Steve's DigiCams

Nikon

Coolpix 990
User Review

Posted 3/4/2000
(updated 10/18/2000)

Click on the camera for 360-degree QTVR tour

The Nikon Coolpix 990 is the first of the new wave of 3.34-megapixel resolution digital cameras. It retains the best features of the Coolpix 950 like the razor sharp Nikkor 3x zoom lens, the closest macro capability of any digicam, the highly durable magnesium alloy body and the unique swiveling lens design.

It now includes many of the user-requested improvements (CF card slot on side, USB connectivity, improved battery life, better LCD) and adds powerful new features like multizone autofocus, autoexposure bracketing, Flexible Program mode and a 7-blade iris diaphragm for real depth of field control.

The 990's 3.34 megapixel CCD delivers a non-interpolated image resolution of 2048 x 1536 pixels with an uncompressed TIFF image file of just under 10MB in size. Recording modes include still image capture at up to 2 frames per second in full resolution, 320 x 240 QVGA at 30 frames per second and a new movie mode that shoots 40 seconds of (silent) QVGA Motion-JPEG at 15 fps.

Nikon has finally answered the question of how to keep the lens cap with the camera. They now include a "lens string" that slips around the joint between the two sections of the camera.

Read the:

Nikon Coolpix 990 Manual

8-page Coolpix 990 sales brochure

The Coolpix 990 has an exclusive Multi-Area autofocus mode for quick composition without interruption. It searches the 5 zones for closest subject or sharpest subject. It is a direct descendant of Nikon pro film and D1 digital SLR cameras.

The 990 also features a 50-step manual focus, Nikon's 256 element Matrix metering and new 256 element Matrix white balance system to insure the best possible exposure and color balance in every shot.

New is a 7-blade iris diaphragm for true depth of field control and versatile exposure control with four exposure modes:

1. Programmed Automatic (with Flexible Program)
2. Shutter Priority - (bulb, 8s, 4s, 2s, 1s, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250, 1/500, 1/750, 1/1000)
3. Aperture Priority - (in wideangle: F2.5, 2.8, 3.1, 3.5, 3.9, 4.4, 4.9, 5.5, 6.2 and 7.0 - in telephoto F4.0, 4.4, 5.0, 5.6, 6.3, 7.0, 7.9, 8.9, 9.9 and 11)
4. Full Manual control of both shutter and aperture.

In the "P"rogrammed automatic mode there are more options available via the Flexible Program mode. By rotating the command dial the "P" changes to a "P*" and each click brings up a different combination of shutter speed and aperture values that yield the same exposure.

Exposure compensation and Auto Bracketing capabilities are also included.

The 990 has a high-speed USB interface which makes downloading those large image

files to a PC or Mac very fast. This is a dual I/O port supporting both USB and serial RS-232 connections. Nikon does not supply a serial port cable and the NikonView software is not capable of controlling the camera other than image downloads. The 990 now has user-selectable video output (NTSC or PAL). This eliminates the need to build two different camera models but the 990 will come in two different color schemes. The North American cameras will be charcoal grey with a purple colored finger grip (as shown here), the European models will be the black and red scheme used on the Coolpix 950's.

Another thing that can be connected to the Coolpix 990 (or the 880) USB port is the new MC-EU1 wired remote control. The MC-EU1 allows you to trip the shutter and operate the zoom lens in A-Rec or M-rec modes. In Playback mode it lets you scroll forward or backwards through the stored images.

An even more powerful record mode operation is available for time-lapse recording. There are two modes: Interval Mode A begins when you push the release button and repeats at the programmed intervals. Interval Mode B is the same but the camera begins automatically after a preset amount of time has elapsed.

The remote's shutter button is like the one on the camera and has a half-press position to set focus and exposure and trips the shutter when fully depressed. The LCD panel on the MC-EU1 shows the settings for the interval modes and also displays the camera modes (A-Rec, M-Rec, Play) and "Busy" while writing to the CF card. There is a builtin illuminator that can be turned on so you can see the LCD display in the dark.

For more info on the MC-EU1 remote cord, click here to see the user manual in PDF format, it's rather large so be patient.

Note: The Nikon 990 requires firmware v1.1 or greater to use the MC-EU1. Most 990's shipped with v1.0

The 990's CompactFlash card slot is located on the side, making it easy to change cards without removing it from a tripod. Nikon is supplying a 16MB 8x high performance Lexar CF card.

This is a CompactFlash Type I slot, it is not Microdrive compatible.

Nikon has bundled one of Lexar Media's new and fast 8x speed, 16MB USB-enabled JumpSHOT CompactFlash cards. Included is a mail-in coupon for the JumpSHOT USB cable for $9.99 (50% discount) if you'd like to have an untethered way of downloading your images.

Click here to

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Lenses & Options

Coolpix 990 Specifications

CCD	1/1.8-in. high-density CCD; total number of pixels: 3.34 million
Image size	2,048 x 1,536 pixels XGA-size (1,024 x 768) VGA-size (640 x 480) 3:2 (2,048 x 1,360) selectable
Lens	3x Zoom-Nikkor; f = 8-24mm (equivalent to 38-115mm) F2.5-4 with macro; 9 elements in 8 groups; all glass
Autofocus	Contrast-detect TTL AF; 4,896-step autofocus control including macro range 5-area Multi AF or Spot AF selectable
Focus modes	1) Continuous AF mode (when using LCD monitor) 2) Single AF mode (when not using LCD monitor and/or selectable from shooting menu) 3) Manual [50 steps from 2cm (0.8 in.) to infinity with Peaking indication]
Shooting distance	30cm (11.8 in.) to infinity 2cm (0.8 in.) to infinity in Macro mode
Optical viewfinder	Real-image zoom viewfinder magnification: 0.4~1.1x frame coverage: approx. 85% diopter adjustment: -2~+1 DP
LCD monitor	1.8-in., 110,000-dot, low-temp. polysilicon TFT LCD brightness/hue adjustment frame coverage: approx. 97% (through/freeze image)
Auto OFF mode	30 sec.; can be set manually (1/5/30 min.)
Image Storage	uncompressed TIFF or compressed JPEG
Media	CompactFlash (CF) Card Type I
Shooting modes	Fully automatic ([A]-REC) mode Custom ([M]-REC) mode (three combinations of mode settings can be memorized)
Shooting menu	1) White balance 2) Exposure metering 3) Continuous 4) Best-Shot Selector (BSS) 5) Converters 6) Tone compensation (Auto/Normal/More Contrast/Less Contrast/Lighten/Darken/Monochrome) 7) Image Sharpening 8) Digital zoom (stepless, up to 4x)

