

Fall 2009

## ***Perfesser Kev's Guide for Loan Photo Gear***

Thanks to Nikon, Inc., the CU journalism school has the following equipment available for use by registered *JOUR 3102, 4872 and 4102/5102* students. You may borrow one camera kit and a flash for 48-hour periods. Renewals will be possible if no one else has requested that gear.

This equipment will be available from the TA in the **Macky 1B04 photo lab**. You may call or e-mail the TA to check on availability. See your syllabus for her contact info.

Remember that you are **personally financially responsible** for any loss or damage to this equipment or the accessories included in the checkout. That includes manuals, guides, lens hoods and covers, cords and cables, batteries, memory cards, cases and anything else you received from the locker. DO NOT leave this equipment unattended, and do not use it in risky pursuits (like rock climbing or snow sports, for example). ANY loss or damage will also result in loss of checkout privileges. You will be billed for the loss.

**Choose the right gear for the job.** If what you need is not available, use your own camera rather than the wrong gear:

### **5 D300s camera bodies**

This is a high-resolution but light and compact camera. Will be good for almost all purposes. High resolution, low noise.

### **1 D3 camera body**

This pro camera is very fast and is the industry leader in low-light photography.

### **1 18-70mm f/3.5-4.5 zoom lens**

This has a nice, wide zoom range but they are not bright. Plan on them for daylight use. Avoid them for dark indoor places and night shoots.

### **3 18-200mm f/3.5-5.6 zoom lenses**

These have a nice, wide zoom range but they are not bright. Plan on them for daylight use. Avoid them for dark indoor places and night shoots.

### **1 17-55mm f/2.8 zoom lens**

This is a high-end zoom for multiple uses. It is bright enough for dark places.

### **1 17-35mm f/2.8 zoom lens**

This is a high-end zoom for multiple uses. It is bright enough for dark places.

**1 70-200mm f/2.8 telephoto zoom lens**

This is a high-end long zoom for use in sports or news situations where you can't get so close.

**1 200-400mm f/4 telephoto zoom lens**

This is a high-end long zoom ideal for sports and news photography where you can't get close. Caution: It's large and heavy and attracts attention.

**3 SB900 TTL flash units**

Nikon's high-end hot-shoe flash units. These are for use in Advanced Press Photo, J4102/5102 assignments. Others may experiment with them, but remember that you **may not** do assignment work for J3102 with flash.

**1 Zoom H2 digital audio recorder**

This is a professional-quality digital recorder with built-in surround-sound microphones. It is useful for recording ambient sound and interviews for multimedia production.

**2 Sony ECM-MS907 microphones**

Use these with the Nikon D300s cameras to record audio tracks with video, or with your own recorder or the Zoom H2. Kit includes foam windscreen and mic holder.

The cameras are checked out as kits. Select a kit that best fits your needs:

**Kit 1** D300 camera with 18-70mm f/3.5-4.5 zoom lens

**Kit 2** D300 camera with 17-55mm f/2.8G zoom lens

**Kit 3** D300 camera with 18-200mm f/3.5-5.6 zoom lens

**Kit 4** D300 camera with 18-200mm f/3.5-5.6 zoom lens

**Kit 5** D3 camera with 70-200mm f/2.8 telephoto zoom lens

**Kit 6** D300 camera with 18-200mm f/3.5-5.6 zoom lens

**Kit 7** Nikon 200-400mm f/4 zoom lens (no body — to be paired with another kit)

**SB-900** flash units are checked out individually.

**Zoom H2** digital audio recorder

**Sony ECM-MS907 mics** are checked out individually.

## **Camera First Steps**

The following is a checklist to make sure the camera's settings are correct. BE SURE to double check all of them. First, **turn the camera on** using the switch on the trigger.

### **Clean the Optics**

Make sure the filter on the lens front and the camera's viewfinder are clean of smudges. Use the enclosed cloth, or a CLEAN piece of cotton to wipe them clean. Don't use water or glass cleaner. You can fog the surfaces with your breath if they don't easily come clean.

