

Nikon D70/D70s User's Guide



INTRODUCTION

This is how I use and set up my D70. I have a D70; the D70s is exactly the same.

I start off explaining things so my mom can understand, and get on to deciphering every menu item for advanced users at the bottom.

BASICS:

CAMERA

Many of these adjustments require you to be in the P, S, A or M exposure modes. You set that on the top dial. The cute preset modes often lock out some adjustments.

I leave most settings at their defaults and use the Program exposure mode. I never use the cute little preset icon modes because I prefer to set anything special myself.

ISO: I use 200. If the light gets dim and my images would get blurry from slower shutter speeds I increase the ISO to 400, 800 or 1,600. I never bother with in-between settings like 250 or 640. The D70 looks fine at ISO 1,600 if you need it. I'd much rather have a slightly grainy but sharp image than a less grainy but blurry one. Unlike film, the D70 looks great at high ISOs, so I use them anytime I need them.

I would love to use ISO AUTO, but usually don't because it also remains active in Manual exposure mode. This firmware defect defeats the purpose of the manual exposure mode. Using menus to deactivate AUTO ISO for manual exposure mode takes more time than AUTO ISO saves. Rats.

White Balance: I use AUTO -3 and use an 81A glass warming filter on the lens. I prefer warmer (oranger) images. See more details about how to set these on my D70 Back Panel Controls page and details on why you care at my general White Balance page.

QUAL: I shoot JPG NORMAL. This is called NORM and L on the top LCD, which stands for NORMAL JPG compression and Large (3,008 x 2,000) image size.

I've made 12 x 18" prints of the same shot made in BASIC, NORMAL, FINE and raw. I saw NO difference! Seriously, if you saw these prints you wouldn't be able to sort them out either. I can see only the slightest differences on my monitor enlarged to 100%, which is similar to a 20 x 30" print, and my digital LCD monitor has 100% MTF pixel-to-pixel, which prints don't. Don't worry: if you need space, shoot BASIC and no one will see the difference. The only way to tell is by looking at the file size.

I'll use BASIC for parties and sports when I'm shooting many hundreds and hundreds of images at once. In these cases I'm more concerned with time wasted for the files to transfer, copy and archive. Basic looks 99% the same as FINE, even blown up big.

I'll use FINE on rare occasions where I'm shooting just a few images and expect to peer at them very closely. In these cases the extra size isn't significant if I expect to be spending a lot of time analyzing each image.

I don't use raw, as you can read on my Raw vs. JPG page.

I avoid FINE JPG because NORM gives me the same results, with half the file size. If I shot FINE I might run out of room on a card and miss a shot. Missing a shot is a very visible defect, and I see no defects in NORM. Nikon knows what they're doing. That's why they call it Normal and that's why I normally use Normal JPG.

OPTIMIZE IMAGE: I prefer the vivid color I get from Fuji's Velvia 50 film, so I tweak my D70 to give color as vivid as I can get. To do this go to MENU > Shooting Menu (camera icon) > Optimize Image > Custom > (set Saturation to + and Color Mode to IIIa) > - - Done > OK. If you forget to select "- - Done" and hit OK it won't remember these settings! Details are on the Shooting Menu page.

For photos of people I either set the colors back to normal, or cheat and use the Portrait preset mode on the top dial.

FOCUS: AF.

METERING: Matrix.

LENS

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

More advanced lenses have focus mode settings, which will be either "M/A - A," or "A - M" on older lenses.

On older lenses I leave it at "A," which is Autofocus. "M" is manual focus. Sometimes you also have to move the switch on the camera, which is a pain.

If the switch says "M/A - A" then I 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.

Non-[G](#) lenses will have an aperture ring where the lens is attached to the camera. Set this this ring to the largest number, usually 22, if not 32 or 16. This number will be in 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 the D70s/D70/D50.

MORE

These are the basics. Keep reading for far more explicit details at the end.

CONTROLS (I explain every button and knob)

CONTROLS: FRONT of CAMERA

Focus Mode (the little lever at the bottom of the lens marked AF and M [hidden above]): I set it to AF. This means Auto Focus. M means manual focus. In manual focus you have to twist the focus ring yourself and look for a sharp image in the viewfinder. In manual you also can look for the green dot at the bottom left in the viewfinder. The green dot lights up when you're in focus.