Capture modes	1) Single 2) Continuous 3) Multi-Shot 16 (16 frames in 1/16 size) 4) VGA Sequence 5) Ultra High-speed Continuous (approx. 30 fps for 80 QVGA-size images) 6) Movie (40 sec. for QVGA-size images at 15 fps)
Exposure metering	4-mode TTL metering: 1) 256-segment Matrix 2) Center-Weighted 3) Spot and 4) Spot AF Area
Shutter	Mechanical and charge-coupled electronic shutter 8 to 1/1,000 sec.
Aperture	7-blade iris diaphragm 3 EV range in 1/3 EV steps
Exposure control	1) Programmed Auto with Flexible Program 2) Shutter-Priority Auto (with Sensitivity control) 3) Aperture-Priority Auto 4) Manual; Exposure Compensation (±2 EV in 1/3 EV steps) Auto Bracketing (5 steps within ±2/3 EV)
Exposure range	EV -2~+15.5 (W), EV -0.8~+16.7 (T) (ISO 100 equivalent)
ISO Sensitivity	100, 200, 400 or Auto
White balance	1) Matrix Auto White Balance with TTL control 2) 5-mode Manual with 7-step fine tuning (Fine/Incandescent/Fluorescent/Cloudy/Speedlight) 3) Preset
Self-timer	10 sec. or 3 sec. duration
Built-in Speedlight	Guide number 9/30 (at ISO 100, m/ft.)
Flash control	Flash modes: 1) Auto Flash 2) Flash Cancel 3) Anytime Flash 4) Slow Sync 5) Red-Eye Reduction
External Speedlight	Multi-flash sync terminal connects to external Nikon Speedlight SB-28/28DX/26/25/24/22 through the Multi-Flash Bracket Unit SK-E900; built-in Speedlight can be canceled when using external Speedlight(s)
Playback menu	1) 1 frame 2) Thumbnail (4/9 segments) 3) Slide show 4) Zoom playback (stepless up to 3x) Histogram indication & highlight point display Peaking indication Hide and protect attributes can be set to each image
Delete function	Deletes all frames or selected frames
Interface	USB interface; Serial interface (Windows: 115kbps, Macintosh: 230kbps)
Video output	NTSC or PAL (selectable)

I/O terminal	Power input Video output Digital output terminal (USB/Serial) Sync terminal for external Speedlight
Bundled Software	NikonView Version 3, Altimira Group's Genuine Fractals 2.0 LE, Canto's Cumulus 5.0 LE Image and Asset Management Software, iPIX's Immersive Imaging Software, and QuickTime Video Version 4. Great Photo! image correction software for Mac and PC to be added by June 2000. The Reference CD-ROM includes Adobe Acrobat Reader 4.0, Instructions for Using Nikon View Version 3, and Nikon's "Guide to Digital Photography" (Online Camera Manual for the CoolPix 990).
Power requirements	4 x 1.5V alkaline "AA"-size batteries; 1.5V FR6 lithium or 1.2V Ni-MH "AA"-size batteries can also be used; AC adapter (optional)
Battery life	Approx. 1.5 hrs. when using LCD monitor and four 1.5V alkaline "AA"-size batteries at normal temperature (20(C/68(F)
Dimensions (W x H x D)	Approx. 5.9 x 3.1 x 1.5 in. (2.5 in. at grip)
Weight (without battery)	Approx. 370g (13.1 oz.)

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Nikon

Coolpix 990

The all glass, 3x Zoom-Nikkor lens has 38-115mm coverage (35mm equivalent) plus a virtually stepless 4x digital zoom option. If you enjoy shooting close-ups you can get as close as 0.8 inches away from your subject with the Nikkor lens' superb macro capability.

The Coolpix 990 accepts optional Coolpix Lenses and accessories, including the Nikkor fisheye (above), wideangle, 2x and 3x telephoto converters. Third-party 28-37mm stepup rings, filters and auxilliary lenses are available from various dealers to further enhance your camera's capabilities.

Shown here is the older WC-E24 and the new and larger WC-E63 wideangle conversion lenses. The WC-E63 features ED glass for less distortion and flares and is threaded for 72mm filters.

Closeup of the large monochrome data display, the Mode/Power switch and the

programmable mode/function buttons. The command dial has been moved to the top-rear of the camera and is easily operated with your thumb.

Note the "P*" -- the Coolpix 990 has a Flexible-Program mode. Rotating the command dial lets you use different combinations of shutter speed and aperture.

The Coolpix 990 has TTL support for an external flash such as Nikon's SB-28DX shown here on the SK-E900 flash bracket. The 990 has menu options for control of both the internal and external speedlights, the internal can now be disabled while using an external flash. It does not use the infrared focusing aid of the SB-28 or SB-28DX flash units.

The Coolpix 990, like its sibling the Coolpix 950, has a swiveling lens and an all-metal magnesium chassis for lightness and durability. The 990 sports a charcoal gray textured color with a blue grip area and lettering. The hand grip has been significantly enlarged to give you more stability when shooting at extreme telephoto or slower shutter speeds.

Improvements on the bottom of the Coolpix 990 include a perfectly flat tripod mounting area with rubberized grips, all metal tripod socket and a secure but easy to access battery compartment.

The Coolpix 990 uses four AA size batteries as its power source. I highly recommend NiMH rechargeables as this camera like all digicams, eats alkaline batteries like candy.

At first I was a little concerned about the DC power input jack being on the front of the camera. But after plugging the cable in that goes to my Unity Digital ProPower pack I was thrilled to see that it was a match made in heaven. There's still plenty of grip surface left for your fingers and the angled plug makes the cable run straight down to the bottom of the camera.

There's a whole range of accessories available for the Coolpix 990.

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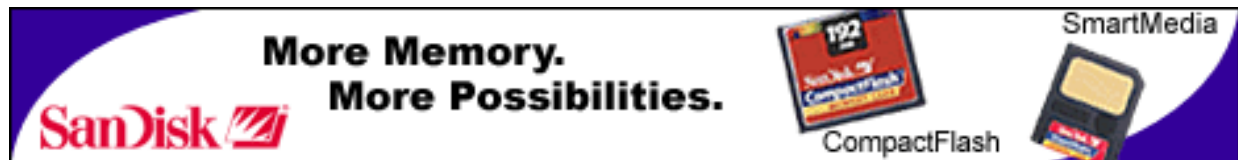
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Nikon

Coolpix 990
Features Menus

The Coolpix 990 has a new 4-way jog switch on the back that lets you more easily navigate the extensive menu system. Some menu items can also be changed quickly by rotating the command dial.