### **Format the Card**

Erase all the images that may still be on the card from someone else's shoot (it's a good idea to format the card after you have uploaded the images to a computer as well, so your images will not be stolen). There are other ways to erase images, but a full format will ensure the card functions properly and uses all available space well.

In red paint you will see "FORMAT" next to the camera's mode and trash can buttons. To wipe the card clean hold both those buttons simultaneously for a few seconds. You will see "For" flash on the LCD screen on top of the camera. While it is flashing, release the buttons, then simultaneously hold them a second time. In the lower right of that LCD screen an area that normally shows how many images have been shot will change to "For" for a few seconds as the card is erased.

Be sure you want to do this. Recovering images from a formatted card is a difficult process.

### **Check Batteries**

Each of these cameras has a rechargeable battery. First, check the battery level by looking at the little battery-shaped symbol on the LCD screen on the top of the camera. These batteries will last for more than a thousand exposures, so as long as the level is more than one bar, you're probably fine. If it is at one bar or less, use the enclosed charger to charge the battery. Refer to the camera manual for correct procedures.

### **Set Image Quality**

Check the image quality settings. On the D300 cameras you will see a button on the top left of the camera that says "QUAL." Holding the button, rotate the control wheel on the back of the camera where your right thumb would rest. As you rotate the wheel, watch the boxes in the lower left side of the LCD screen on the camera top. The smaller of two boxes should show an "L" for large file dimensions. The larger of the two boxes should show "FINE" for fine compression quality. These settings will yield the best files for most uses. Refer to the camera's manual for more details.

On the D3 camera you will find the QUAL button on the back of the camera below the preview screen. Holding that button, rotate the thumb wheel and rotate until you see an "L" and a "FINE" in the small LCD window on the lower back of the camera.

See the camera manual for illustrations and more detail on the camera's options.

J4102/5102 students will be asked to use RAW as their file quality.

### **Set ISO**

Near where you found the QUAL buttons, you will see buttons for ISO. This is the chip sensitivity for the camera. Use the lowest ISO sensitivity you can for the best image quality. The faster the ISO, the noisier (grainier) the images will be. Avoid ISO ratings above 800 unless absolutely necessary. Outdoors in daytime, ISO 100 should be optimal. Unlike film camera, you can change ISO between each frame if needed.

Hold the ISO button and rotate the thumb wheel until you see your desired ISO setting in the top LCD window.

### **Set Exposure Mode**

Each of these cameras has four exposure modes — manual and three variations of automatic. You are **required to use only manual** for class assignments. Feel free to consult the camera's manual on how the other modes work and to experiment on your own time with them. But they are there for amateurs, and you are no longer amateurs. Professionals cannot risk camera error when making timely news images.

Next to the trigger for the camera you will see a button that says "MODE." Holding that button, rotate the thumb wheel until you see an M in the upper left corner of the top LCD screen.

### **Set Autofocus**

J3102 students are required to use manual focus for assignment work. To better use autofocus you **MUST** be fluent in manual. Good practice will make you as fast and much more accurate in focusing than the electronics in the camera, which are easily confused by anomalies in the scene. Once again, automation is for amateurs.

Looking at the front of the camera, you will see a switch to the lower right of the lens. It has C, S and M options. Set it on M. The lens you borrowed may also have similar settings. You may see a switch that has M/A and M as options, or A and M as options. Set the lens on M. As you turn the focus ring, feel for any resistance. If the focus is not smooth you may not have these settings correctly arranged.

Your lens is probably a zoom and will have two rings. Find the difference between the focus ring and the zoom ring. Go to the corner of University and Broadway and practice follow focus on passing cars to become comfortable with focus.

You will see a diopter correction to the upper right of the camera's viewfinder. This adjusts a small lens in the viewfinder to accommodate various eyes. To adjust it correctly for your eyes, set the focus ring on infinity. Then aim the camera at something on the horizon (like the Flatirons). Adjust that +/- wheel until the scene on the horizon looks most clear to you.