Depth-of-Field Preview (the little button below the lens in the photo above): 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.

Flash Bolt Button (left side of flash hump, as seen from the rear): This does several things depending on how and when you press it.

1.) If the flash is down, press the flash button and the flash pops up.

2a.) If the flash is up, press and hold the flash button and turn the front dial to change the flash exposure compensation. This sets the brightness of the flash. + makes the flash brighter, - makes it dimmer. This setting only changes the brightness of the flash. It leaves the background ambient exposure alone. Set it to - if your subjects are getting washed out. If you run out of flash power beyond 10 to 20 feet then setting it to + can't make the flash any brighter.

If you set flash exposure compensation to anything other than zero you'll see a little "+/- bolt" icon in the finder and on the top LCD.

2b.) If the flash is up, press and hold the flash button and turn the rear dial to change the flash sync mode. You'll see it on the top LCD in the box with the bolt.

FLASH SYNC MODES

Select these by holding down the flash button on the left side of the flash hump and spinning the rear dial. Your selection is shown on the top LCD in the box with the bolt.

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 21, which defaults at about 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 CSM 21 to lighten the backgrounds indoors, but watch for motion.

I usually use Normal mode, since if I don't I can get some scary long exposures if I'm not expecting them in the dark.

Red-Eye (eyeball icon): 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'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.

Red-Eye SLOW (eye and SLOW icon): This is the SLOW mode and redevye. 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 goes 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. Read about flash lock later on my Custom Menus pages.

REAR doesn't do anything with short exposures. REAR also engages SLOW, but SLOW doesn't light up on the LCD. This lack of the SLOW indication is a flaw in the firmware. No big deal. In REAR the D70's exposure setting in Program mode chooses slower shutter speeds and small apertures if you're in daylight.

Trick FV Lock Mode: You set this in the Custom Menus. Check it out; it prevents people from blinking with flash!

CONTROLS AND SETTINGS: TOP PANEL

From left to right:

Exposure Mode Dial (Left side): I use "P" for program auto exposure. In this mode the camera chooses the f/stop and shutter speed for you. If I want to use 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 "*" is added next to the P on the top LCD to let you know you've chosen a different combination for exposure.

If you want to use only one aperture or one shutter speed then use S or A mode. If you want to set it the hard way, use M, manual, mode.

Metering Mode: Its little icon shows four corners and a central dot. It looks a little like a [*]. I use the default of Matrix, which is shown by the four corners. Spin the control knob while holding this button and you can select center weighted (a circle) and spot (a dot). I never use these other modes.

* **Green Dot** (combined with metering button). This resets many of the camera's controls to their defaults when held in along with the other green dot button on the top left of the back of the camera. This is handy at the beginning of each day, since it will reset everything from whatever whacky ISO, white balance, file format and other settings you were using the night before.

Power Switch (right side around shutter release): ON, unless the camera is put away in a case. The D70s only wakes up when you tap the shutter, so it's off even when the switch is set to ON. There is no battery drain unless the shutter is tapped and the camera wakes up. The only thing the OFF position does is act as a lock against unintended operation.

+/- Exposure Compensation. This makes the picture lighter or darker. Hold it and spin the rear dial to change the brightness of your pictures. Remember to set it back to zero when you're done. If you don't you'll see a "+/-" in the viewfinder and the top LCD. You can read the value of this setting on the top LCD and through the viewfinder, which is great!. See more at How to Set Exposure. Ignore Nikon when they suggest you don't use this with Matrix Metering; I do it all the time.

Backlight (button on right with a sun on it): press this to light the top LCD at night.

Format (combined with backlight button): Hold this along with its brother on the back left rear of the camera (combined with the rectangle button). You'll get a blinking "For" on the top LCD. Hold both of these again and you'll completely reformat your memory card. Professionals reformat a card each and every time we put a card in the camera. This is because files and structures are sometimes picked up or changed when read with a card 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 may leave the potential for errors.

CONTROLS and SETTINGS: BACK of CAMERA

From left to right:

BKT: I don't use bracketing. This control sets bracketing. Hold it and spin the two control rings on the right of the camera while looking at the top LCD.