The first menu option is the white balance settings. Choices should be rather obvious; Automatic, White Balance Preset (see next frame), Fine (Sunny), Incandescent, Flourescent, Cloudy and Flash.

When using the White Balance Preset option you get a live preview to assist you in pointing the camera at your known white reference value.

Metering options are Matrix (256 element), Center-Weighted, Spot and the Spot metering option that is used if you are using the Autofocus Area option.
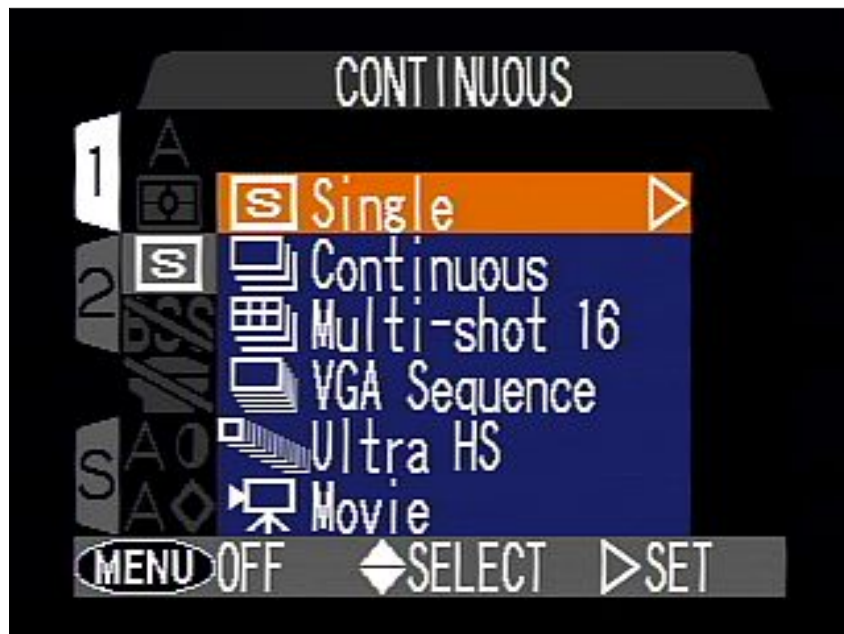
Here's the Record mode options:

- Single: Camera records one picture each time shutter is pressed
- Continuous: Camera records pictures in continuous sequence
- Multi-Shot 16: Camera takes 16 pictures which are combined into one image.
- VGA Sequence: Camera takes series of consecutive 640x480 Normal quality images at approx 2fps.
- Ultra HS: Camera takes series of 320x240 pictures in Normal quality at 30fps
- Movie: Camera begins recording 320x240 Normal quality movie when shutter is pressed and stops when shutter is pressed again. Up to 40 seconds may be recorded at 15fps.
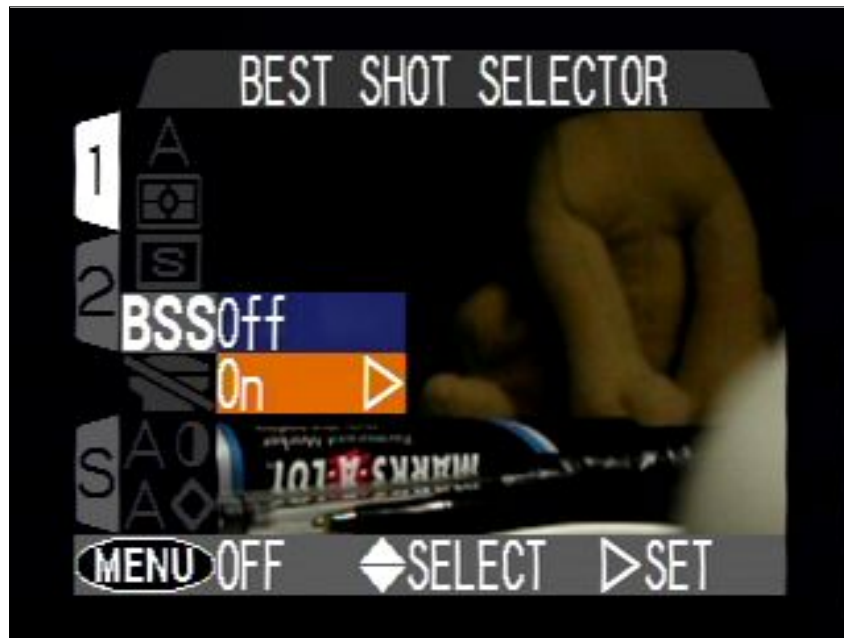
The Best Shot Selector (BSS) mode was first introduced on the Coolpix 950. It uses "fuzzy logic" to determine the best picture from a series of pictures taken in sequence. It can be used when you're shooting macro or using a slow shutter speed to automatically pick the best picture in terms of focus and sharpness.

When using the optional Nikkor lenses you can lock in certain presets with the Converters menu:

- Normal: No modifications made to settings (default)
- Wide Adapter: For WC-E24,, camera zoomed out to widest angle, flash is disabled for both internal and external.
- Telephoto1: For TC-E2 2X, camera zoomed out to maximum optical zoom, third step in LCD zoom display, built in flash and external flash disabled
- Telephoto2: For TC-E0 3X, camera zoomed out to maximum optical zoom, 0 step in LCD zoom display, built in flash and external flash disabled
- Fisheye1: Zoom fixed at widest angle, focus fixed at infinity, metering fixed at center-weighted, flash disabled, four corners of frame blacked out to create circular frame
- Fisheye2: Zoom fixed at widest angle, focus fixed at infinity, metering fixed at center-weighted, flash disabled, image fills entire frame
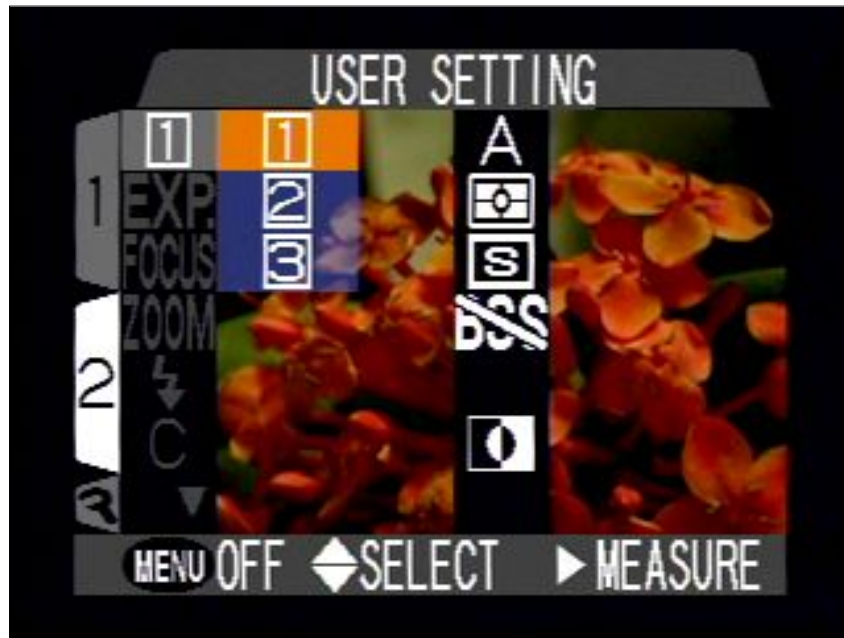
Image enhancement menu, these settings are hopefully obvious. Only one setting may be used at a time.