### **Set Meter Pattern**

These cameras are all capable of multi-pattern metering. This means they will calculate exposure based on readings in many areas of the frame. Though it is pretty amazing engineering, the camera will never be as good as common sense. You are required to use either center-weighted or spot metering for your exposures to give you greatest control. Multi-pattern metering is for amateurs.

On the D300 cameras you will see a combination button/switch on the back of the camera just to the right of the viewfinder. The outer ring is a switch that sets the meter pattern. The options will show a small spot wrapped with two brackets for center-weighted metering. This is a preferred method. In this mode you will see a red ring flash showing you the area of the frame the meter is watching for correct exposure. In the middle is the multi-pattern setting showing a rectangle divided into sections. On the bottom is a small spot for spot metering. The sensitivity for the spot meter is the size of the small focus area patch in the center of the viewfinder.

On the D3 and camera, the meter pattern switch is found on the very top of the camera (it's viewfinder prism) on the right side.

Spot metering is most accurate, though your aim must be specific.

To ensure the spot meter is looking at the correct area of the frame, tap the trigger half way as you look through the viewfinder. You should see the focus aid patch in

the center of the frame light up red. If it is not the center patch that lights up, do the following:

To the right of the image preview screen is a jog-shuttle switch (a joystick of sorts). A ring around it locks and unlocks the switch. Unlock that switch and use the four directions of the jog-shuttle wheel to move the red-highlighted patch to the center for most accurate spot metering. Lock the jog-shuttle when you are done.

### **Set Motor Drive Mode**

These cameras are capable of high-speed sequence shooting. From time to time that can be a valuable tool, but it is rare when it will actually help. The U.S. Army trains its soldiers to shoot one bullet at a time from their machine guns rather than spraying the field with ammo. Why? Because it triples the soldiers' shooting accuracy. You need to learn to time your exposure for the moment (even in a fast-paced sports situation) rather than depending on luck from a motor drive. Spraying the field with exposures will also make editing slower and more difficult on deadline. **Shoot one frame at a time.**

On the upper left side of the camera you will see a dial ring around a set of three buttons. To move the ring, push the small lock button to the upper left of the dial, then rotate the dial. You'll see these options: S, CL, CH, a clock symbol for the self timer and M-Up for locking the camera's mirror in the up position.

A good setting would be CH for continuous-high. That would let you shoot a very fast sequence of images if necessary, so be careful to remove your finger from the trigger after one frame. The advantage in single-frame shooting here is that the camera is ready for the next shot very quickly and is its most quiet. Like a soldier, tap the trigger **AT THE MOMENTS** as they unfold rather than spraying bullets.

If the camera shoots too quickly and you find yourself shooting multiple frames of everything, you can try CL, for continuous-low, or S for one-shot-at-a-time.

### **Set White Balance**

Near the QUAL button you will see another for "WB." Hold the button and rotate the thumb wheel to select the white balance for your situation. I recommend you set it to "A" for auto. Double check this. It may have been moved by the last user.

## **Camera Use**

These are complex and versatile pieces of equipment, as you can see from the huge user manuals included in the kit. I encourage you to experiment and become fluent in the various methods of operating the cameras.

However I have strong reasons for limiting how you can operate when on assignment for class. Once again, manual focus and exposure only. Photojournalists need to be more accurate than even these expensive electronics can be. Like James Nachtwey CU alumnus Tomas van Houtryve, you must be fully-in-control professionals.

### **Metering**

Hold the camera to your eye. In the viewfinder you will see a strip of information along the bottom of the frame. On the left is the meter pattern you have selected, followed by the set shutter speed and aperture. In the center is a scale to show you how under- or over-exposed your image will be. Then to the right is the set ISO and the number of frames remaining on the card.

As described in class, aim the sensitive area of your meter at something resembling middle gray that is also in the same light as the principle subject.

Holding the trigger half way, you will see in that center area whether the settings will result in an under- or over-exposed image. If the small scale of LED lights leans toward the minus sign, you need to either open the aperture more or select a slower shutter speed. If the LEDs lean toward the plus sign, use a smaller aperture or a faster shutter.