Rectangles (also doubles as one of the two **FORMAT** buttons): This controls the frame advance mode. You hold this and spin the rear control dial. When you see [S] on the top LCD you have the normal mode I use, which gives one shot each time you press the shutter. Hold and spin to show rectangles on the top LCD and you're in Continuous mode. In Continuous mode the camera keeps taking pictures for as long as you hold down the shutter button. Pro cameras label the rectangles as C, for Continuous. Spin it some more and you'll see a clock. This is the self timer, in which mode the camera goes off a few seconds after you press the shutter. The mode that shows a narrow black rectangle sets the D70s to respond to the EN-L3 remote control.

AE-L AF-L (Top center): Hold this to lock settings while shooting. You can alter what this button does in the custom menus. I get into more details under custom settings for this button.

Play [>] Button: Press it to see your pictures.

ISO/Checkerboard, WB/?, and QUAL/ENTER/Magnifying Glass Buttons: these do different things depending on whether the camera is taking a picture or showing one. If the camera is idle, or you tap the shutter, the camera is in the taking mode and the buttons do what the silver letters say: ISO, WB and QUAL. If the camera is displaying an image the buttons do what they say in yellow: checkerboard, ? and ENTER. I'll explain each of these as if they are seven different buttons below.

Often the camera is in playback mode from the last shot. I need to tap the shutter to put the camera back into taking mode for the ISO, WB and QUAL functions to work. I make it a habit to tap the shutter button first before using those buttons just in case.

ISO: I use 200 as explained of the first page. If you just took a picture be sure to tap the shutter button to return the camera to the taking mode. If you don't and are viewing a photo you just made the button will swap among the various multi-image playback modes!

WB (White Balance): I use AUTO -3 (A -3) and use an 81A glass warming filter as explained on the first page. See my White Balance page for more details about what this adjustment does and why you care. To choose different settings, press and hold the WB button and turn the rear knob. Look at the top LCD and you'll see the little sun and cloud etc. icons cycle as you turn the knob.

To set the D70 to give accurate color under any arbitrary weird combination of lighting you can use a manual white balance mode called PRE(set). It's shown as the PRE icon on the far right of the top LCD, just past the Shade icon. Spin the knob while holding WB until you get to PRE. Release the button. Press and hold the WB button again for several seconds until it makes PRE blink. Point the camera at something white or gray that's in the same light as the subject and press the shutter. If "Gd" flashes you're good. If "nG" (no good) flashes, try again. You can cheat (I do) and point the camera at a broad light source, like a fluorescent fixture, and get great results without having to carry or find a gray or white card.

The PREset mode is used to tell the camera what's supposed to be neutral. Once you've set this the camera corrects all the colors to keep neutral grays and whites as neutral grays and whites. This usually gives great colors for everything else in the same light.

QUAL: I use NORM - L, or NORMal compression, Large (3,008 x 2,000) JPEG, as explained of the first page.

Checkerboard: this lets you see one, four or nine images on the screen during playback. Press the button to switch among these modes.

? / Key: In playback it protects (locks) the image from erasure. Warning 1.): it marks the file so well that it won't empty out of my trash on my computer unless I go in and remark the file on my computer first. Warning 2.): these images are erased from your memory card when you format anyway. I don't use this lock feature. When setting menus the "?" will give more information about your settings.

Magnifying Glass: Press to zoom in on image. When you do this you can zoom in more by pressing the checkerboard button and spinning the rear dial. You can use the thumb switch to scroll around the image.

ENTER: Used while playing with the menus.

Lock Switch: This is the L - dot (lock - unlock) switch below the four-way thumb switch. The dot (unlocked) position lets you move the AF area with the rocker button. The L (locked) position prevents moving the selected AF area. It doesn't lock your ability to navigate the menus, which is a huge advantage over the older professional D1X! I usually leave it in dot to allow me to select different AF areas.

Trash Can: Press once, then press again to confirm and delete an image during playback.

MENUS: PLAYBACK MENU ("[>]" icon)

Press MENU and then select the "[>] " (play) icon to get into the play menu.

Delete: This is helpful if you want to delete all images while saving those for which you pressed the "? / Key" 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, so I don't use this.

Playback Folder: The camera can record and play back from different folders. I leave this set to ALL. CURRENT ignores photos in different folders. You'd only have different folders on your card if you shot them in a different camera without reformatting (a bad idea) or played with your camera deliberately to create new folders. This is difficult with the D70 and I cover it later.