Image Sharpness menu options. To give the user complete control over the images you can now manually set the amount of sharpness applied to your pictures.

As with the Coolpix 950 the 990 allows you to build three user profiles of camera settings and store them for easy recall. Any modifications you make while in M-Rec mode are stored in the #1 profile.

Exposure Options. Set, reset or release the AE Lock, most useful when shooting panorama shots.

Auto Bracketing now lets you shoot a sequence of five shots and is somewhat complicated in operation but simple in use. Exposure changes in order +2/3 step, +1/3 step, 0 step, -1/3 step, -2/3 step with each photograph taken. In Programmed Auto, Aperture Priority and manual exposure modes the braketing is achieved by varying the shutter speed.

EXP +/- is the normal type of exposure compensation and works from +2 to -2 EV is 1/3 EV increments.


Focus Options: Autofocus Area Mode - camera automatically selects focus area containing the subject closest to the camera. See the next frame for the manual tracking mode of this option.

Autofocus Mode - Continuous Autofocus or Single Autofocus

Confirmation - When manual or auto focus is used, objects that are in focus are sharply outlined on the LCD monitor

Distance Units - for manual focus display, feet or meters
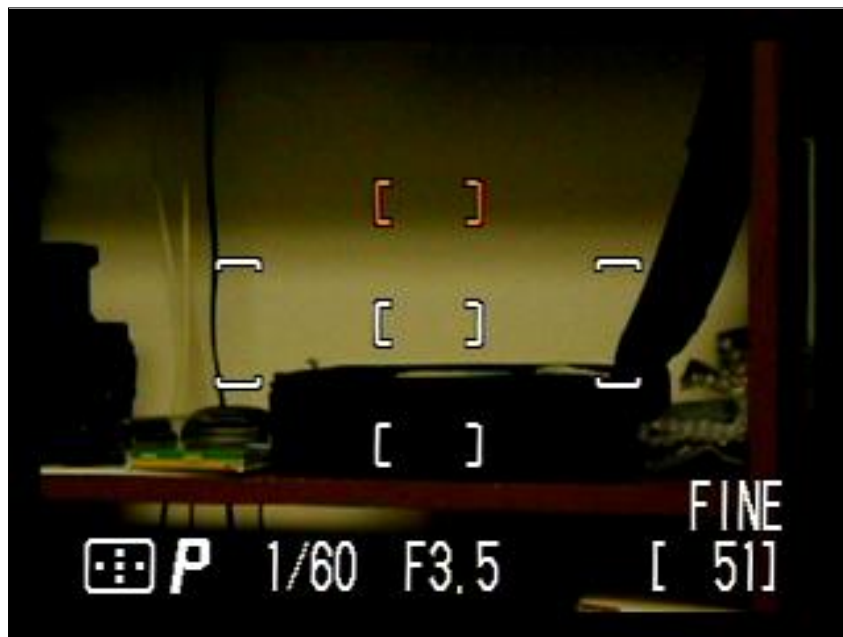
Using the focusing options you can enable the focus tracking manual mode and you'll see these brackets on the LCD monitor. By using the jog switch you can select any of the areas desired. You can also set the metering so that it uses spot mode on the selected focusing area.


Zoom Options: Digital zoom enabled or disabled. Startup Position (see next frame).

Fixed Aperture - if possible the aperture is fixed when zooming in or out.

Those of us with the Coolpix 950 practically screamed for this option and now we have it (at least 990 owners have it). You can have the camera remember where the lens was when you power down and it returns there on power up. Or you can manually lock it to full wideangle or full zoom position.
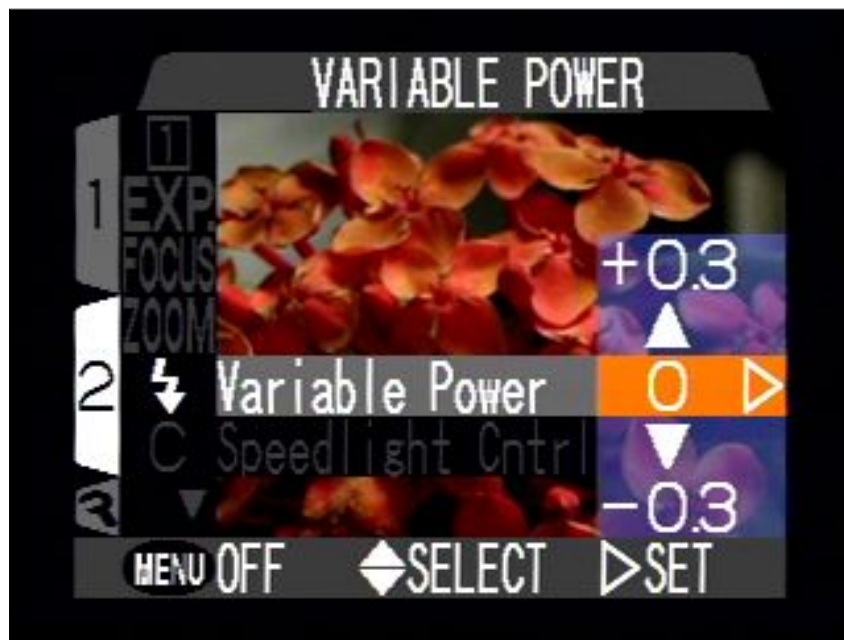
Flash Options: Variable Power - the power output of the builtin flash can be varied from -2 to +2 EV in increments of 1/3 EV.

Speedlight Control: Enable or disable internal flash when using an external flash via the sync connector.

