basics. Explicit details follow in later pages.

Many tricks are in the pages below. Feel free to skim to find these great tricks,
like inserting your © and contact info automatically into every file, preventing
blinking with flash photos, making the zoom preview image go away
immediately and Auto ISO.

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use of this PDF.

It took me two months to write this D200 User's Guide. I work for tips.

 If you find it as helpful as a book you might have had to buy or a workshop
you may have had to take, feel free to help me write more.

Feel free to send me a few bucks at KenRockwell.com/donate.htm,
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THANKS!
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BASICS: CAMERA SETTINGS

I leave most settings at their defaults.

I shoot with the top left mode dial in P, Program Exposure mode.

Many of these menu options are shown only after you select the FULL MENUS option in the Setup Menu and are often deactivated in anything except the P, S, A and M modes.

I reset everything every time I use my camera, much as a pilot uses a checklist before flight to prevent any switches from being in the wrong position. When I don't check first, I often have left my D80 in some screwy mode from shooting in the dark the night before.

Nikon has an easy reset feature. I use it every time! My standard operating setting is only a few clicks different from the defaults.

RESET

Find the two buttons with **green** dots next to them on the top right of the D80. They are the +/- * and AF * buttons. Hold them both down for a few seconds. The top LCD blinks and everything is back to normal.

I do this every time I use my D80. If I forget, I may have the resolution or White Balance or ISO or God knows what set to something screwy and spoil all my shots. I'll see WB problems on the LCD, but I won't notice if I left my D80 at ISO 1,600 from the night before. That's why I always use reset.

Reset leaves the detailed menu tweaks alone. It's smart enough to reset only the big dumb things I might have moved overnight.

Reset resets flash exposure compensations and sync modes, but doesn't reset any screwy settings you may have made in Custom Setting 22 for remote or manual flash. Reset resets mostly everything tactical, which is mostly you see on the top LCD. It leaves alone strategic items like languages, file numbering and Optimize Image settings.

QUALity

I use Large, JPG, BASIC.

Reset brings you to NORMAL JPG. Once I've reset I'll immediately change to my preferred QUAL setting: BASIC. Do this by pressing the QUAL button (bottom left rear) and spinning the rear dial one click to the right. This shows as L and BASIC on the top LCD. L stands for Large image size (3,872 x 2,592 pixels) and BASIC JPG compression.

I'm a data cheapskate. I prefer small files. For most people not shooting hundreds of throw-away images a day, feel free to leave it in NORMAL. NORMAL makes files twice as large with a tiny bit less blockiness if you're looking closely at the files printed 3 feet (1m) wide. I prefer smaller files in exchange for almost invisible levels of blockiness.

See my D200 Quality Settings page for more explicit detail and examples of these settings on a D200. My D80 does the same thing, but lacks the Optimize Quality JPG Compression mode I prefer on my D200.

Exposure Compensation

I set my exposure compensation to -0.7 because my D80's metering firmware is defective. It usually overexposes.

Set -0.7 by holding the +/- button we just used for reset and turning the rear dial two clicks to the right.

Sadly we'll often have to adjust this depending on the subject. It's no big deal: just look at the image on the LCD and click it towards the left (+) to lighten the image, and to the right (-) to darken it for the next shot. This is why I prefer my D200, which has a superior meter because it rarely needs any fiddling.

Shutter Advance Mode

I use Continuous (the bearded rectangle). I get one shot with one press of the shutter, and if I hold the shutter button my D80 shoots three frames per second. I do this in dim light so I can pick the sharpest image. For most shots of moving things I fire several rounds and pick the one with the best expressions and gestures. Of course I use a professional sorting tool on a 30" screen to make selecting files trivial.

These are the only things I change from the reset mode. Everything else I tweak below is unchanged by reset.

ISO

I use 100 and Auto ISO. Auto ISO increases the ISO automatically as it gets dark so I don't have to. It shoots at ISO 100 in good light, and at 1/15 of a second (or any speed you choose) it starts ramping up the ISO to a maximum of 1,600 (or any ISO you choose) as it gets darker. Only if it gets still darker will it let the shutter speed go below 1/15 at ISO 1,600, exactly as I'd do manually.

I explain how to set Auto ISO and select the shutter speed at which the ISO starts to increase and the maximum ISO to which it will increase in the Custom Setting 07.

I set Auto ISO to 1,600 max because the noise from the D80 at ISO 1,600 looks much better than blur. I set 1/15 because my Nikon 18-200mm gives great results down to 1/15. I adjust the lowest shutter speed setting in the AUTO ISO menu if I change conditions or lenses. Unlike film, my D80 looks great at high ISOs, so I use them anytime I need them. More details, including how to set ISO to 3,200, at the ISO Button.

WHITE BALANCE

I use AUTO and a clear UV filter to protect my lens. The D80 has a much warmer color balance than earlier cameras like the D70 so I don't need the 81A filter or the -3 trim. See examples of different settings here and details on my White Balance page. White balance is how you set the color balance, and color is critical. It's also personal preference. Use whatever looks right to you. My D80's LCD is very accurate. If it looks different in print or on your computer, your printer or computer are out of calibration.

Luckily AUTO works great most of the time. I look at my LCD, and if it's not right, I'll set it to whatever looks good. Usually that's the Direct Sun or Cloudy positions. These settings give much warmer results than earlier cameras. I rarely use the warmer Shade setting on my D80 while I used Shade often on my D1H and D70.

OPTIMIZE IMAGE

This is set in the Shooting Menu. I crave vivid color! I tweak my D80 to give color as vivid as I can get. If it went to 11 I'd use that, too.

I go to MENU > Shooting Menu (green camera icon) > Optimize Image > Custom.

Here's how I set each item under Custom:

Image Sharpening: Auto (default).

Tone Compensation (contrast): Auto (default). The D80 automatically adjusts its contrast and dynamic range to each and every shot. It works great.

Color Mode: IIIa (three-a). This is critical: this gives brighter colors than the default of I. No, color mode II is pronounced "two" and not to be confused with 11 (eleven). You don't want Mode II even if you could use it. Details are here.

Saturation: +, of course. This gives brighter colors in addition to the boost from Color Mode III.

Hue: 0 (Default). Don't touch this! it will subtly mess around with your colors. Leave it at 0.

After setting this it's critical to save it by selecting " Done" and clicking to the right actively to select OK. If you forget to hit OK it won't remember all these settings!

Read more at Shooting Menu.

FOCUS (AF) Mode

I use the default of AF-A. This mode automatically selects between the two older modes, AF-C and AF-S. These are explained under AF Area Modes.

METERING

I use Matrix. You set this by holding the rectangle-with-a-dot-in-the-middle button to the left of the +/- button near the shutter release. Leave it at its default of Matrix, shown on the top LCD as the same weird icon as on the button.

Seeing how poor the matrix meter has become in the D80 (it requires constantly varying levels of compensation) I intend to try center weighted metering. With my intimate knowledge of the Zone System, it might let me nail the correct exposures more quickly. That would be a big step backwards; center weighting went obsolete in the mid 1980s then the Matrix meter was invented.

LENS SETTINGS

Many lenses have no switches or settings. If so, don't worry.

If the switch says "M/A - M " then use M/A. This gives autofocus, and if I grab the focus ring it instantly lets me make manual corrections. As soon as I tap the shutter button again I get autofocus. This M/A setting, if the lens has it, provides both kinds of focus without ever having to move any switches. It's the best.

If a lens has an "A - M" switch, leave it at "A." To get manual focus you may or may not have to move the switch on the lens, and/or the switch on the camera.

Different lenses require different settings on the camera and lens to get manual. Some, like the old 300mm f/4 AF, required moving both the camera and lens switches! Others, like the new Nikon 18-135mm, require no switching and you may grab the manual focus ring at any time, even in the A mode. Read your lens' manual, or in the USA ask Nikon 24/7/365 at (800) NIKON-UX.

Non-G lenses will have an aperture ring on the base of the lens where it's attached to the camera. Set this this ring to the smallest aperture (largest number), usually 22, if not 32 or 16. This number will be orange on autofocus lenses. There usually is a lock to keep this ring set there, since if it comes off that setting you'll get an error message from most cameras.

These were the basics. Keep reading for explicit details.

TOP PANEL CONTROLS - Left

Mode Selector Knob

(On top left.) Spin it to select among P, S, A and M exposure modes. I ignore the green AUTO and the other convenience modes (flower, lady in hat, etc.).

Many of the menu options are shown only after you select the FULL MENUS option in the Setup Menu and are often deactivated in anything except the P, S, A and M modes.

P: Program Automatic Exposure Mode

I use "P" for program auto exposure. In this mode the camera chooses the f/stop and shutter speed for you.

If I want different apertures or shutter speeds I rotate the rear command dial, which selects alternate combinations of f/stops and shutter speeds which give the same exposure. Nikon calls this "Program Shift." A *P symbol appears on the top LCD lets you know you've chosen a different combination for exposure.