Rotate Tall: I set this to NO. If you set this to ON and if you have vertical images and set autorotate to ON, vertical shots will rotate themselves on playback. I prefer to rotate the camera physically on playback. When the camera does this electronically the resulting image is very tiny, since the screen is much less tall than it is wide.

Slide Show: Lets you amaze your friends with an exciting slide show on the tiny screen. I don't bother with this.

Hide Image: This lets you mark images not to play back on the camera, even though they remain on the card. Use this if you get an embarrassing shot of a friend and want to make them believe you deleted it! Move the cursor left and right to select images, tap it up or down 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 ignore this. You can mark which images to print, how many of each and if you want data and dates imprinted. I do all this in my computer.

MENUS: SHOOTING MENU (camera icon)

Press MENU and then select the camera (shooting) icon to get to the shooting menu.

OPTIMIZE IMAGE: This is where you can program the look of an image. You can mimic the effects for which we used to have to select different kinds of film. There are choices of several canned presets, as well as CUSTOM, which lets you set your own.

Remember to select DONE or OK when playing with the Optimize Image settings, otherwise it won't remember!

You can swap between your custom setting below and a canned preset, like PORTRAIT, by spinning the top left mode knob. Custom settings apply in the P, S, A and M modes, but not in the SPORTS, PORTRAIT, etc. modes. The dummy modes like PORTRAIT override most of your manual settings, and the camera reverts to your special settings when you return from one of the dummy modes. There's nothing wrong with the dummy modes; use them if they save you time. I use the PORTRAIT mode for people since I usually have my camera's colors cranked up. The mode knob makes it easy to swap.

Canned Settings: I don't use Nikon's canned Optimize Image presets of Normal, Vivid, Sharper, Softer, Direct Print, Portrait or Landscape. Feel free to play with them yourself. This is a beauty of the D70: you can use whatever works for you.

I prefer my custom settings below because I prefer to leave the chroma cranked all the way up and let the camera automatically control contrast and sharpening as conditions change. Your style of photography will differ.

You can look at the images made with each of the canned settings directly to see how you like them. You also can use Nikon's free Nikon View software or look at the data on the D70 itself to read what values of contrast, sharpening, color, etc, were used for each preset. The reason I skip the VIVID preset is because it selects Mode IIIa, but leave the saturation at normal. I explain these below.

For photos of people I either set the colors back to normal, or cheat and use the Portrait preset mode on the top dial. As mentioned on the top page, using the preset scene modes on the top dial often override any settings you've made. I only use P, S, A and M modes which unlock all the adjustments. Of course using the top dial's Portrait mode sets the colors optimally for portraits, and sets it all back when I spin that dial back to P, S, A or M. This trick saves me a lot of clicking around under Optimize Image, but also eliminates my ability to alter the White Balance while in the top dial's portrait scene mode.

Optimize Image Custom Settings

As mentioned on the first page, I prefer the vivid color I get from Fuji's Velvia 50 film, so I tweak my D70 to give color as vivid as I can get. To do this I go to MENU > Shooting Menu (camera icon) > Optimize Image > Custom > (set Saturation to + and Color Mode to IIIa) > - - Done > OK. If you forget to select "- - Done" and hit OK it won't remember these settings!

Here are what each setting inside the Custom option of Optimize Image does.

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: This is Nikon's code word for Contrast.. I always leave mine set to AUTO. In AUTO the D70 automatically applies the Zone System and adjusts contrast to match your subject, for each and every shot! The D70 automatically lowers contrast and increases dynamic range for very contrasty subjects, and cranks it up for dull subjects. I've played with the manual settings out of curiosity. Saturation varies a little with contrast, too. If you crank it to +2 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. AUTO works great.

The CUSTOM Tone Compensation setting (scroll down) is for hackers. If you pay Nikon \$100 for Nikon Capture software you can create your own crazy H&D curves and then go out of your way to load them into your D70. Once you create and load them you no longer need the software. Custom curves are way beyond anything with which I want to bother. Real photographers pay more attention to their subject's lighting.

Color Mode has three settings:

Mode Ia is default. It's Nikon's secret code for standard sRGB. sRGB is the world standard for digital images and the Internet.