Click here to

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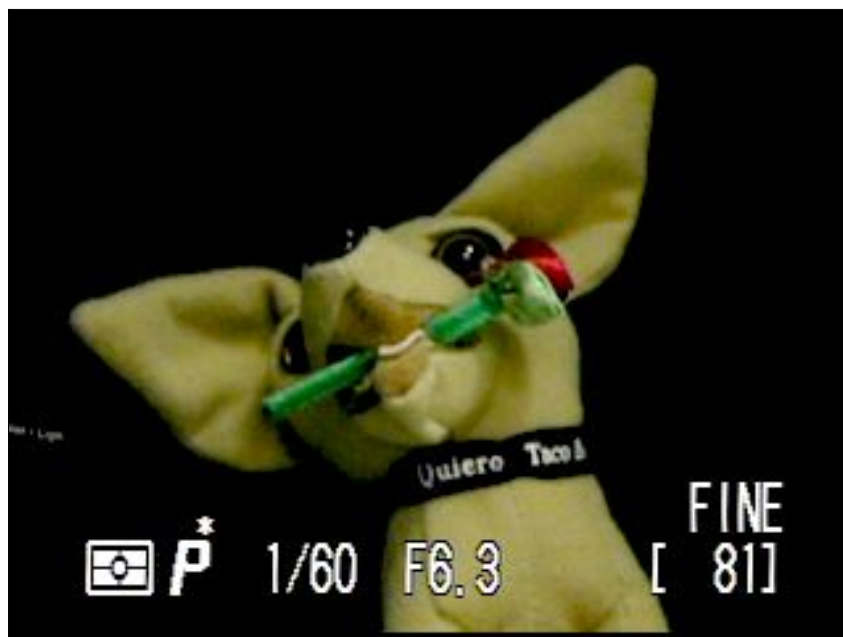# Return To Steve's
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Coolpix 990
Record / Playback / Options

Another most-requested item, the ability to use the selftimer while in macro mode is now a reality. You simply push the lower-left mode button below the color LCD to cycle through; infinity focus, selftimer, macro, macro with selftimer.

New to the Coolpix 990 is the Flexible Program mode. If the ISO is set to Auto and the camera is in the "P"rogrammed Automatic mode, you can rotate the main command dial

and bring up different combinations of shutter speed and aperture. When the 990 is in Flexible Program mode the "P" changes to a "P*" and you can see the shutter speed and aperture values change as you rotate the command dial.
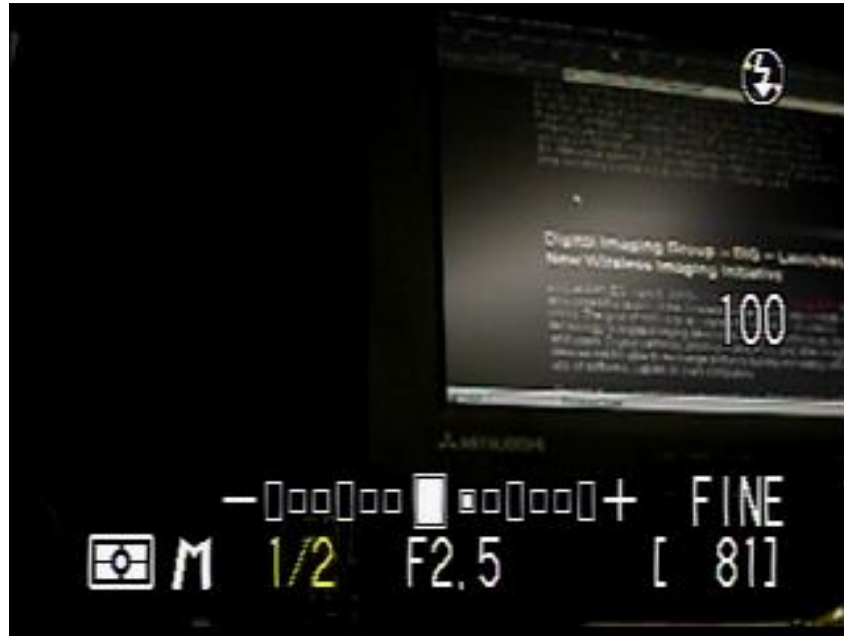
Another new feature is full Manual exposure control of both shutter and aperture. While in Manual mode you get this onscreen exposure meter indication for ten seconds each time you rotate the command dial to change the shutter or aperture settings.

The Setup menu while in M-Rec is now a 3 page affair. You can toggle over to the numbers on the left and then quickly jump to the desired menu page.
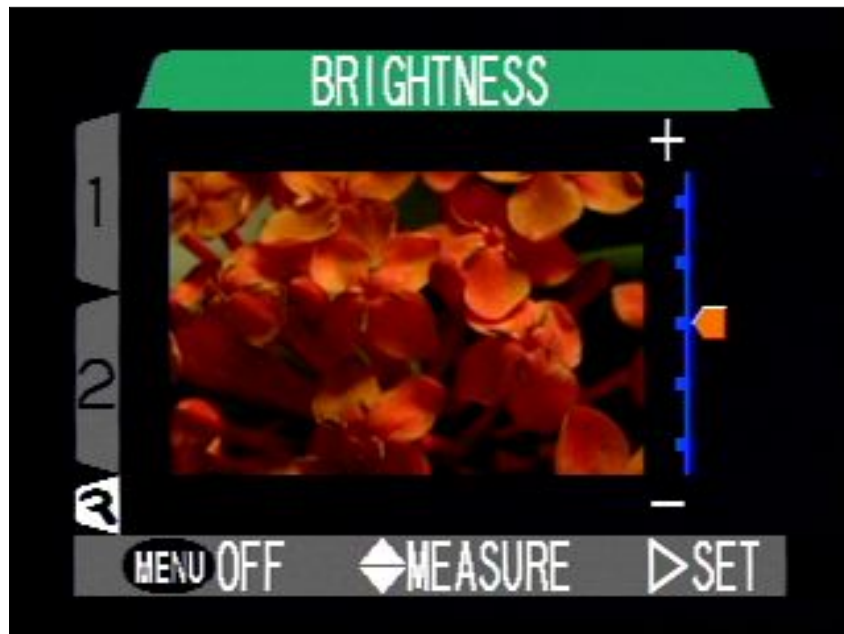
Here's the onscreen color LCD backlight brightness adjustment menu.

The "Led Shot Confirm" when enabled will blink the redeye reduction lamp on the front of the camera when the shutter fires. The video output is now user-selectable and can be easily changed back and forth between NTSC and PAL format.

