

PRACTICAL POLICE PHOTOGRAPHY

ISO Controls Picture Quality

*The Exposure
Triangle*

*Accurate Focus and Exposure
Equals Evidence Photos Adequate
For Courtroom Presentation*

*Aperture Controls
Depth of Field*

*Shutter Speed Controls
Camera Shake & Subject Motion*

Bob McMicken

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Chapter 1.1

Introduction

Practical police photography occupies a useful niche between the kind of photos that anyone might take with an iPhone and the more sophisticated photographs taken by scientists in a well-equipped forensic laboratory. Practitioners include:

- Forensic science and criminal justice students.
- Crime scene investigators required to take photographs as part of the overall crime scene processing protocol.
- Police officers who want to take their own high quality photos for one reason or another.
- Accident investigators, arson investigators, medical investigators, forensic pathologists, forensic nurses, forensic scientists, forensic engineers, evidence technicians and game wardens.
- In short, anyone who needs photographs to document an investigation and support courtroom testimony.

There might not be much difference between photos of a simple daylight scene taken by a first responder with a smartphone and the same scene photographed by a professional with a \$10,000 camera.

Factor in the difficult lighting conditions common to outdoor crime scenes at night with the need for closeup photographs of fingerprints and trace evidence, throw in a requirement for the kind of large display prints that might be required for courtroom presentation, and the smartphone might be found wanting while the \$10,000 camera is probably overkill.

Target Audience

Practical Police Photography was written for DSLR users wishing to acquire advanced skills. Smartphones and point and shoot cameras are so simple and so limited that reading the user guide should be sufficient. When a smartphone or a point and shoot clearly won't do, you need a DSLR with, as a minimum:

- A zoom lens covering moderate wide angle to short telephoto
- A macro lens for fingerprints, tool marks, trace evidence, et cetera
- The camera manufacturer's high end professional flash unit
- A substantial tripod, preferably with an articulated center column
- A modicum of technical aptitude

A zoom lens with a "macro" setting is not a macro lens. A macro lens has a fixed focal length and is specifically designed for closeup work at the professional level. Canon and Nikon have been making macro lenses with the optical quality required for forensic work for fifty years. No other manufacturer can make that claim.

A Dirty Little Secret

It's impossible to develop useful skills if you don't have access to a camera similar to the cameras used by advanced crime scene investigators, a computer running photo-editing software and the inclination to practice advanced techniques on your own time. *You won't learn much taking pictures in good light with an auto-everything smartphone or a point and shoot camera.*

Auto-focus and auto-exposure usually work okay for well-lighted scenes of average reflectance when the most important element is centered in the viewfinder. This does not describe the conditions commonly encountered at felony crime scenes and major traffic accidents. The fun starts when the sun goes down. *Police work is shift work.*

Admissibility

As a general rule, photographs are admissible if a credible witness can testify that they accurately depict the scene as it appeared when the photographs were taken but the devil is in the details. You need to understand the rules governing admissibility in your jurisdiction.

Gruesome Photos

Click [HERE](#) to see an article regarding "gruesome" evidence, photographic and otherwise. Now that you know, don't worry about it. A police photographer's job is to document the scene and the evidence within the scene as it appeared to observers who were present at the time.

The prosecutor is responsible for deciding how to present photographic evidence to the jury. It's easy to convert color photos to black and white if Technicolor blood and gore is deemed prejudicial. As the article points out, visual aids such as drawings may have the same probative value as color photographs without the emotional impact on jurors.

Probative? Evidence tending to prove or disprove a supposed fact that is relevant to the matter at issue before the court.

Why Photography?

- Photographs can capture details that were overlooked when the scene was originally processed.
- Photographs allow detectives, prosecutors, jurors and forensic experts to see the scene as it appeared to first responders.
- Some types of evidence are best presented photographically.

- Photographs are widely used as training aids and to document events such as award ceremonies.
- Photographs are valuable in child abuse and domestic violence cases. By the time the case goes to trial, the victim's injuries will have healed and victims have been known to recant their original statements for reasons that defy explanation.

Hayden Baldwin summed it up even more succinctly. *We take photographs to show others what we have seen.*

Don't Laugh

This photo, purporting to be the long-abandoned Park County sheriff's office in Hartsel, Colorado, is somebody's idea of a joke. The real Park County sheriff's office occupies a modern facility in the nearby town of Fairplay.



If your idea of law enforcement is based on what you see in New York, Chicago or Los Angeles, remember that you can drive one hundred miles between gas stations in some parts of the country without seeing so much as a starving buzzard.

Important Documents

Read and save the manuals that came with your camera, your flash and your computer. If the camera came to you without a manual, you can download a copy from the manufacturer's web site. An Internet search should turn up scanned copies of manuals long out of print. I have PDF manuals all of my gear on my computer with desktop shortcuts.

Recommended Reading

The International Association for Identification (IAI) has stringent standards for certifying police photographers, crime scene investigators, fingerprint examiners and other forensic professionals. Their web site lists the books on which their certification tests are based.