The *P doesn't appear in the finder, but you can see the apertures and shutter speeds.

Three easy ways to return to the standard program combination are to:

1.) flip to a different mode and back to P, or
2.) turn the D80 off and back on, or
3.) spin the rear dial back to its original position.

The *P symbol goes away when you've returned to the standard combinations.

The standard combinations are f/1.4 @ 1/8, f/2 @ 1/15, f/2.8 @ 1/30, f/4 at 1/60, f/5.6 @ 1/125, f/8 @ 1/250, f/11 @ 1/500, etc.

A shifted set might use f/2.8 @ 1/2,000, f/4 @ 1/1,000, f/8 @ 1/500 or might use f/2.8 @ 1/4, f/4 @ 1/2, f/5.6 @ 1 sec, etc. Don't worry, just flick the rear dial until you get the combination you prefer.

A, S and M Modes

If you want to use only one aperture or one shutter speed then use S or A mode and the camera will automatically pick the other value. I never use these; I shift the program instead.

If you want to set both the hard way, use M, manual, mode.

In these three modes you select the aperture with the front dial and the shutter speed with the rear dial. You can reverse which dial does what in the Custom Setting 15.

In A or S mode you can only set one of the two values because the camera is setting the other one for you.

A Mode: Aperture Priority

In A mode you choose the Aperture and the D80 chooses the shutter speed.

S Mode: Shutter Priority

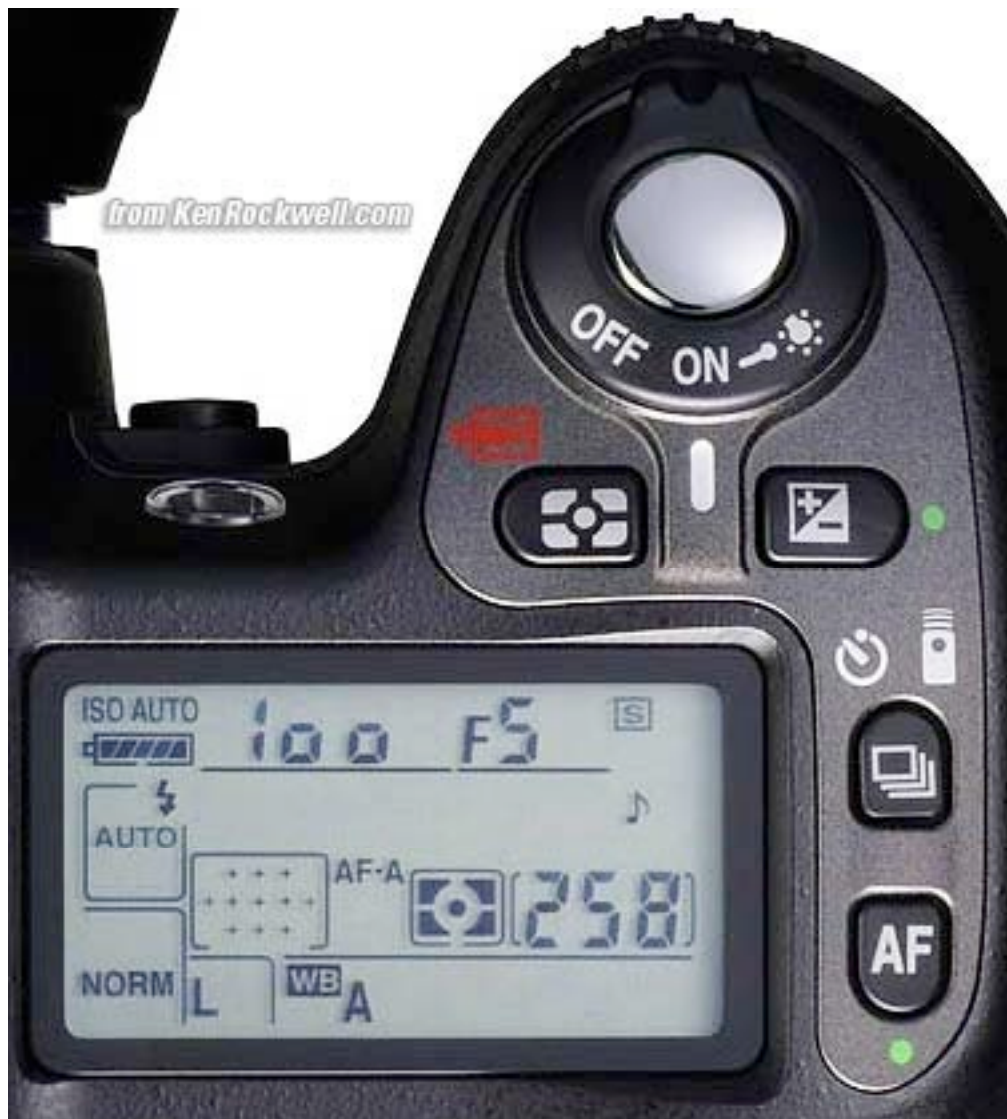In S mode you set the Shutter and the D80 sets the aperture.

If the D80 runs out of available apertures you easily can get under or over exposure in S mode: watch that the D80 can select a correct aperture for your lighting.

M Mode: Manual

You set everything the hard way. I look at the LCD to check exposure. You can use the bar graph in the finder - but why? If you wanted to do that use another mode and let the D80 do the setting for you.

HINT: Due to a continuing firmware defect, AUTO ISO doesn't deactivate in Manual mode. I always turn off AUTO ISO when I enter Manual Mode, otherwise Auto ISO changes ISO on you and ruins your intended exposure.

TOP RIGHT PANEL CONTROLS

OFF, ON, Light and Shutter Release Button

Leave it ON unless you're putting it away. It draws no more power in ON than OFF. OFF is a lock to prevent accidental operation in your case.

Twist it clockwise to illuminate the top LCD.

FORMAT and Weird Rectangle Button

This is the metering switch.

I always use Matrix, shown by an icon on the top LCD which looks like the same weird rectangle on the button.

Hold the weird rectangle button and spin the rear dial to set the metering modes to Matrix (weird rectangle), center weight (a dot with a ring around it) or spot (a small dot), as seen on the top LCD. There is no indication in the finder.

Hold this and the other FORMAT button on the top left rear to format the memory card. I do this every time I shoot. Hold down both buttons and the top LCD flashes "For." Hold them both down again and the card is formatted. This erases everything, and ensures you won't be getting any errors.

Professionals reformat a card each and every time a card is put in in the camera. This is because files and folder structures are sometimes messed up or changed when the card is read in-camera or with a reader or used in any other camera. Professionals prefer to be safe than sorry. We don't use cards to archive previous photos. One time I kept saving my winner shots on a card by simply erasing the rest each time. After a few months I started to get errors. These went away as soon as I reformatted the card. Reformatting completely renovates the card. Erasing does not, and leaves potential errors lurking.

+/- and Green Dot Button

This exposure compensation button is very important. You'll probably wear the paint off this one. This button makes the photos lighter or darker. + is lighter, and - is darker.

A flaw in the D80's firmware makes most photos too light, so I leave mine set to -0.7. If your photo is too light, hold the +/- button and spin the rear dial to a more negative number, like -1.3. If your photos are too dark, hold it and spin the dial to a more positive number, like -0.3 or 0.0. It's perfectly OK to go to any number you need, like -2.3 or +1.0.

This only affects photos as you take them. Use whatever setting looks best.

This error isn't a simple calibration issue. The D80 does different weird things with different subjects. The D80's meter firmware is designed erroneously to expose for the darkest part of the image, so it's almost impossible to get the right exposure of someone wearing black, especially as they move around the image. You may need -2.0 or -3.0 compensation, while other shots of light objects may be fine with 0.0.

It is this need for constant variation and supervision which makes this meter so bad and why I prefer my D200. The D40 is the same as the D80.

Flash exposure is Nikon's usual perfection.

HINT: You can see the + or minus value displayed in the finder as well as the top LCD, so you can adjust this without taking your eye from the finder. The finder display only reads the value when the button is pressed, otherwise those digits read exposures remaining.

Hold this and the other green dot button below at the same time for a few seconds to reset most settings to their defaults as explained on the first page. I do this every time I shoot to cancel whatever whacky settings I may have been using before.

Bearded Rectangle, Backwards Clock and Remote Clicker Button

This controls how the shutter fires. Hold it and turn the rear dial, or press it to cycle among the various modes. The modes are shown on the top LCD.

[S]: Normal mode is shown as an [S] in a rectangle on the top LCD, as shown above. The D80 takes one picture each time you press the shutter, regardless of how long you hold the shutter.

Bearded Rectangle: The D80 takes one picture if you press the shutter and release it. The D80 takes photos at about three frames per second if you hold down the shutter. I use this mode because I have my choice of one or many shots depending on how long I hold the shutter. In dim light I hold it for many exposures so I can pick the best one later.