After your exposure is set, you should be fine until the light or your subject change. You should not need to change exposure between each frame unless one of those two details change.

### **Exposure Controls**

To set the shutter speed, rotate the thumb wheel on the upper right of the back of the camera — near where your thumb rests.

To set the aperture, rotate the wheel just below the camera's trigger, where your right index finger falls.

## ***Reviewing Images***

“Chimping” is the term for peeking at your pictures after you shoot them. This can be both an advantage and a disadvantage of digital cameras.

The advantage is that before the action hits you can look to verify that your exposure is correct and that the camera is working properly. You can also double-check to make sure an important picture has been captured, that an image is or is not too blurry. You can also see if an experiment worked or not while you're still on the scene.

The disadvantage to chimping is that it can become a bad habit of distraction. Concentrate your efforts on making images. After only brief struggle you will find your exposure and focus accuracy to be quite good and you can be confident the image was made. Keep shooting. Keep paying absolute attention on your subject and not on the camera's screen or you will miss valuable images.

### **Preview**

To view an image you made, press the button on the upper left of the camera's back that shows a square surrounding a right-pointing arrow. The camera's preview screen will light up showing you the image you made most recently.

To scroll through the images you have shot, unlock the jog-shuttle control just to the right of the screen. Using the up and down directions will scroll through the images. Left and right directions on the jog shuttle will change the level of information detail given about each frame.

There are many other functions of reviewing your frames — from zooming on details to checking exposure numbers. Consult the camera's manual to learn them.

### **Delete**

Be careful! You may want to delete frames that were total disasters to save space on the card or make more pictures if space has run out. Delete images only if space is dwindling and you have more shooting to do. You may delete frames by mistake that have some value. I also want to see your mistakes, not for grading punishment, but to help you solve the problem. I can usually tell you what went wrong and how to avoid the error again. **I NEED TO SEE YOUR MISTAKES.**

With an image displayed on the screen, push the trash can button. The camera will ask you to push the button a second time to make sure. Recovering a deleted frame is only possible if no more images are stored on the card, **SO BE CAREFUL.**

## ***Uploading Images to a Computer***

To finish your images you will need to upload them to a computer (I strongly encourage doing this in our lab).

There are two methods:

### **Card Reader**

You can remove the compact flash (CF) card from the camera.

On the D300 there is a lever on the bottom right of the camera's back, showing a little Pac Man symbol. This will open a door on the right side of the camera. Push the gray eject button then carefully extract the card. To replace the card, carefully insert it into the slot. It only goes in one way so **DO NOT FORCE IT** into the camera nor a card reader.

On the D3 camera there is a small flap covering a button on the lower right of the camera's back. Open the flap with your thumb, push the button to open the card slot door. Then eject the card with the gray button. Withdraw and replace the card carefully. **DO NOT FORCE IT** into the camera or the card reader. It will only seat when facing on direction. If it does not easily seat, it may be facing the wrong direction.

Place the card in the card readers attached to the lab computers.

### **USB Connection**

Using the included USB cable, you can connect the whole camera to a computer as an external drive.

On the left side of the camera body you will find a rubber hatch marked with a graphic shaped like a little branch. In here is the USB connection. Plug the cord in here with the other end to a USB connection on your computer.

Turn the camera's power switch around the trigger to "On." The camera's card should appear on the computer as a mounted disk (see below).

### **On the computer**

The card or camera should mount on your computer like an external disk. Copy the images to the computer's hard drive (perhaps by dragging their icons to a new folder). After you have looked at the new copies of the files residing on the hard drive, **format the card** as described at the beginning of this document to make sure your images are not misused by someone else.

***FORMAT YOUR CARD TO PREVENT MISUSE OF YOUR IMAGES***

## **Audio Recording with the Zoom H2**

The *Zoom H2* from Samson is a professional-quality audio recorder capable of capturing better-than-CD quality. It has built-in mics that cover a 90-degree or 120-degree field, and can record Dolby 5.1 Surround if you have the expensive software to encode the files.