Mode II is secret code for Adobe RGB, which only hackers use. Adobe RGB gives dull colors when used by anyone other than an expert in color management who prints his own work. Even if you're an expert, if you send your work out for printing, 90% of the time the people doing the printing aren't experts and screw it up for you. Ignore desktop armchair hobbyists who bleat on about the broader color gamut of Adobe RGB. I've created and printed 100% chroma grads in Adobe RGB and sRGB and

saw no difference when printed either on Inkjets or on the \$250,000 Lightjet 5000 on Fuji Supergloss. Oh well! Using Adobe RGB is asking for trouble unless you really know what you're doing and have complete control over your process. If you have to ask, don't use Adobe RGB.

Mode IIIa is secret code for a standard sRGB mode which gives bolder color. I use this all the time.

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

Saturation is the vividness of colors.

+ **Enhanced:** I prefer violent color, so I crank it up to +. I'd use ++ or +++ if my D70 had it.

0 Normal: For normal people shots you're probably better off with 0. This is the default. There is no AUTO saturation as on the D200, and on my D200 I leave it cranked to + anyway.

- **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 go directly to B/W. Your interests and taste will differ. There is no native B/W mode in the D70.

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.

- - **DONE:** This is important: after you play with all the above Optimize Image settings you must select "- - DONE" and "OK" for them to be remembered and take effect. I never trust this and go back in and check that my settings took hold.

LONG EXPOSURE NOISE REDUCTION (NR): Forget this. It slows the camera frame rate down to half! If you make exposures of a minute or more it will get rid of the minor purple haze in the corners, but in exchange you have to wait around in the dark for another blank exposure as long as your first time exposure! The D70 uses the second exposure as a reference to subtract from the first image to eliminate any camera-induced hot pixels or haze. Engineers call this "dark frame subtraction." You can see examples of this haze on my D200 Dark Exposure page. I've never seen this haze in any real night photography. It only becomes apparent for astronomically long exposures of darkness (pun intended). The D70 isn't smart enough to disable this automatically at normal shutter speeds, so if you forget and leave it on your frame rate slows to a crawl even in daylight. I never use this setting.

IMAGE QUALITY: This duplicates half of the QUAL button. I only use this menu if I want to see this on the back of the camera instead of the top LCD.

IMAGE SIZE: This duplicates the other half of the QUAL button. I only use this if I want to see this on the back of the camera instead of the top LCD.

WHITE BALANCE: This duplicates the WB button. I only use this menu if I want to see this on the back of the camera instead of the top LCD.

ISO: This duplicates the ISO button. I only use this menu if I want to see this on the back of the camera instead of the top LCD. I explain the buttons duplicated by these menus here.

CUSTOM (CSM) MENU (pencil icon)

Press MENU and select the pencil icon to get to the Custom Settings Menu.

First select the "Detailed" mode under Menu > Setup (wrench) Menu > CSM menu, otherwise you'll only to get the first few items!

[R] Menu Reset: This returns everything below to factory default. Play with everything below to your heart's content, since if you do screw anything up this reset will fix it.

01: Beep. For God's sake, turn this to OFF. Beeping cameras annoy everyone and scream "RUDE AMATEUR!" If you insist, set this to ON only in private.

02: Autofocus: Use AF-S (default) for still subjects, and set AF-C (continuous) to track moving subjects, like sports.

03: AF Area Mode:

Set Single area (the default) for still subjects.

Set Dynamic area for moving subjects. Dynamic Area lets the camera select the AF areas by magic as the subject moves. This really works and is perfect for birds and sports.

Use Closest Subject when you hand your camera to a non-photographer. It uses all the AF sensors and guesses that the closest one is your subject. This prevents the common problem with people shots where the camera focuses in the middle, on the wall behind them!

04: AF Assist: This is the little light that helps the camera focus in the dark. Default is ON. Set it to OFF if you're spying on people in the dark and don't want to be noticed.

05: ISO AUTO: This lets the camera increase the ISO automatically as the light fades. I would use it all the time, except that a firmware flaw leaves this active even in manual exposure mode. If you set it to ON you have the option to select the lowest shutter speed the camera will use before it starts to increase the ISO.

06: NO CF Card?: Leave this to LOCK. if you turn it off it will let you take pictures with no card! You accidentally could shoot a wedding and not realize you have no card. When set to ON it locks the camera if you have no card.