Backwards Clock: Self Timer.

Rectangle with Hole (Remote Control): This lets my D80 fire from my excellent ML-L3 remote control. It's the best $20 you'll spend and it works with the D70 and D40, too. The D80 has to stay on in this position, which is why it turns off automatically after a period of a minute or so as set in Custom Setting 30. I use this mode on my tripod and for self portraits.

You can get the backwards clock and remote icons to show at the same time, in which case the D80 fires after an interval after you press the remote.

AF and Green Dot Button

This sets the autofocus mode. You can tap it to cycle through the settings, or hold it and spin the rear dial.

AF-A, the default I use, magically selects between the next two modes.

AF-S stands for AF-Single. The D80 focuses once, then locks AF for you to recompose and shoot.

AF-C stands for AF-Continuous. The D80 keeps focusing as the subject moves. Use this for sports and vehicles in motion, like cars, birds and aircraft.

I covered **green dot reset** on the first page. It resets most of the D80 settings. I reset this every time I shoot.

REAR PANEL CONTROLS

From top left to bottom right:

Trash Can and FORMAT Button

This is the D80's dual-purpose flush lever. Press it while a photo is displayed to erase that photo. You'll get an "are you sure?" screen, and press it again to dump that shot. Meatheads like me get used to double pressing it every time out of habit, which means I accidentally erase some shots. Serves me right.

Pressing and holding this FORMAT button along with the other FORMAT button on top formats the card (erases and resets everything on the memory card) as explained above.

[>] (Play) Button

This plays an image, or stops playing an image.

You don't need this often, since the LCD turns off the instant you tap the shutter button, and if you set Image Review ON in Custom Setting 06 it plays automatically after each shot.

With Custom Setting 06 set to ON, you can do anything and everything to the image immediately after shooting without having to press Play. Want to zoom, scroll, or see other images? Just move the appropriate controls.

I thank my lucky stars with my Nikon, because on my idiotic Canon 5D I have to wait and press the Play button just to zoom in on a shot I just made! No need for this with Nikon, so long as you have Image Review set to ON.

The only reason you may want Image Review OFF (its default) is if you prefer to make many immediate changes to your next shots.

If Image Review is ON, the image pops up after your shot, and the D80 interprets your front and rear dial commands as next/back and info page scrolling. My D80 won't be reading the command dial inputs to change apertures or shutter speeds until I wait a moment and tap the shutter to put the D80 back into Shooting mode. If you want to change your settings immediately, turn off Image Review. The Canon Rebel XTi is smarter than the 5D, since the XTi has a sensor to determine if you have your eye at the viewfinder and switches automatically.

MENU Button

This gets you into the menus, as explained at the many menu pages below.

WB / ? / Key Button: WHITE BALANCE

1.) If playing (note the color code: yellow: play, silver: shooting), it locks the image from deletion. I never do this, since it makes it a pain to erase later from my computer. Of course Formatting the card erases everything!

One trick for which I use the lock is if I forgot to format the card when I started shooting. I lock the few new shots, then use the DELETE ALL command in the Play Menu to dump all the old stuff I didn't lock. I then have to unlock each shot and proceed normally.

2.) If setting the menus, pressing this ? button often gets help and explanations of what's going on with that menu item.

3.) If not playing back, then you're in shooting mode. Hold this button and turn the front and rear dials to set the White Balance. You can see the setting on the top LCD.

The rear dial makes selections among the major settings. The front dial fine-tunes the setting from -3 (warmer or redder) to +3, cooler or bluer.

I leave my WB at AUTO. See also How to Set White Balance and White Balance Examples.

Here is a run down of the individual WB settings from left to right, as shown on the bottom of the top LCD:

Auto (A): I use this all the time. It makes its best guess for WB. It's usually very good. Indoor tungsten can be too orange unless you have some bright tungsten light also in the image. If you do, it removes the orange and compensates completely. If not, the D80 only partly compensates and you get a nice warm image instead.

Tungsten (hanging light bulb icon that's easy to confuse with the sun icon): This makes the picture very blue. Use this only for deliberate Arctic freezing effects, or under conventional tungsten light bulbs.

Fluorescent (glowing tube icon): Used to make crappy fluorescent light look less crappy. These settings rarely work; use the preset setting for better results.

Direct Sunlight (sun icon): Use this outdoors in direct sunlight. Use other settings for shadows or indirect sunlight.

Flash (lightning bolt icon): I never use this. It's almost the same as direct sun. I'm told it's really for studio strobes, since the Auto mode compensates magically for flash if you use it on-camera. The reason to use this is if you use a different trim value for your strobes than you do for sunlight.

Cloudy (cloud icon): Warmer (oranger) than the sunlight position. I use this in shade, too.

Shade (house casting a shadow icon): very warm (orange). Use this for sunset shots and deep shade.

K (Continuously Variable): This setting lets you choose any amount of blue or orange. Once you select "K" you choose the value, from 2,500 to 10,000, with the front knob while holding WB. The calibrations are abstract in what we scientists call (degrees) Kelvin. More degrees look warmer (oranger) and fewer degrees looks cooler (bluer). There are no rules in real-world photography: use whatever setting looks best to you.

2,500 K is very, very blue. I'll use something around 2,650 K in dim home lighting to get neutral results. 3,200 K is the same as tungsten above. 5,400 K is the same as direct sun above. I'll use something around 4,000 K indoors with a mixture of sun and tungsten light. 10,000 K is very, very orange. The shade setting is similar to 7,500 K, and 10,000 K is warmer.

Preset (PRE): You use this setting with a white or gray card to get perfect color matching. Hold "WB" and spin the front knob after choosing PRE with the rear knob.

To set it to a white or gray card (or anything neutral):

1.) Ensure your card or other neutral object is in the light representative of the light on the subject.
2.) Hold WB and spin the rear dial to get to the PRE setting.
3.) Release the WB button.
4.) Press and hold the WB button again for a few seconds.
5.) PRE starts to blink.
6.) Release the WB button.
7.) Point your camera at the card or neutral colored thing and Press the shutter.
8.) If the display flashes "good" you're set.
9.) If the display flashes "ng" then repeat from step 4.)

ISO / Minifying Glass / Checkerboard Button

If playing, it reduces the images to fit 2x2 or 3x3 on the screen. If the image was zoomed, it zooms out.

If shooting, hold this and turn the rear dial to change the ISO, or sensitivity to light. I usually leave my ISO at 100 and let the D80's Auto ISO adjust as needed.

Auto ISO makes all the ISO adjustments for you. I always use Auto ISO since it's as smart as I am.

Higher ISOs can give sharper images in dimmer light because they let the D80 shoot at faster shutter speeds or smaller apertures, but they also can add more grain (noise) to your photos.

ISO 100 gives the cleanest images, but the most potential for blur in dim light. I use ISO 100 outdoors.

ISO 400 and ISO 800 are perfect for sports outdoors.

ISO 1,600 gives the noisiest images, with the least potential for blur. ISO 1,600 still looks pretty good if you need it, but I only use it indoors.

ISO 3,200 is for use as a last resort. It is grainy, and lets you shoot in the dimmest light without flash.

Auto ISO selects magically among all these (except for ISO 3,200) so you and I don't have to worry about it.

Firmware Flaw: ISO goes from 100 to 3,200. Above ISO 1,600 Nikon uses bizarre terminology to scare amateurs away from setting these, because these same amateurs would clog up Nikon's (800) NIKON-UX support lines complaining about grainy photos.

Nikon calls ISO 2,000 "Ho.3," ISO 2,500 "Ho.7" and ISO 3,200 "H1.0."

HINT: If you've selected Auto ISO then you cannot set a manual ISO higher than you allow in Auto ISO. To get to ISO 3,200 (cryptically called H1.0 by Nikon) you must turn off Auto ISO.

QUAL / Magnifying Glass Button

If playing, zooms in. Use the up/down/left/right button to scroll around.

TRICK: When zoomed in, flicking the rear dial will go forward/back among other images, all at the same zoom and location. (The Left/Right/Up/Down key still moves around inside the zoomed images.) This makes it easy to see which shots in a sequence are sharp or not. The bad news is that when you delete one that the monitor returns to the default full-image view.

If not playing, press this and spin the dials to set the kind of file, the size of the file and the size of the image. You read the setting from the top LCD.

The rear dial controls the kind of file (raw, JPG or both), and the size of the JPG file (FINE, NORMAL or BASIC).

I always use JPG, never raw. (see JPG vs. Raw.)

I usually use BASIC JPG and sometimes NORMAL JPG.

BASIC JPG looks almost the same as NORMAL, unless you're making six foot wide prints. It also makes a file half the size of Normal, which speeds up everything and saves space on my hard drives and backup CDs.

I never use FINE; it looks the same as NORMAL and wastes space. Feel free to use any settings you like; that's why they're here.

The front dial selects L, M or S image (pixel) size for the JPG images. I usually use L or M.