### **First Steps**

Turn on the recorder and **format the SD card** by pressing the Menu button. Use the fast forward and reverse ( | << and >> | ) buttons to scroll to "SD Card." Press the red record button to select the option. Again scroll to "Format" and press the red record button to select. Scroll to "Yes" and select with the red button.

**Choose the appropriate mic pattern** with the < and > buttons.

*90° is generally the best option. When selected the mics will be active on the front control side of the recorder. Not the top nor the back. You'll see a red "Mic Active" light on the front. This is a coverage like a wide-angle lens. You will be able to isolate a subject from the background by getting close, or let them blend into the background by stepping away. In an interview use 90° and hold the mic about eight inches from the subject's cheek.*

*120° is an extreme stereo wide angle. When selected the mics will be active on the back side of the recorder. Not the top nor the front. You'll see a red "Mic Active" light on the back. This is a coverage like an extreme wide-angle lens. It's best for capturing the sound of a large scene or group of people. It's a bad choice for an interview because background noise will be strong and your subject may swing widely from one stereo channel to the other.*

*2-Channel Surround can be a good choice for a multiple-person interview. It uses mics on front and back of the recorder at the same time. Keep subjects an even distance from the mics, and close to subdue background noise. Or recorde a 360-degree scene. 4-Channel Surround requires special software to encode. We don't have that software.*

**Check the sample rate and bit depth.** Press the menu button and scroll as above to the "Rec Mode" option. Select it by pressing the red record button. Here you'll see many format options. Though this recorder can write audio in MP3 format, do not use it. MP3 is a compressed format that is of only passable quality. You can later convert your files to MP3 is necessary. Select one of the WAV formats.

*44.1kHz is the sampling rate of a CD and will work well. 16 bits is the sound depth of a CD and will work well. Higher numbers mean higher quality, but also much bigger files. Selecting "WAV44.1kHz/16bit" is good for general purposes. But if you like, use a higher setting, like "WAV96kHz/24bit" for the best quality.*

**Attach the foam wind screen.** This big black foam hat protects you from noise created by breezes and breaths. **Always use it.** Don't lose it. They are \$10 each and hard to get.

**Turn OFF your cell phone.** Power it off, don't just silence the ringer. The tower signal will interfere with the recorder and ruin your recording.

**Put on the headphones.** You need to hear what the recorder hears. Don't assume you're OK. Adjust the volume using the side volume control.

**Set the gain level.** Using the gain control on the right side of the recorder, set the switch to H for voice interviews, M for ambient scene sounds or L for live music.

## **Recording**

To check your recording levels, press the red record button once. A "Play/Record" light will flash showing the mics are live but recording is paused. Hold the mic near your subject and watch the VU meters on the screen bounce. You want them to **peak** at about -6dB.

If the levels exceed 0dB at the far right end, the "Mic Active" light will flash. That shows distorted and unusable sound. Hold the mic farther away or lower the gain using that side switch.

When your levels look good, **press the red record button a second time.** Don't forget to do that. You may be hearing sound through the earphones, but without pressing that button again, nothing is being recorded.

While recording **hold the recorder gingerly** or stand it on a surface. If you slightly rub your fingers down the body of the recorder you'll make a big awful noise in the mics. Don't move your fingers or bump the recorder into anything. Hold it in a steady position in relation to the subject for a good length of time.

**When finished,** press the red record button again to stop.

## **Downloading your sound files**

When your work is complete, attach the included USB cable to your or a lab computer and to the recorder. Press the Menu button and scroll as above to the "USB" option. Select it by pressing the red record button. Select the "Storage" option. The recorder should then mount on the computer like an external disk. It will be called "H2SD."

On the disk you'll see a series of folders. Most likely your sounds were saved to "FOLDER01." Copy them to your hard disk. Check the other nine folders to make sure you missed no WAV files. When you have them all, format the disk as above so you are the only person with your audio recordings.