07: Image Review: This shows the photo you just took on the monitor after you take it. I set mine to ON, unless I don't plan to look at the monitor after each shot. When you use this remember that the functions of the ISO, WB and QUAL buttons will do things you don't expect after you take a photo, since the camera goes into playback mode for a few seconds after each shot. Because of this I make a habit of tapping the shutter button to return to shooting mode before I make any ISO, WB or QUAL adjustments. Otherwise I often would change something related to playback by accident!

08: Grid Display: These are fine horizontal and vertical lines in the finder. I leave these ON to help me keep my horizons straight. Default is off.

09: EV Step: Your choice of 1/3 or 1/2 stop increments. I prefer the default of 1/3.

10: Exposure Compensation: I leave this in default OFF. This means you have to hold the +/- button at the same time as turning the command dial to alter the exposure compensation. If you turn it ON then any turning of the command dial will alter your exposure.

11: Center Weighted: This controls the diameter, in millimeters, of the area of the center weighted meter. I leave mine alone at 8mm, since I never use the center weighted meter anyway. This control allows you to make your center weighted meter see a bigger area to make it more like an averaging

meter, or make it smaller to be more like a spot. This setting doesn't have any effect on the spot meter. The spot meter is independent of the center weighted meter.

12: BKT Set: This controls what's changed when the camera brackets. You can change it to alter the white balance, or the exposure, or just the flash or ambient light exposure. I don't use bracketing, so I don't use this.

13: BKT Order: This controls the order of the shots made with bracketing. "Normal" first uses the metered exposure and then the altered versions. You may select instead for it to make the underexposed shots first. I don't use this.

14: Command Dial: You may choose to swap which dial does what when setting manual exposure. I leave it in default OFF/NO.

15: AE-L/AF-L: This sets what the AE-L AF-L button locks when held, and how. I leave mine in AE lock only, since in AF-S the AF locks when I press the shutter half way. I use this lock in strong backlight. I point the camera down at something as dark as my subject, press and hold the AE-L button, point the camera at the subject, press and hold the shutter to lock focus, move the camera again to compose, then release the shutter. This gyration of three camera positions saves me from having to use manual exposure and manual focus. The AE-L button locks exposure and the shutter locks the focus. Slick!

***TRICK:** Hidden in a screen below the first five options under CSM 15 is a sixth very special option: Flash Exposure lock. This is critical for people and pet shots. Nikon keeps this even more secret by calling it "FV Lock." Scroll down past the bottom of the other five options to see it. Select FV Lock and the AE-L AF-L button becomes the Flash Exposure Lock button. Select this and when you press the AE-L AF-L button the flash goes off to measure and preset the exposure. Now every shot fires the flash at the previously measured level without any preflashes. This 1.) eliminates any shutter release delay and 2.) eliminates any potential for subjects eyes blinking.*

16: AE Lock: more of the same. I leave this OFF. If you turn it on it locks the exposure when you hold the shutter halfway. This would mimic cheaper point-and-shoot cameras, but is silly since 1.) the camera has a dedicated AE-L button and 2.) one usually wants to lock exposure and focus on different things. If your subject is conducive to locking everything at the same place you probably don't need locks at all.

17: Focus Area Wrap: I leave this off. If I keep pressing the AF selector in one direction the selected AF area goes to the end and stops. To go from far right to far left I have to go left and pass the center. If you turn this to ON (wrap) you can cheat and get to the left sensor by clicking one more time to the right from the far right sensor! This is too confusing for me, so I leave it OFF (no wrap).

18: AF Area Illumination: This lights up the AF areas in the finder. I leave it at AUTO, in which it turns it on in the dark. OFF never turns it on, which is silly, and ON leaves them on even in bright light, which is stupid.

19: Flash Mode: I leave it in TTL, which lets the built in flash expose properly and automatically. Manual sets the power manually. Commander mode lets you control an SB-600 or SB-800 by magic. I have a page on using the Wireless Flash Modes. If you forget to set it back to TTL the flash goes off, but has no effect on the exposure! Be sure to check this before thinking your camera is defective if your flash doesn't come out in your picture..

20: Flash Sign: Leave this ON. Turning it off extinguishes the bolt in the viewfinder if you need flash. This is more than an idiot light: the matrix meter analyzes the subject's lighting ratio and turns on the bolt when the ratio exceeds the camera's (or aesthetics') dynamic range. This is why you'll see the flash bolt come on even in direct sunlight if you have deep shadows.