You can see examples from my similar D200 at D200 Quality Setting Examples.

AE-L AF-L Button

This locks the focus or exposure. You select what it locks in Custom Setting 18. I set mine to lock exposure for as long as I hold the button.

Rear Dial

Click this left and right to control most of the D80's functions. You can reverse which dial does what in Custom Setting 15.

Up-Down-Left-Right Key

This is the four-way thumb switch.

While playing, this moves among your images and the data for them. I find it more convenient to spin the front and rear dials to do the same thing; try it.

When playing a zoomed image, it scrolls around the image.

Trick: After zooming, push the center to make the little zoom preview go away immediately! Otherwise you have to wait a second or two.

While shooting, it selects the AF areas.

In the menus, it moves around your selections.

Dot - L Slide Switch

Locks the Up/Down/Left/Right switch, but only in the shooting mode.

While shooting, L (lock) makes the D80 ignore the Left/Right/Up/Down key. This keeps your selected AF area unchanged.

It doesn't have any effect in the other modes. Smart!

Almost Invisible (when off) Green Light

This light should be red, because it means the D80 is talking to the SD memory card and you must not remove it. If you're dumb enough to yank out the card with the light on, you not only will lose some photos, you may destroy your SD card.

This normally blinks when the D80 is turned on or off or wakes up to shoot. It blinks for a moment after each shot to record it to the card. it blinks as you select different playback images as it reads them from the card.

It can stay lit for a minute or more while data gets written, if you insist on shooting a lot of fast sequences in raw.

You may ignore it while shooting. You don't have to wait for it, except to pull out your SD card. The D80 has a fat buffer to let you shot as fast as you want without having to wait for this light.

OK Button

In playback, calls up the Retouch Menu. If zoomed in (or zoomed out to the 2x2 or 3x3 modes), it returns you to a normal sized image.

In menus, sets menu items.

The D40 is much better, since it puts the OK key in the middle of the Up/Down/Left/Right key.

FRONT and SIDE CONTROLS

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From the top down:

+/- Lightning Bolt Button

1.) Press once to pop up the built-in flash.
2.) Hold and spin the front dial to alter the brightness of the flash. 0.0 is normal and I leave it there almost all the time. Only in rare instances do I ever need to adjust it towards the minus side to make it darker, or the plus side to make it lighter.
3.) Hold and spin the rear dial to select flash sync mode. The Sync Mode is displayed in the box with the lightening bolt on the left of the top LCD. Here are the modes and what they do:

Normal (blank, which is the default): In Program and A exposure modes, the shutter won't stay open longer than about 1/60 second. You can change this minimum speed in custom function 24, which defaults at 1/60 second. I forget the exact default because I have mine set to 1/15.

In this mode you won't get blur indoors, but you may not get more than a very black background either. Choose a longer speed, like 1/8, in custom function 24 to lighten the backgrounds indoors, but watch for motion.

I usually use Normal mode and a custom function 24 setting of 1/8 or 1/15, since in SLOW mode I can get scary long exposures in the dark.

This little trick of being able to select the exact slowest shutter speed in these modes is a significant reason why I prefer my Nikons over my Canon SLRs.

Red-Eye (eyeball icon on top LCD): I never use this. It shines an obnoxious light in your subject's eyes for a couple of seconds and then releases the shutter. If I set this mode by accident it bugs the heck out of me, because the camera doesn't go off until several seconds after I've pressed the shutter, but I have no idea why because I've set no self timer! It doesn't do much to reduce redeye anyway. Skip this mode.

SLOW (called SLOW on the top LCD): This mode is very useful. It lets the shutter stay open as long as it needs to so dim ambient light can expose properly with flash. Of course if it's dark these exposure times can get long. You can get blur from subject motion and camera shake. In daylight SLOW is the same as NORMAL, since exposure times are short. SLOW unlocks the camera in P and A exposure modes to make exposures as long as it wants to in dim light.

Have a look at most issues of National Geographic and you'll see many indoor shots made in this mode. The background exposes correctly, people may be blurred, and a burst of flash freezes them along with the blurry ghost images.

Normal and SLOW do the same thing in S and M exposure modes, since you or the camera may select any shutter speed in these modes regardless of flash sync.

I usually prefer to choose an exact slowest shutter speed in the Normal mode as explained above. In SLOW mode and dark conditions the shutter speeds can become too long for comfort.

Red-Eye SLOW (eye and SLOW icon): This is the SLOW mode and redeye. I don't use it for the same reason I don't use Redeye.

REAR (called REAR on the top LCD): Normally the flash goes off the instant the shutter opens. With long exposures and blurred ghost images you ordinarily get the ghost streaming out in front of the subject. Think about it: if a car is driving, the flash goers off and freezes it, then the car moves forward. You'll have a ghost image ahead of the car, which usually looks stupid. Select REAR mode to have the flash go off as the shutter closes. Now you'll have motion blurring behind the frozen flash image.

Another reason to select REAR is because the flash goes off at the end of the exposure. People presume photos are made the instant a flash fires, then leave. This wreaks havoc with long exposures. If you use REAR mode with long exposures they'll stay put and not move until the end. Of course you'll also want to select flash lock to eliminate the preflash.

REAR doesn't do anything with short exposures.

Trick FV Lock Mode: You can set this in the Custom Menus. I cover this below. It prevents people from blinking with flash!

BKT Button

Bracketing. I never use this. Bracketing was a popular crutch used by new photographers who couldn't get their exposures correct on film. Ansel Adams (and I) thought bracketing was very bad, because it was more work than learning how to expose correctly and because it usually guarantees that your best exposure is at the wrong instant, making you lose 2/3 of your good shots.

Today the D80 has a great LCD and color histogram for getting the correct exposure. Use them, not bracketing.

Big Button Above AF - M Switch

This unlocks the lens. Push this straight in and rotate the lens to remove it. It's a bayonet mount.

AF - M Switch

Autofocus or Manual focus. If your lens has the same switch, you usually can leave this at AF and use the switch on the lens to select manual. Some lenses are different; see your lens manual or ask Nikon in the USA at (800) NIKON-UX.

FRONT RIGHT CONTROLS

Front Dial

This is used to fine-tune most settings. You can reverse which dial does what in Custom Setting 15.

Top Unmarked Button to Left of Lens Mount:
FUNC (Assignable Function) button

This button can be programmed to many clever tricks. I wish my Nikons had more of these!

You set what it does in Custom Function 16. I leave mine on flash exposure lock (Bolt FV Lock), which lets me make flash photos without people blinking. Tap it to fire the flash and set the exposure, and subsequent photos won't need to fire a preflash, which ensures people blink.

Read Custom Function 16 to learn all the clever things it can do.

Bottom Button Below Lens Mount: Depth-of-Field Preview Button

Tap this to stop the diaphragm down to the taking aperture. The viewfinder probably gets darker, but look carefully and you can see what's in focus or not.

This analog feature is a remnant from film days. Today most people look at the LCD playback.

Safety Defect: Nikon has a flaw in the firmware which fires a huge, blinding burst of flash when you press this button. You must disable this in Custom Function 26 to save your eyesight. The blinding flash burst is intended as a way to let you preview the effects of flash or multiple flashes. The defect is that it is left ON by default.

PLAYBACK MENU ("[>]" icon)

How to Get Here

Press MENU, click to the left and then up to select the top "[>] " (play) icon. You'll then see PLAYBACK MENU at the top of the color LCD.

What it Does

It sets various playback options, including what data you see on playback.

What I Change

I leave it alone.

Delete

This is helpful if you want to delete all images while saving those for which you pressed the Key / WB / ? button to lock. I don't use this. I do all my editing and selection in my computer and I do my in-camera deletions one-by-one with the trash can key.

Playback Folder

The camera can record to and play back from different folders.

ALL shows you everything on the card. I leave my D80 set to ALL. It tends to reset itself to D80, meaning it won't play images made on a different camera if they are on your card.

CURRENT ignores photos in folders other than the one to which you're recording.

Rotate Tall

This is Japanese for rotating the vertical shots on playback, presuming you've set Auto Rotate to ON in the Setup Menu. It doesn't affect your images or files; it only changes how they are displayed on the D80.

Slide Show

This lets you amaze your friends with an exciting slide show on the tiny screen. I don't bother with this. I guess it's popular in Japan. Whoo hoo! Let's all watch a show on a 2.5" screen! You could plug the D80 into a TV or video projector, but video resolution is so bad everything will look awful.

Hide Image

This is used to hide embarrassing photos of your friends from playing back before you get to download them. The images are on the D80, however when marked this way they will be skipped on playback as if you deleted them.

Move the cursor left and right to select images, press the center to mark as Hide or Unhide, and press ENTER to save. Now the camera won't play these images, even though it still tallies them in it's counter on the top right that reads "34/284." You can detect a hidden image because this counter will skip.

Print Set

I never use this. I guess it's popular in Japan. This lets you mark images for printing if you sorted and then printed directly from your D80, and had a lab which could read this data.