The rest of the screen shots will show the various features in the Play mode. This is a standard Play mode screen showing the last picture taken with all of the overlay data enabled.
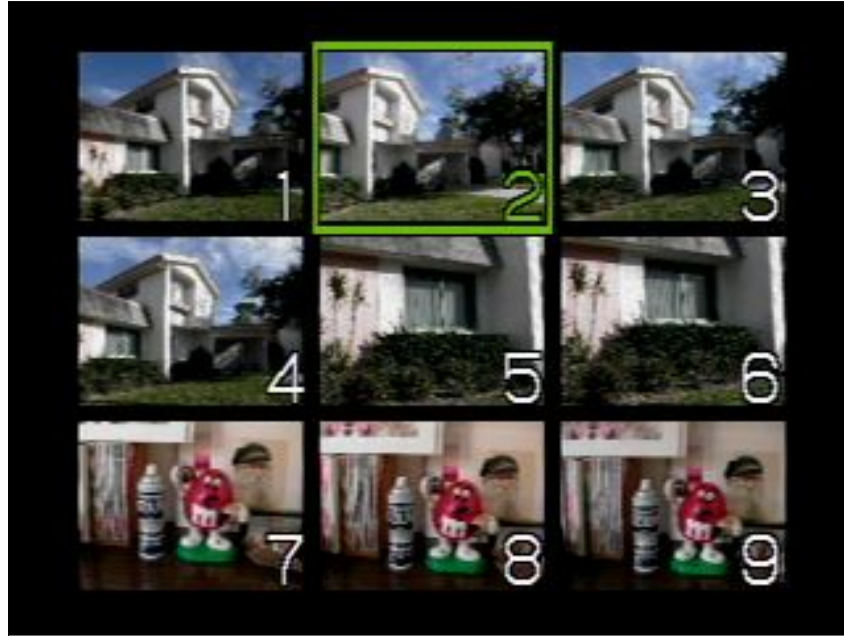
To find a desired image you can use the thumbnail play mode, it is toggleable between 4 or 9 thumbsnails per screen. Just move the cursor to any desired image and then bring it up full screen.

Here's the Play mode menu of options, the same as the Coolpix 950. You'll note the obvious beta firmware error with the word "Scrole" at the bottom instead of scroll.

Even though the Coolpix 990 has a smaller (1.8") LCD screen it is actually a higher resolution type of LCD. The zoom playback mode now lets you enlarge the picture up to 4x in very small increments. At any zoom level you can freely scroll left and right and up

and down using the 4-way jog switch.

As with the Coolpix 950, the 990 displays all the camera and exposure data of the viewed picture by rotating the command dial. There are four pages of this data available by continuing to turn the command dial.

This is the second page of camera and exposure data.
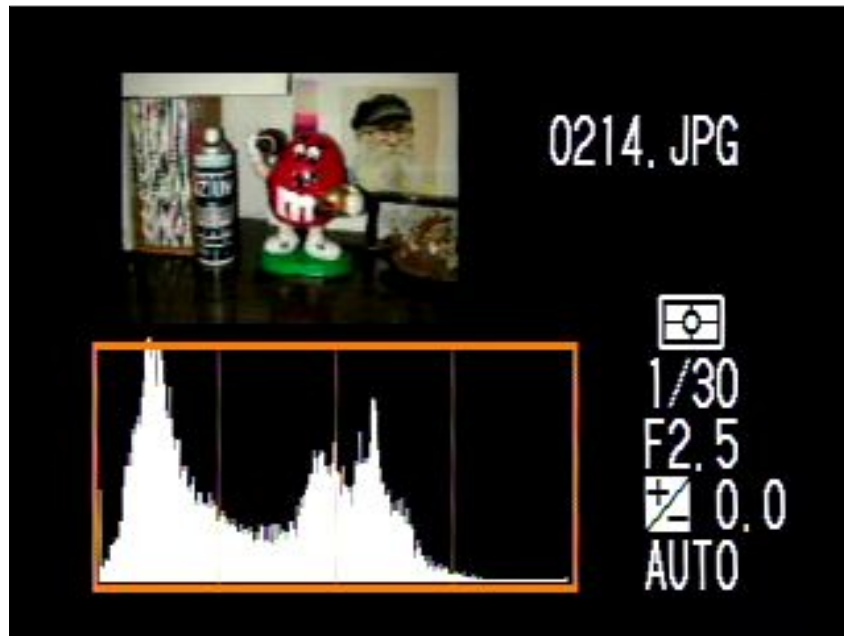
New to the Nikon 990 is this histogram display like the expensive pro cameras. The histogram graphically shows the levels of luminance in the captured image.

The last page is also new to the 990 and it shows lens and focus settings including what area the autofocus was centered on.

Steve's conclusion

Well here we are again, experiencing yet another feeding frenzy as the release date nears for the new Coolpix 990.   It's reminiscent of last year when we saw the same thing happen with the Coolpix 950's release, except this time it's even more intense.

Most people will likely compare the Coolpix 990 to the 950 so we'll start with the differences between these two cameras. The most important improvement is the new 3.34 megapixel CCD imager with a maximum finished image size of 2048 x 1536 in both JPG and uncompressed TIF format. The Coolpix 990 also has a 3:2 aspect ratio setting that yields 2048 x 1360 images that are perfect for uncropped 4 x 6" prints.

The most requested changes and new additions are:
- CompactFlash card slot has been moved from the bottom to the side
- The selftimer can be used with the macro mode!
- 32MB SDRAM buffer for exceptionally fast shot to shot times and 2fps burst mode in full resolution
- Full manual mode with control of both shutter speed and aperture plus an onscreen exposure meter

- 3D color matrix metering and multizone autofocus like the D1
- Flexible Program mode with a variety of shutter speed and aperture combinations
- Spot metering that follows the multizone autofocus
- Focus confirmation in manual mode by edge-highlighting (peaking)
- QuickTime movie capture mode
- Ultra high-speed 30fps QVGA capture mode
- Auto bracketing exposure control
- Zoom lens startup position can be where it was when powered down or defaulted to full wideangle or telephoto
- The internal flash can be disabled when using an external speedlight
- The internal flash's intensity can be adjusted
- Zoomed playback from 1.1x to 4x with free panning
- High-speed USB port for downloading
- Command dial has been moved to rear of the camera and is easily rotated using your thumb
- A new 4-way jog switch (ala the D1) lets you navigate menus, select the AF zone, select playback thumbnails and freely scroll the image while in zoomed playback
- A 7-blade iris diaphragm gives real depth of field control
- Variable image sharpening, contrast and brightness settings
- Stepless digital zoom (1.1x to 4x)
- User selectable NTSC or PAL video output
- Image histogram function during playback

One of the first things you notice when you pick up the Coolpix 990 is how much fatter the handgrip feels. It gives you a very secure, one-handed grip of the camera. The back of the camera is now fairly flat but the grip extends out farther in the front. When holding the camera, your thumb falls naturally on the zoom buttons, command dial and jog switch, it is very well designed.