21: Slowest Shutter Speed: This sets the slowest shutter speed the camera will use in low light in the P and A modes, in normal flash sync. I set this to 1/8 indoors if people hold still. Default is 1/30. I usually leave it at 1/15. Set this slower to let the ambient light have more effect indoors with flash, and set it faster to stop your kids from leaving weird blurry ghosts behind them. Use a higher ISO to get faster speeds and have the backgrounds fill in with ambient light.

22: Monitor Off Time Delay: This sets how long the rear LCD stays lit each time. I leave it at 10 seconds. Set it longer if you want the screen to stay lit longer without having to hit any keys. Luckily the camera has such great battery life there's no reason not to set it for as long as you like.

23; Meter Off: This sets how long the meter stays on each time you tap the shutter. I leave it at 6 seconds. Set it longer if you like; I've never had any battery life issues with this camera.

24: Self Timer Delay: I leave it at 2 seconds, since I use the self timer to replace a cable release. Set it to 10 seconds (default) for enough time to run to get into a picture. You can set it to 2, 5, 10 or 20 seconds.

25: Remote: This sets how long the camera stays awake ready to release as controlled by the remote infra-red shutter release. If you set this too short the camera may go to sleep and ignore the wonderful little release before you get to pressing it. Set it longer and the battery may run down faster, but I've never had a problem. I set this to 5 minutes. After 5 minutes I'll have to use the rectangles button to set the camera back to remote release mode again.

SET UP MENU (wrench icon)

Select the Set Up menu by pressing MENU and selecting the wrench icon.

Folders: You can create, select and rename folders on your memory card. Normal people never use this menu. The pro cameras have a trick which creates a new folder if you hold the "?" button on power on, but the D70 has no such automatic feature. It's more of a pain to make new folders than it is to sort the images later from the same folder, so I don't bother.

Select Folder chooses the folder into which new photos are recorded.

New lets you make a new folder and name it.

Rename and **Delete** are self explanatory.

File Number Sequence: This lets the camera number your images starting at the last shot you made, even if you've formatted your card. I leave this to ON. If you turn this feature off you'll start from 0001.JPG each time, which is stupid. It's stupid because in time you'll have 150 files all called DSC_0012.JPG on your hard drive. You'll thank me when you try to put together a slide show and don't have to rename them all! Also it lets you keep track of how many shots you've made, since it runs up to 9,999 shots before it resets.

Format: this is the hard way to format a card. If I'm in bright enough light to see the dim red FORMAT buttons I use those instead. Professionals always reformat a card every time it's put back into a camera to prevent any potential for card errors.

CSM Menu: As I've suggested, set this to Detailed to get the complete Custom Settings Menu. Otherwise you only get a few custom settings.

DATE sets the time and date.

LCD Brightness isn't. LCD Brightness sets the viewing angle for the LCD, not the brightness of the backlight. I leave it on 0. Only play with it if you look at the LCD from odd angles or work in very hot or cold temperatures

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

Video Mode 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.

Language: Set yours to Swedish, then see if you can navigate back to English. Fun!

Image Comment: This lets you encode 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. Our Japanese friends have still not provided us with a real © symbol here.

You set this by going to MENU > Setup Menu (wrench) > Image Comment > Input Comment > (add your message like you did on 1970s video games) > Enter. If you forget to hit ENTER the Japanese will have a laugh on you, since you have to start over. So sorry!

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. So Sorry! I don't write the firmware.

To edit or remove a character, select it in the Input Comment screen by holding the checkerboard button and spinning the rear control dial. Now press the Trash button to delete, or add a new character with the four-way navigation switch and press the WB/?/key button to add it.

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.

USB: I leave it at mass storage. Use whichever works better with your computer.

Dust Ref Photo is used to take a picture of the dust on your sensor. If you pay Nikon another \$100 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!

Firmware Version lets you check the firmware version. This lets you confirm if your camera is up-to-date with Nikons' free firmware updates.

Image Rotation sets a flag in vertical images which keys most software to display the image vertically. It does not actually rotate the images; it just sets a flag. Someday the camera's firmware will work properly and rotate the image itself, but no camera does that yet.

That's It! Enjoy!