SHOOTING MENU (camera icon)

Many of these menu options are shown only after you select the FULL MENUS option in the Setup Menu and are often deactivated in anything except the P, S, A and M modes.

This menu really should be called the Film menu and shown with an icon of a roll of film. More camera settings, like autofocus, flash and timers, are set in the Custom Settings Menu, shown by a pencil. This is Nikon's mistake; don't penalize yourself if the menu names and icons make little sense at face value.

How to Get There

Press MENU, click left and then up and down to select the camera (shooting) menu. You'll see "SHOOTING MENU" on the top of the LCD monitor.

What it Sets

It sets parameters related to what film used to do. The Shooting Menu sets ISO, grain, contrast, color and a zillion other critical things that set the look of your images.

The shooting menu would make more sense if it were called the Film menu, since many other menus also affect shooting.

What I Change

I change a lot here. This is where I get the wild colors I love from my D80.

Optimize Image

This is where you set the look of your image, like the saturation I love.

These choices are art. There is no right or wrong if you know what you're doing and know what you want.

I'll tell you what I use. Ignore me and be yourself if you prefer a different look.

Preset Choices

There are five fixed preset modes. They cannot be altered. They are:

    N Normal
    SO Softer
    VI Vivid
    VI* More Vivid
    PO Portrait
    BW Black-and-White

Black-and-White is a sixth preset mode which does have some adjustments under Custom. The Filter Effects menu under Custom lets the D80 create images which look as if they were shot through a colored filer on black-and-white film. I leave mine set to the RED filter, which increases the contrast of clouds against the sky.

You might think I would use Vivid or More Vivid, except that they crank up some of the contrast and sharpness settings and leave them there. I want vivid colors, but leave the contrast and sharpness on Auto. This way as subjects get contrastier I don't have to stop and turn the contrast back down. In VI* you can easily blow out a slightly high-contrast scene.

Therefore I use the Custom (pencil icon) setting:

Custom (pencil icon)

This is where Nikon hides the critical adjustments other camera makers make more obvious.

Canon lets you define many of these and recall them easily. Nikon only gives you one setting. Canon also gives you a wider and more precise range of adjustments, and therefore it's easier to make bad mistakes with Canon. The extreme settings here aren't very extreme. Play to your heart's content and see what you prefer.

Done

"Done" is the most important Custom Optimize Image menu item. If you forget to select it and then click to the right to select OK it forgets everything! Always remember to select DONE and OK after you change any of the settings below, otherwise they will be ignored.

Image Sharpening

I leave mine on AUTO. I've never messed with the manual settings. Sharpening is an artificial effect not to be confused with sharpness. When I first got a digital camera I thought: "cool, I'm cranking this to 11," and realized my error. Don't turn it up for no reason, since the image can start to look artificial. Play with it if you want. I've played with it out of curiosity, and always leave it on AUTO.

Tone Compensation (Contrast)

Nikon meant to say Contrast. I always leave mine set to AUTO. In AUTO the D80 automatically applies the Zone System and adjusts contrast to match your subject, for each and every shot!

If Nikon's marketing department was paying attention, they would promote this as Automatic Dynamic Range Optimization, since that's what it does and Canon has nothing like this.

The D80 automatically lowers contrast and increases dynamic range for very contrasty subjects, and cranks up contrast for dull subjects.

Saturation also varies with this setting. If you crank it to + it looks vivid and bold for flatter subjects, but when you have a contrasty subject it's too much and blows out. Leave it in AUTO and you won't have to piddle with it.

Avoid Custom tone compensation. Most people call this a custom curve. I've never used it. To use it you have to buy Nikon Capture and create a curve. You then use Nikon capture to load it into the D80. Once you've done that you select it here. If you haven't loaded your own custom curve and select this you get the default Normal curve. Custom curves are way beyond anything with which I want to bother. The curves in the camera are the best ones anyway. Real photographers pay more attention to their subject's lighting.

Color Mode

Color Mode has three settings:

1. Color Mode Ia (one-a, sRGB) is default. It's normal and boring.
2. Color Mode II (two, Adobe RGB) gives dull colors. Don't touch this unless you really know what you're doing and print your own work. See Adobe RGB vs. sRGB.
3. Color Mode IIIa (three-a, also sRGB) gives bolder colors. I use it all the time.

I have no idea how Nikon cooked up these numeric designations.

Saturation

This sets the vividness (strength) of colors.

    A Auto: I don't use this. I suspect it cranks up the color for dull scenes and puts it back to normal for scenes that are already colorful. I prefer always to have my saturation cranked up.

    0 Normal: For normal people shots you're probably better off with 0. This is the default.

    - Moderate: tones down the colors, which I've never liked. "Moderate" sounds like British understatement. In America we call this "dull and boring." Personally I want colors so bright you have to put on sunglasses, or I go directly to B/W. Your interests and taste will differ.

    + Enhanced: I prefer violent color, so I crank it up to +. I'd use ++ or +++ if my D80 had it, but that's me.

Hue Adjustment

Don't touch this! This rotates all your colors to different spots around the color wheel. If you use this to fix one color it screws up all the other colors. God only knows why this adjustment is here.

Image Quality

This duplicates half of the QUAL button. It chooses JPG, raw or both and the JPG compression level.

See my discussion of the QUAL button for details, and see examples of these settings at my D200 Quality Settings page.

Image Size

This duplicates the other half of the QUAL button. It chooses the JPG image size in pixels. It does not directly choose the size of the file in bytes.

See my discussion of the QUAL button for details, and see examples of these settings on my similar D200 at D200 Quality Settings.

White Balance

This duplicates the WB button as explained on the D80 Controls page.

ISO Sensitivity

This duplicates the ISO button as explained on the D80 Controls page.

Firmware Defect: the AUTO ISO options are hidden in the Custom Settings Menu!

Long Exp. NR

This is short for Long Exposure Dark-Frame Subtraction Noise Reduction

OFF: Default. Leave it here.

ON: Don't use this. If you do, the D80 will double the amount of time you have to wait around for time exposures of 10 seconds or longer. The D80 is so good you don't need this. Nikon only includes this because old-timers would get peeved if it was missing.

I have details with examples from my very similar D200 at D200 Dark Exposures.

Minor Firmware Defect: the help menu says exposures need to be 8s or longer for this NR to take effect. It's wrong - they have to be 10s or longer, or longer than 8s.

High ISO NR

This is short for High ISO Noise Reduction

This lets you control the strength of the noise reduction (smoothing) applied at high ISOs.

I find the default NORMal position optimum.

You can set it higher, but it removes subject texture.

You can set it lower and get more noise, along with more detail and sharpness.

I have details with examples from my similar D200 at D200 High ISO Noise Reduction.

Multiple Exposure

This is unique. It lets you do what we did back on film.

This works and it's easy to use.

Unlike film, it's smart enough to compensate the exposures so they add together without overexposure.

To use it:

1.) Choose the number of shots to combine (2 or 3). 2.) Hit OK.
3.) Go up to DONE.
4.) Hit OK. It only works if you remember to scroll up and hit OK.

You'll see a tiny icon on the top LCD that looks like two rectangles mating.

Make your shots. You'll see each on the color LCD as you make it. The mating rectangles on the top LCD are now blinking. You'll also see the mating rectangle icon on the color LCD.

You'll keep seeing the flashing mating rectangles icon on the top LCD until you complete all the exposures for which you asked in step 1.).

The D80 won't tell you how many you've made until you're done. You can cancel it in the same menu if you want. Choose RESET.

When you've made the last shot the D80 shows it as it did for the other shots for a moment, then goes off and adds them all together. After the CF light blinks a few times you'll see the composite image on the color LCD. The intermediate single images are not saved.

It works with JPGs and NEFs.

Don't turn off the automatic exposure compensation, called Auto Gain. If you do you'll get at least a stop of overexposure.

CUSTOM SETTING MENU (Pencil icon)

Many of these menu options are shown only after you select the FULL MENUS option in the Setup Menu and are often deactivated in anything except the P, S, A and M modes.

This menu really should be called the camera menu and shown with an icon of a camera, except that Nikon used the Camera icon for the shooting menu, which really should be called the Film menu. Camera settings, like focus, flash and timers, are set here in the Custom Settings Menu, shown by a pencil. This is Nikon's mistake; don't penalize yourself if it makes little sense at face value.

How to Get Here

Press MENU, go to the left and select up and down to the pencil icon. You'll see CUSTOM SETTING MENU on the top of the color LCD.

What it Does

This menu sets many things related to the camera and taking pictures, like autofocus, exposure, timers, flash and more.

What I Change

I change a lot here, read on.

[R] Reset

This resets everything in this menu to its defaults. I don't use this.

01 Beep

Turn this OFF!!!

This is the idiotic and annoying focus confirmation beep. Turn it off!

The beep annoys others and is very rude. Focus confirmation is indicated by a dot in the lower left of the finder.