The CompactFlash card slot has been moved from the bottom of the camera over to the side so the card can be removed while mounted on a tripod. The I/O ports have also been moved over to the side and are located just above the CF slot. The bottom of the camera is now perfectly flat, the metal tripod socket is more centrally located and there's even "grippy" rubber around it to make it very solid when mounted on a tripod. The battery door is on the bottom and it now has an easier to operate lever with a safety button in the center.

The monochrome data LCD on the top has been enlarged and allows the most-used functions can be changed without need of the color LCD. The Mode and +/- buttons have been moved to the top of the camera and the Focus and Flash control buttons are now below the color LCD. The Monitor, Menu and Zoom control buttons are in the same places on the back as they were on the 950. I really liked the way the 950 was layed out but the buttons and command dial are even more ergonomically placed on the 990.

The Coolpix 990 has benefited greatly by what Nikon learned while designing the D1. You may not know what the big deal is about multizone focusing but you will once you use it. It's especially handy when shooting in wideangle as the focus system will actually track an object moving from one zone to another or focus on the closest subject to the camera, whether in the center of the frame or not. As with the D1, the user can also manually control the focus area by using the jog switch and lock it on one area or another when desired. You can easily shoot an off-center subject by selecting the desired focus zone. And the spot metering system can be set to follow the focusing zone.

Great photographs start with great lenses, the Coolpix 990 has a fast f2.5, 9 element, all glass Nikkor 8-24mm (35mm equivalent of a 38-115mm) zoom lens. Behind the lens is a new 7-blade iris diaphragm for true depth of field control. The autofocus system is a contrast-detect TTL type with 4,896 steps for precise focusing from less than one inch to infinity. Autofocus can be continuous when the LCD is on or single autofocus is activated by a half press of the shutter release. Focusing can also be performed manually in which case the distance is indicated on both LCDs and can be visually confirmed on the color LCD with the peaking function.

As with the previous Coolpix 9xx cameras, the 990's lens is threaded and accepts all the Nikkor add-on lenses and filters. Currently available is the WC-E24 wideangle, TC-E2 2x telephoto and the FC-E8 fisheye converter and the Coolpack filter set. Coming soon is a new TC-E3 3x telephoto lens. And there are of course many other third-party 28mm-37mm adapters and stepup rings available too.

Another feature taken from the professional cameras is the Flexible Program mode. The 990 works like the 950 when in its the "P"rogrammed automatic mode, the camera will pick the best combination of shutter speed and aperture automatically. With Flexible Program you now just rotate the command dial to quickly select other combinations of shutter speeds and apertures. Whatever combination you pick, it will be be correctly exposed for the current lighting and ISO sensitivity.

New to any Nikon camera is the QuickTime movie mode. You can capture Quarter-VGA (320 x 240) resolution motion video at 30fps. I'm not a big fan of this mode but it can be used to capture the baby's first steps or your kid smacking a home run out of the ball field. And probably a million other things that I think are more suited to a video camcorder, especially considering that the camera has no microphone so your videos will be silent movies. But it's there if you want it, just put the 990 into movie mode, press the shutter button and record up to 40 seconds of action. It eats up a lot of memory though, a 10-second clip is around 4MB in size.

Much more useful (IMHO) is the Best Shot Selector or BSS mode. This is a very controversial feature that a lot of folks say doesn't really work but it has for me. The camera takes a sequence of four or five shots and then analyzes them using some kind of high-tech "fuzzy logic" and saves the best one. It is handy for slow shutter speed shots in dim lighting or for handheld macro shots that probably should have been taken using a tripod. Another handy feature is auto-bracketing where the 990 will take a series

of pictures and alter each one up to two f/stops in both the plus and minus directions. You get five shots of the same scene, all of them slightly different in exposure values so there is sure to be a "perfect" one in there somewhere.

The 990 has white balance options for Automatic, Cloudy, Sunny, Incandescent, Fluorescent and Speedlight as well as a manual Preset mode to let you perfectly tune the white balance using a known white value. Even the fixed white balance options are variable by a factor of +/- 3 steps and there's three different temperature settings for flourescent lighting.

Setting the white balance is only part of the overall equation of the exposure process. You can use the Nikon-exclusive 3D color matrix metering that uses a 256- segment area to determine the best possible exposure for the entire frame. Or the center-weighted averaging, spot or spot-AF metering modes to nail that perfectly exposed picture.

One of the most important parts of any modern digital camera is the color LCD display. This gives you instant feedback on whether or not you got the shot you wanted as well as displaying camera menus and other important exposure data or camera settings. The Coolpix 950 had a nice 2" LCD display but it was nearly impossible to see in high ambient light conditions, especially outdoors in the sun. The LCD used on the 990 is slightly smaller, measuring 1.8" diagonally, but it is a higher resolution display and considerably easier to see in bright conditions. Checking the focus or composition of captured images is a snap using the zoomed playback feature you can freely scroll around the entire image.

Shooting in Continuous mode with the production model 990 I have been able to capture 3 frames at full resolution at a speed of about 1fps. Dropping the resolution down to XGA (1024x768) it captures 8 frames at nearly 2fps. In VGA (640x480) resolution the capture speed was still about 2fps and the buffer handles around 20 frames. Other rapid capture modes include the VGA Sequence mode that grabs 40 640x480 shots at 2fps or the Ultra High Speed QVGA (320x240) capture mode that grabs up to 80 shots at 30fps speed.

The menu system is extensive but rather easily navigated once you learn to use the quick tabs on the left side. With the Coolpix 950 you had to cruise through all of the menu screens to get to the last one but with the 990 you can "jump" to different subsections using the 1, 2, or 3 tabs. The 4-way jog switch makes things much easier too and some of the main menu items can be selected and then quickly changed by rotating the command dial. With this many options the camera has to have a rather complex menu system but I think it is much easier than the way it was on the 950.

Another new feature on the 990 is the ability to select the video output format between NTSC and PAL. This was always the major distinction between the U.S. and European models but now the only way to tell them apart is by the color scheme used on the body of the camera. The U.S. and North American cameras will sport a charcoal grey textured body with a purple colored finger grip. The European model will look like the Coolpix 950 with the familiar black and red scheme. I wasn't crazy about the "purple"

color when the Nikon folks first told me about it but, it does grow on you and now it doesn't really bother me at all.

Before you think that this is a "perfect" digicam, unfortunately it isn't. The Coolpix 990 suffers from the same problem as the 950, the builtin speedlite is too close to the lens and extremely prone to redeye. The redeye reduction mode does little to help, the only real solution is to use an external flash mounted away from the lens. There is a flash sync connector that connects the 990 to a number of different Nikon Speedlites including the new SB-28DX. Using these speedlites in bounce mode is of course the perfect way to be rid of redeye forever but it a rather expensive solution.