02 AF-Area Mode

This selects how the D80 uses its numerous AF sensors.

You'll want to change this for action, still subjects or handing your camera to a non-photographer. I wish the D80 had a dedicated switch as the D200 does. On the D80 we need to go into this menu every time our subject changes.

[o] Single Area is used for still subjects. I use this most of the time. The D80 uses whichever area you select with the rear Up/Down/Left/Right selector.

[x] Dynamic Area lets the D80 automatically select which sensor to use as a subject moves around the frame. It really works! I use this for sports, running animals and birds in flight.

The D80 first uses whichever area you select with the rear Up/Down/Left/Right selector, and proceeds to select other areas automatically if the subject moves. You won't see which area is selected in the finder, but you can see it on playback if you use the right software.

[xxx] Auto-Area AF selects AF areas by magic, usually the closest one. Use this when you hand your camera to a non-photographer, or if things are moving too fast for you to do your own AF selection. This feature works great. I'm always surprised at the great results I get in this mode.

TRICK: You can program the FUNC button to change this setting, which would be great except I prefer to use my FUNC button for Flash Exposure Lock.

03 Center AF Area

This selects your choice of a small or large central AF area.

I've always left mine on the default of Normal.

You can program the FUNC button to change this.

04 AF Assist

I leave this at ON.

Turning this OFF disables the bright white light that shines in the dark to help you focus. I turn this off if I'm shooting where I don't want to disturb people, or be identified as photographing.

05 No Memory Card?

I leave mine at LOCK. If I have no memory card it won't let me take pictures.

Don't set it to OK. If you do, you could have no memory card and be shooting all day, thinking you're making pictures when you really aren't. Shoot one wedding without a card and this set to OK and you'll see how stupid you'll feel.

Only set this to OK if you want to demonstrate the D80 in a camera store with no card.

06 Image Review

ON plays the picture after you take it. OFF leaves the screen dark.

When the image pops on the screen, even if the D80 is still at your eye, spinning the command dials will change the playback, not the shooting settings like apertures. While shooting you might want not to use this, or remember that you must wait a moment and tap the shutter release to reset the D80 to interpret the command dials for changing shooting settings instead of playback screens.

07 ISO Auto

This is one of the strongest reasons I prefer my Nikons to my Canons, which lack this critical feature.

ISO Auto Increases sensitivity (ISO) in dim light automatically to prevent blur from slow shutter speeds.

I use this all of the time, unless I'm using manual exposure mode. Auto ISO is a crucial component of Modern Exposure Technique.

Today I adjust the Auto ISO's minimum shutter speed as I change lenses and conditions. I no longer adjust ISO directly, as we did in the old days before 2004. This is a time-saving step towards the future, just as program exposure was a step ahead of aperture priority in the 1970s.

You can choose the highest ISO to which the Auto ISO will go (Max sensitivity). I let my D80 go all the way to to ISO 1,600, since it looks fine at ISO 1,600 and any small amount of grain is better than a blurry photo. If you prefer blur to grain, feel free to limit the D80 to ISO 800 or 400. Try ISO 1,600: the D80 is better at high ISOs than film ever was, and far better than any compact digital camera at these speeds.

You also may set the minimum shutter speed (Min Shutter Speed) below which the D80 starts raising the ISO. Select the slowest shutter speed at which you'll get sharp images under your present shooting conditions.

I wish this function was smart enough to recognize which lens I'm using and adjust accordingly, but it's not.

HINT: If you've selected Auto ISO then you cannot set a manual ISO higher than the maximum ISO set as part of Auto ISO. To get to ISO 3,200 (cryptically called H1.0 by Nikon) you must turn off Auto ISO.

HINT: You set the lowest ISO used in Auto ISO with the ISO button, of course.

Firmware Defect: Nikon's firmware leaves Auto ISO active even in manual exposure mode. This makes the D80 change the ISO automatically and defeat the purpose of manual exposure. Remember to deactivate Auto ISO when using Manual exposure mode.

08 Grid Display

This activates hairlines in the finder. I leave them ON to help me keep everything straight and level.

You can program the FUNC button to set this more directly.

09 Viewfinder Warning

This superimposes warnings directly on top of the image in the finder if you do anything bone-headed like have no memory card, have the D80 set to B/W or if the battery is low.

I leave these ON. I want to know these things!

10 EV Step

This lets you adjust settings in your choice of third stops or half stops.

I leave it in the default of third stops. I prefer full stops, however that option isn't in the D80. It is in the D200.

11 Exposure Comp

This is more correctly is called "Easy Exposure Compensation" on other Nikons. Setting this ON lets the rear dial alter the exposure compensation at any time, without pressing the +/- button near the shutter.

I leave this off, its default. I don't mind pressing the +/- button to adjust this, and don't want to alter this critical setting accidentally.

12 Center-Weighted

This selects the diameter of the center weighted metering area.

I leave this at its default of 8mm. I never use center weighted metering, which is a throwback to the 1970s.

13 Auto BKT Set

This selects what changes if you use bracketing. I never change this, because I never use bracketing, and you shouldn't use bracketing either. Look at your LCD and histogram and set the correct exposure in the first place.

Bracketing is for wimps.

13 Auto BKT Set

This selects what changes if you use bracketing. I never change this, because I never use bracketing, and you shouldn't use bracketing either. Look at your LCD and histogram and set the correct exposure in the first place.

Bracketing usually ensures that the best shot among many is made at the wrong exposure.

14 Auto BKT order

This selects the order in which the bracketed exposures are made.

15 Command Dials

This lets you reverse the functions of the front and rear command dials.

I leave this at default.

16 FUNC Button

This selects what the FUNC button does. The FUNC button is the one on the front of the camera, between the lens mount and the shutter button.

The FUNC button is so slick that I wish the D80 had more than one. Tricks like each of these are why I prefer my Nikons to my Canons.

Here are your options:

ISO Display (default) shows the ISO in the finder when pressed. Slicker still, if you use ISO Auto as I do, it shows the magically selected ISO about to be used.

Framing Grid: press and hold the FUNC button and spin the rear dial to turn the compositional grid lines on and off.

AF-Area Mode: press and hold the FUNC button and spin the rear dial to select among the three AF Area Modes as explained above. You have to look at the top LCD to see which is selected:

One teeny rectangle: Single AF area, used for still subjects.

11 teeny crosses with one teeny rectangle: Dynamic AF Area, used for sports, motion and action

11 teeny crosses with no teeny rectangle: Auto Area AF, used for handing your D80 to a non-photographer.

Center AF Area: press and hold the FUNC button and spin the rear dial to select between normal and wide sensitivity for the center AF sensor.

FV Lock: This is the setting I use.

Press it once to fire a pre-flash to measure and lock the flash exposure. You'll see a pip of flash, and then a lighting bolt + L icon lit on the lower left of the viewfinder to let you know the lock is set and active. Now for every photo you take, the flash doesn't fire before the photo is taken.

This prevents people and pets from blinking, which they almost always do in the regular flash mode. In the regular mode the D80 fires a little bit of flash before the photo is taken to measure the flash exposure This starts people blinking, who then usually have their eyes almost completely closed a tenth of a second later when the picture is taken.

Be sure to cancel this by pressing the FUNC button a second time if you want to return to the normal mode, or if you change your distance and need to save a new flash exposure (FV Lock) value.

Flash Off: Another slick feature, in this setting the flash won't fire if you hold the FUNC button.

Matrix Metering forces Matrix Metering regardless of the selected mode.

Center Weighted forces Center Weighted Metering regardless of the selected mode.

Spot Metering forces Spot Metering regardless of the selected mode.

17 Illumination

This lets you have the top LCD illumination turn on any time the meter is on. It saves you from having to twist the power switch.

18 AE-L/AF-L

This selects the function of the AE-L/AF-L button.

AE/AF lock (default) locks both for as long as you hold the button. You'll see AE-L in the finder when it's locked. There is no AF-L finder indication.

AE Lock only holds the measured exposure for as long as I hold the button. I use this setting. You'll see AE-L in the finder when it's locked. I usually shoot in Single AF mode, which locks the focus separately.

AF Lock only locks the autofocus. This is handy if you want the lens to stop focusing, for instance, if reframing a portrait or if you're panning while a target goes behind a tree. There is no AF-L finder indication.

AE Lock Hold requires just a tap, after which the D80 holds the exposure until you tap it again. This eliminates the need to hold the button, but also requires you to remember to press the button again to unlock, and press a third time to lock again.

AF ON focuses the D80 when the AE-L/AF-L button is pressed. This deactivates the normal AF action of the shutter button. The only way to autofocus with this selection is to press the AE-L AF-L button.

FV Lock locks flash exposure, exactly as you can set the FUNC button. This lets you use the FUNC button for something else.

Focus Area Selection lets you press the AE-L/AF-L button and spin the rear dial to select the AF areas. This is similar to Canon's [+] button. I never use this; I use the Up/Down/Left/Right button. The selections below this combine other functions explained above with the Focus Area Selection via knob.

19 AE Lock

This lets you lock the exposure when the shutter is pressed.

The default is off, which I use. The shutter button doesn't lock exposure.

I prefer to use the AE-L button to lock exposure.

20 Focus Area

This allows one to click one past the end of the constellation of AF areas and return (wrap around) to an area on the opposite side.

I leave this at its default of No Wrap, which means once I get all the way to one side, it stops.

21 AF Area Illumination

This allows you to force the red illumination of the selected AF areas ON or OFF.

I leave this in its default of AUTO, which turns them on as needed in the dark.

22 Built In Flash

This lets you set the function of the very flexible built-in flash.

Hint: Be sure to hit OK after changing anything, otherwise the D80 ignores what you think you changed!

TTL (default) lets the flash work normally and give great exposures all by itself.

M (manual) lets you force the flash to one brightness value. It adjusts in full stops from full power down to seven stops below, shown as 1/128 power.

I use this if I'm using the built-in flash to trigger my studio strobes or if I'm trying to set up something tricky which isn't working in the usually perfect TTL mode.

Repeating Flash is a gimmick. It lets the flash fire manually many times in fast succession. You might play with this in a dark room with a long exposure to make a stroboscopic image of something in motion.

Commander Mode is how you can control one or many SB-600 and SB-800 flashes remotely from the D80. Leave it on the default of channel 3, which is the default channel for the flashes. If you figure someone was screwing with your D80 and reset it to channel 1, it won't work!

I don't often use this, but it's easier than it seems, and it works GREAT, unlike the old flash slaves. It's reliable, and your remote flashes don't even have to be visible to get the signals! I've hid them around corners, out of the picture, and they fire and expose perfectly. Nikon is the world's leader in flash technology, and it's all inside your D80, for free.

I explain how to set your SB-600 and SB-800 flashes to work in this mode at Nikon Wireless Flash.

The D80's commander mode menu offers a lot of flexibility.

Built-In Flash setting in Commander Mode

"Built-in Flash" is also the title of a setting inside the Commander Mode menu. The Commander Mode menu is an option inside the Built-in Flash Custom Setting 22. My apologies for Nikon using this twice, making written descriptions of the menu structure clumsy. It's not confusing at all in actual use.

You can leave the built-in flash at TTL, in which case it lights the subject along with the remote flashes. Turn this to "--" to prevent the built-in flash from contributing light to the picture. It will still fire to control everything else.

You can leave the built-in flash in TTL and alter its lighting ratio with its Comp(ensation) setting.

Comp(ensation) lets you alter the brightness of each flash or flashes. 0 is normal, + is brighter and - is darker.

Group A and B

Group A and Group B allow you to control remote flashes as two banks, presuming you set each flash to A or B. By default the Nikon flashes are group A. You can use many flashes, all set to group A. You'd want to set some to group B if you wanted to control their light output separately in the Comp(ensation) part of the menu.

Modes

From the D80's Commander mode menu, you can set each flash's exposure mode.

TTL, through-the-lens automatic exposure, is the most elegant and what I use. You can fine-tune the light level of each group in third stops.

M: You may set their outputs (brightness) manually in full-stop increments.

AA: You may run remote SB-800s in the old Auto Aperture mode. This mode uses a sensor in the SB-800.

--: Turn that flash or group off.

Channel

Leave the channel on 3, the default of the SB-600 and SB-800 flashes. I have no idea why default is three; I guess it helps keep you in the dark and having to pay for flash seminars.

You'd only reset channels if another photographer wanted to setup his flashes in the same place and control them separately.

23 Flash Warning

This lets you turn off the flash reminder bolt in the finder.

I leave this on. The flash reminder is much more than an idiot light. The D80 analyzes the dynamic range of the scene, and if it's too great, reminds you to use flash to fill the dark areas. It is the world's smartest idiot light.

24 Flash Shutter Speed

This is another world-class trick easy to use on Nikon, and nonexistent on Canon.

This lets you chose the slowest shutter speed used in the normal flash sync mode in the P and A exposure modes. I explain flash sync modes here.

This lets you get much more natural images that include more ambient light with flash. Use this well and your photos won't look as if they're shot on a black cyc in Hell, lit only by car headlights, as do most flash shots indoors.

I leave mine set to 1/8. Set it slower to get more ambient light if needed, but it leaves more likelihood of blur if you or the subject moves.

Set it higher to lessen the possibility of blur, but this reduces the amount of ambient light that can be captured.

This is much better than using the SLOW flash sync mode which can lead to very long (30 second) exposures in very dim light.

25 Auto FP

This lets you shoot above 1/200 second with an SB-600 or SB-800 flash. I've never used this, but leave it on in case I do. It doesn't do anything at slower speeds.

26 Modeling Flash OUCH! TURN THIS OFF!

In its default on mode, when you press the depth-of-field preview, it fires off a long burst of all your flashes.

Safety Defect: The first time I did this I was looking at my camera, and almost blinded. With all the stupid warnings in the instruction books, I'm surprised that Nikon has left this dangerous firmware flaw unresolved. Default should be off!

27 Monitor Off

This selects how long the monitor stays lit after you ignore it. This works in the menus and on playback.

Firmware Defect: Sadly this doesn't affect the length of the Image Review after you make a shot. When I was making our Christmas Card photo of my family with a remote control, the monitor always shut off the same second I managed to run back over to my D80.

28 Auto Meter Off

This selects how long the meter stay active after you start ignoring it. I leave this at the default of 6 seconds.

28 Self Timer

This selects the time, presuming you have the self timer active, between pressing the shutter and the shutter firing.

I leave this at 2 seconds, since I use the self timer only if I forgot my ML-L3 remote control.

I use my ML-L3 remote, not the self timer, if I'm taking pictures of myself.

30 Remote On Duration

This selects how long the D80 stays awake waiting to be released by the ML-L3 remote control, presuming you've set it to work via remote control.

The default is one minute, which is silly, since when I'm using my remote I don't want to have to take a picture every minute or have to reset my D80 to pay attention again.

I set mine to 15 minutes.

You set the D80 to pay attention to the remote with the Shutter Release Mode button.

31 Exp(osure) Delay Mode

This is a flimsy excuse for a mirror lock-up.

In this mode the shutter fires 4/10s of a second after the mirror flips up.

It's better than nothing, but I still wish it had a 1970s style default mirror-up at the beginning of the self timer interval. The best is the self timer of Mamiya cameras, which have a dedicated self-timer button. Press the self timer button, and the camera goes off a few seconds later. Nothing to set, nothing to remember to reset.

32 MB-D80 Batteries

This allows you to tell the D80 what kind of AA batteries you're using in the optional MB-D80 hand grip. If you do, you'll be rewarded with a more accurate battery gauge.

SET UP MENU (wrench icon)

Many of these menu options are shown only after you select the FULL MENUS option in the Setup Menu and are often deactivated in anything except the P, S, A and M modes.

How to Get Here

Select the Set Up Menu by pressing MENU, moving to the left and then up or down to select the wrench icon. You'll then see SETUP MENU on the top of the color LCD.

What it Sets

This sets the usual housekeeping items like languages, video formats, auto image rotation, the clock and file numbering.

What I Change

This menu contains the secret message mode I use to encode my © and contact information into every file shot with my D80.

I also read the Battery Info often. You can't change it, just read it.

CSM/Setup Menu

This allows me to set what I need once, like languages, and then turn off those items in the menus. This is like a breath of fresh air to clarify the menus down only to what I use daily.

If I ever want to reset the menus to Korean when I loan my D80 to a pal, I simply choose FULL menus again.

The choices are:

Simple (default): only the most basic settings are shown.

Full is what you should set as soon as you get your D80. It allows you full access to every menu option, so long as you are in the P, S, A or M exposure modes.

My Menu is where you can deactivate the display of any or almost all of the menu options. Every option you've altered remains in effect, but you won't see it displayed to alter.

For instance, set language to Korean, then deactivate the Language option. Language remains in Korean, and good luck to your pal trying to reactivate the language menu to return to English. I'm scaring you; I use this mode to turn off all the menu items I set once when I buy a camera, like Beep, and if I ever need to set them again, it's trivial to select Full.

This My Menu is more powerful than you may realize. I turn off all the junk, and it leaves all the items I set often on one page, making it much faster and clearer to set and unset Auto ISO everytime I go into Manual exposure mode, for instance.

Format Memory Card

This duplicates the function of the two red **FORMAT** buttons.

I format cards every time I put one in my D80, and every time I go shooting.

I use the buttons, not the menu. They are faster.

World Time

This sets the date and time.

There is a nice map for finding time zones. Want to reset your D80 for Fiji or Tonga? Just click. You can swap among time zones without having to reset the seconds, a boon for me who keeps his D80 set to the exact second.

Firmware Defect: You set the time under the DATE option.