Battery life is significantly improved when operating with the color LCD turned off. I had no problem taking a day's worth (150+) of shots on a single set of NiMH rechargeable batteries. It's the usual YMMV (your mileage may vary) once you start using the color LCD as everyone uses it a little differently. With the LCD on you not only power it but the continuous autofocus mechanism as well. Overall though I would have to say that the smaller 1.8" LCD has contributed to better battery life as well as making it easier to see in the sunlight.

The addition of the USB port was a major step in the right direction and it's no surprise that Nikon did not package a serial cable. Downloading three megapixel images with the USB port is a matter of seconds versus many, many minutes through a slow serial port. Maybe we'll see an IEEE1394 FireWire port on the next Coolpix!

The included NikonView software communicated flawlessly with the camera and downloads were very robust. The camera was detected by Windows 98 the moment I turned it on and the USB driver installed from the CD with no trouble. The new NikonView v3 software does not have the ability to control the camera though. As for the optional USB remote control, we'll just have to wait to find out -- it isn't available just yet.

The Coolpix 990 turns out some of the sharpest images I have seen yet from a three megapixel digicam. The color balance and saturation is very good and the exposure control is what we have come to expect from Nikon's best cameras. Just as the Coolpix 950 was one of the top selling digital cameras of 1999 I have no doubts that the new 990 is going to do the same in 2000. It's everything the 950 was and more, a whole lot more!

## 9/18/00 Nikon 990 (or 950) Firmware update

Nikon has released the v1.1 firmware for the Coolpix 990 which allows it to work with the wired remote control as well as fix or improve a few other things. The latest Coolpix 990 firmware is available from the [Nikon Tech USA site](#) and the [Nikon Euro site](#) - please get your upgrade from the appropriate source and read the upgrade instructions thoroughly before performing the procedure.

(This procedure verified on Coolpix 700, 800, 950 and 990 cameras)

Thanks to some detective work by Don Hergert we now know that you can also upgrade your firmware via the CompactFlash card if you have a card reader. If you do not understand the following then please use your USB cable and follow the firmware upgrade instructions as posted at the Nikon web site.

The procedure is fast & simple, just follow these steps:

1. Be sure camera has fully recharged NiMH, new alkaline batteries or you have it connected to the AC power adapter before performing the update.
2. Format the CF card in the camera.
3. Go into camera Setup menu, change Auto Off value to 5M or 30M
4. Set menu language to English (this procedure only verified in English).
5. Turn off camera, remove CF card
6. Put CF card in reader, create a folder called "Firmware" off the root directory of the card. (Using Windows Explorer simply highlight the drive letter of your card reader and click on File - New - Folder. Once it's created rename it to Firmware)
7. Unzip the 990v11wu.zip (or appropriate file for your OS) and copy the firmware.bin file to the Firmware directory of your CF card.
8. Put the CF card in the camera and turn the Mode dial to Play.
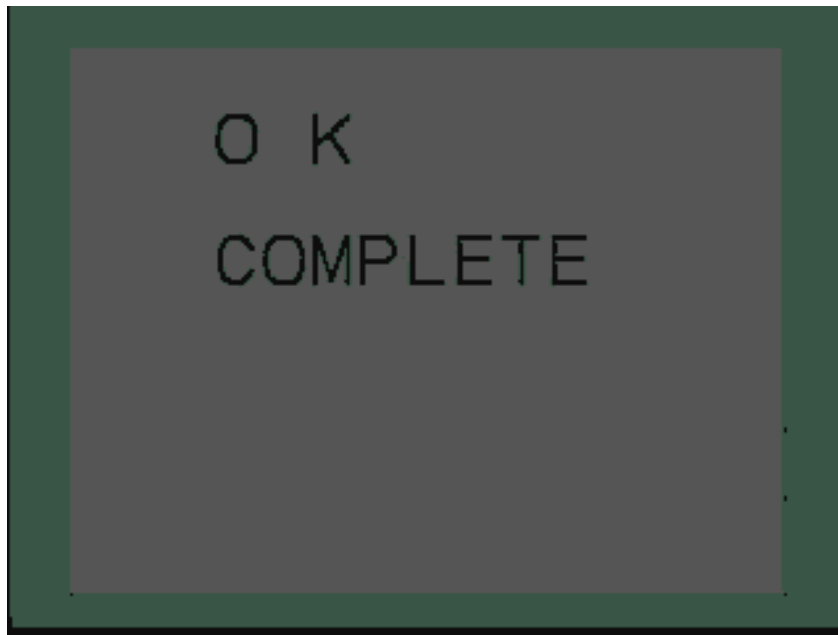
9. A screen comes up telling you the current firmware version and the upgrade firmware version and asks to proceed Yes/No. If the upgrade firmware is a higher number than the current firmware answer YES.
10. The next screen warns you not to turn the camera off until upgrade is complete. Be patient even if screen goes blank for a moment...
11. Final screen says "OK Complete" - you can now switch off camera
12. Wait a few seconds, turn it on to Play again and both the Current and Upgrade firmware revision numbers should be the same - that's it !

13. Turn Mode dial to A-Rec or M-Rec and format the CF card to erase the firmware upgrade software and use your camera normally.

Additional info for Macintosh users

Macintosh users may need to perform an additional step if they have the Nikon View software installed. With the software installed, you will not be able to copy files to the CF Card. Therefore, you must disable the following items (by removing them from their locations and then restarting the computer).

If you are using Nikon View 3.0:
1. Move the files called Nikon View Extension and E990 Shim Driver out of the folder System Folder > Extensions to your desktop.
2. Move the file called Nikon View Control out of the folder System Folder > Control Panels to your desktop.
3. Restart your Macintosh Computer. You must put these file back after the firmware update has been completed. You can easily move the file back to the original locations by selecting them in the Macintosh Finder after the update has finished and then Using the "Put Away" command, which can be found in the "File" Menu on all recent versions of the Macintosh OS.

If you are using Nikon View 3.1:
1. Move the files called Nikon View Extension and COOLPIX USB Shim out of the folder System Folder > Extensions to your desktop
2. Move the file called Nikon View Control out of the folder System Folder > Control Panels to your desktop.
3. Restart your Macintosh Computer. You must put these files back after the firmware update has been completed. You can easily move the file back to the original locations by selecting them in the Macintosh Finder after the update has finished and then Using the "Put Away" command, which can be found in the "File" Menu on all recent versions of the Macintosh OS.

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