LCD Brightness

This changes the midtones on the LCD. It changes backlight intensity only by 10%. It is mostly a gamma (midtone contrast) control.

For the adjustment to take effect you must remember to hit OK after making a selection.

I leave mine at 0.

Unlike my Canon DSLRs, My D80's LCD is always bright, contrasty, color accurate at every angle and sunlight readable.

I never have to twiddle with the brightness adjustment.

Video Mode

This sets the format of the video output.

Use NTSC (525 lines, 59.94Hz) in the Americas and Japan, and PAL (625 lines, 50Hz) in Europe.

This output will always look much worse on a TV or projector than images do on a computer or projected through a computer. Read Why Images Look Awful from the Video Output for more.

Language

This sets English or other languages.

As suggested before, set yours to Swedish and see if you can navigate back to English. Fun!

USB

This selects how the camera behaves when plugged into a computer via USB.

I leave it at mass storage, which means my D80 appears as an external hard drive from which I can drag and drop images and folders in my Mac OSX Finder or Windows Explorer.

PTP is used if you want to control the D80 as an external device, for instance, via Nikon Camera Control Pro for remote camera control. PTP makes the D80 look like a device instead of like a drive.

Use whichever works best with your computer and workflow.

Image Comment

This lets you add a secret text message into every file. Mine is set to **(c) KenRockwell.com** with my phone number! You see this text looking at the EXIF data in software on a computer. It doesn't appear in the visible image. Sadly Nikon provides no real © symbol.

You set this by going to MENU > Set Up Menu > Image Comment > Input Comment > (add your message like you did on 1970s video games) > Enter. You must hit ENTER or it will forget everything you just did!

To edit or remove a character, select it in the Input Comment screen by holding the checkerboard button and clicking the big thumb selector. Select a new character with the same selector and press the center of the selector to add it. Press the Trash button to delete a character.

When you get your text message spelled out, go to Attach Comment and hit SET so a small checkmark shows. Now go to and select DONE. If you forget to check Attach it won't attach, and if you forget to hit DONE it will also forget everything you just did. Sorry, I don't write the firmware.

It's great having everything you shoot have your contact info embedded. It also allows you to prove ownership in a third-world country when catching a thief with your camera. Help the cop go through the menus and read your personal ID information.

Folders

You can create, name and rename folders on your memory card. They are named with a 3-digit number from 100 through 999.

Select Folder selects the folder into which new photos are written.

You could use this to record images into a previous folder. I never do this: if I want to get that complicated I wait until I get to my computer where it's much easier to sort.

You might want to use this feature if you shot one event or subject, went on to a second and made a new folder for it, and then returned to the previous subject.

New is used to create a new folder. Unlike the pro cameras like the D200, there is no trick by which you can hold the ? button on power-on to create a new folder automatically.

Rename and **Delete** are self-explanatory.

File No. Sequence

This ensures your file numbers keep counting up. Set this ON.

If you leave it at default you'll start from DSC_0001 every time you reformat. Over time you'll have hundreds of photos on your computer all called DSC_0001. It will drive you crazy and it will be too late to do anything about it.

Set it to ON, which should be the default but isn't.

Mirror Lock-up

Mirror Lock-up isn't. It's not a lock up for telephoto lenses on tripods.

This setting is used to lock up the mirror to clean the CCD. I never use this, since I find it easier to set the camera to Bulb and hold open the shutter. I'd never stick anything into the camera to touch the CCD; the only people who suggest this are the people who want to sell you the tools to clean your CCD.

Dust Off Ref Photo

This is used to take a picture of the dust on your sensor. If you pay Nikon another $150 for Nikon Capture software you can use this to erase the dust more easily from your images shot in raw. You people know who you are. I don't do this!

I've made 80,000 combined shots on my Nikon D70, D200, D40 and D80 and have had no problems with dust. Thankfully the modern Nikon sensors have filters far enough in front of the imaging surface to throw dust sufficiently out of focus.

All I ever use is an air bulb to blow off the big chunks. The small ones remain invisible. If I ever had a problem, I'd let no one but Nikon clean my sensor, since they'll replace the camera if they screw up.

Battery Info

I use all the time. This lets me read the battery's charge to the nearest percent.

Bat. Meter reads the battery charge to the nearest percent. This is the same battery data shown on the top LCD display, but the top gauge only has 5 bars to read to the nearest 20%.

Pic. Meter shows how many images have been shot on this charge.

Charg. Life shows the battery's health. A new one reads 0 and an almost dead one reads 4.

I've made 28,000 shots by alternating between two batteries, and they both still show "new." The trick is not to run them all the way down before charging.

Firmware Version

This lets me confirm if my D80 is up-to-date with Nikons' free firmware updates.

Mine, as of 02 January 2007, reads A 1.00 and B 1.00.

Auto Image Rotation

This sets a flag in vertical images which keys most software to display the image vertically.

It does not actually rotate the images; it merely sets a flag. Someday the camera's firmware will work properly and rotate the image itself, but no camera does this yet.

I rotate the images themselves later in iView.

Auto Image Rotation helps me identify which of hundreds of images I shoot each day need rotation.

Auto Image Rotation is easy to fool if you're shooting directly up or down. Turn it off if you're photographing your shoes on your feet.

RETOUCH MENU (brush icon)

How to Get Here

Select the Retouch Menu by pressing MENU, moving to the left and then up or down to select the brush icon at the bottom. You'll then see RETOUCH MENU on the top of the color LCD.

Trick: Press the OK button when an image is displayed to get to most of the retouch menu.

What it Sets

This lets you manipulate images in-camera. The originals are unaltered. The D80 creates new versions of the images and saves them.

Processing Time: It takes several seconds to chew on a file and save it once you've given the command. The D40 does the same things much faster.

Concatenation: The D80 is sneaky enough to know if a file was created with these trick modes, and often won't let you apply the same filter twice. You can concatenate different filters.

Firmware Defect: the new images are saved with a file number one more than the most recent image, and are prefaced with CSC, not DSC. The EXIF create time is unaltered, so you'll have to sort images by create time if you can.

This double-defect means that the file numbers of the newly created versions are scrambled from the originals. If you're playing with the most recent image the file numbers are close, but if you're playing with an earlier file, it's file number will be unrelated to the original.

By prefacing the file with CSC instead of DSC the modified files will sort differently than the originals.

The correct way to have done this would be to retain the same file name and append -edit, -edit1, -edit2, etc. For instance, if you make a new version of DCS_0123.jpg, the new file might be called CSC_5837.jpg. Good luck sorting them out! If done correctly, the new version would be named DSC_0123-edit.jpg.

D-Lighting

This creates new versions of images with lightened shadows similar to Photoshop's Shadow/Highlight Adjustment tool.

You have three levels of lightening: Normal, Moderate (less) and Enhanced (more).

You'll never need this with the D80, because the D80's meter firmware is defective and usually overexposes, especially images with dark sections.

This trick D-Lighting would have been clever on one of the cameras with a good meter, like the D200, D70 and D50, but not the D80 or D40 which expose for the shadows with a vengeance.

Red-Eye Correction

This creates new versions of images attempting to rectify flash-induced red eyes. This filter is sneaky enough to know if you used flash or not to make the image, and won't let you use this filter if you didn't use flash.

I've never had a problem with red-eye with the D80, so all the better. When I was able to cause red-eye, this filter only corrected half of the eyes!

Trim

This creates new, cropped versions of images. No pixels are moved or changed in size. Trim removes unwanted pixels from the sides of an image and saves a smaller image.

Monochrome

This creates new black-and-white versions of images.

It has three modes:

Black-and-White,

Sepia (Brown-and-white) and

Cyanotype (Blue-and-White).

Filter Effects

This creates new versions of images with different colors. You've got your choice of:

Skylight: slightly warmer and pinker.

Warm Filter: slightly warmer.

Color Balance: This one's slick. It calls up a better control panel than Photoshop's color balance tool, which dates from the 1980s.

Nikon's tool reminds me of what we have on million-dollar color correction machines used in Hollywood telecine to color correct motion pictures.

The Nikon D80 shows three histograms (reminiscent of Tektronix' WFM700 waveform monitors) and the D80's Up/Down/Left/Right key becomes the color correction track ball. Click it left and right to alter blue-red, and up down for magenta - green.

If you have something neutral, watch the waveforms, oops, histograms, until they are about equal. Left - right on the Up/Down/Left/Right key slides the red and blue in opposite directions, and green - magenta slides the red and blue equally left or right. The green stays put.

Small Picture

This creates a much smaller version of an image. You've got your choice of 640x480, 320x240 and 160x120 pixels.

Image Overlay

This is silly. It creates a new image by adding two others together in the z-axis (intensity).

It only works with raw originals.

A reader wrote me about a genius plan to use this for in-camera mutilation of large dynamic range scenes by combining two very different exposures. I don't see it working. I'm missing the genius part.

You can't get to this with the OK key on playback. You have to use the menu button.