IAI Police Photography Certification

- *Photography* – 9th Edition by London, Stone and Upton
- *Police Photography* – 5th Edition by Miller

IAI Crime Scene Investigator Certification

- *Crime Scene Photography* – Robinson and Witzke
- *Practical Crime Scene Processing and Investigation* - Gardner
- *Criminalistics: An Introduction To Forensic Science* - Saferstein
- *Crime Scene Investigation* - Fish, Miller and Braswell

To this list I would add:

- [Crime Scene Investigation](#) - NFSTC (**Download the Free PDF**)
- *Advanced Crime Scene Photography 2nd Edition* - Duncan
- *Crime Scene and Evidence Photography 2nd Edition* - Staggs
- *Henry Lee's Crime Scene Handbook* - Lee
- *An Introduction to Crime Scene Investigation* - Dutelle
- *Kirk's Fire Investigations 7th Edition* - DeHaan
- *NFPA 921, Guide for Fire and Explosion Investigations*
- *Traffic Collision Reconstruction 2nd Edition* - Fricke
- *Practical Shooting Scene Investigation* - Garrison
- *Vehicular Accident Investigation and Reconstruction* - Van Kirk

The Internet

The Internet is a valuable resource, starting with the web sites devoted to professional associations such as:

- [International Association For Identification](#)
- [International Crime Scene Investigators Association](#)
- [Law Enforcement Video Association](#)
- [International Homicide Investigator's Association](#)
- [Association for Crime Scene Reconstruction](#)
- [International Assoc. of Reconstruction Specialists](#)
- [Accreditation Commission for Traffic Accident Reconstruction](#)

For product reviews of general interest check out:

- <http://www.dpreview.com>
- <http://www.imaging-resource.com>

Requisite Skills

Police officers and forensic science students need to understand the legal issues associated with photographic evidence and understand what needs to be photographed at any scene they're likely to encounter.

If you anticipate photographing outdoor crime and accident scenes at night in bad weather that will survive challenge in court, you need to master the advanced skills associated with digital single lens reflex cameras, heavy duty tripods, external flash units, forensic lighting and so forth, ad infinitum. The basics haven't changed since the Speer Graphic was introduced in 1912.

Purchasing On Line

If you can't find what you want locally, order on line. Make sure that you are purchasing items covered by the manufacturer's US warranty. Some dealers sell [gray market](#) merchandise without a US warranty.

- <http://www.adorama.com> - new and used
- <http://www.bandh.com> - new and used
- <http://www.keh.com> - used
- <http://www.lensrentals.com> - rental and used
- <http://www.amazon.com> - discontinued models closeout prices

I routinely buy used, factory reconditioned and closeout models as long as they are adequate for the intended purpose and backed by a reputable dealer and a strong warranty.

Reality Check #1

I'd rather be a good investigator than a good photographer. Detective Manuel Fuentes of the Austin Police Department reports that intruders forced their way into a home where they bound and gagged the residents. The victims reported that a shot was fired but the initial reports made no mention of injuries or a recovered bullet.

Detective Fuentes visited the scene and found bullet fragments lodged beneath a near-invisible hole in the carpet. One of the intruders shot himself in the foot. DNA adhering to the bullet fragments lead to the apprehension of two perpetrators. When a shot is fired, the bullet has to go somewhere.

Reality Check #2

Some years ago, Hayden Baldwin discovered that the evidence submitted to the Illinois state police crime lab by local police agencies

was failing to meet the standards required for forensic examination. The problem? There was never any dialogue between criminalists at the state level and investigators at the local level.

More recently, Hayden reports that thirty-one of his CSI students in a Central American country are obliged to share eighteen cameras. In one instance, a CSI shot a homicide at ISO 3200 because a prior user had cranked up the ISO. This, along with lost or damaged equipment, is a chronic problem with shared cameras.

Eliot Springer, Deputy Director of the NYPD Crime Lab, speaking at an IAI seminar in 2014, reports that, "I've been doing it this way for years and nobody ever said anything," is a common excuse for slipshod work.

Forensic lighting specialist Robert Cheeseman relates that a student refused to move his camera off the P mode because his supervisor insisted that P stood for Police. If either the student or the supervisor had read the manual, they would have known that the P stands for Program.

Forensic pathologist Dr. Patrick Besant-Matthews reports that a student complained that supervisors would not let officers see their camera manual for fear that the manual would be lost. You would think that anyone competent to supervise police photographers would know that free manuals can be downloaded from the Internet. Alas, if only it were so.

A Texas prosecutor tells me that most of the photos submitted by police agencies in her jurisdiction are worthless because officers are given a P&S camera without giving them even rudimentary instructions.

Photography above the point and shoot level is a technical endeavor. A smidgen of technical aptitude is essential. Get your information

from a reliable instructor or a mentor who actually knows what he or she is doing. Study the camera manual. If you're new to DSLR photography, buy one of the many books written by [David Busch](#) specific to your camera.

Nikon's D7000 camera manual is 325 pages long with black and white illustrations. David Busch's *Nikon D7000 Guide to Digital SLR Photography* is 534 pages long with excellent color illustrations. I consider it thirty dollars well spent.

Training

Every college offers courses in photography and Photoshop in their fine art, commercial photography and journalism departments. These courses may be more advanced than the courses offered in a forensic science or criminal justice program.

Police departments, regional crime labs, professional associations and retired crime scene investigators offer workshops worthy of consideration.

Regardless of where you get your training, learn how to download camera and flash manuals from the manufacturer's web site and how to reset your camera back to the factory default if you inherited it from a previous user or are obliged to share it with other users.

The Fundamentals

Practical Police Photography concentrates on the advanced DSLR cameras used by professional photographers because these are the cameras that you can expect to use if you work your way up to a CSI slot in a well-funded metropolitan police department, a regional crime lab, a state agency or one of the federal agencies.

Skills acquired with a smartphone or a point and shoot will not suffice if you aspire to work above the first responder level. If you can't borrow a DSLR with the required accessories while building a useful skill set, you may be obliged to purchase a suitable camera, new or used.

Modern cameras have certain things in common. This is true of the Speed Graphic in production from 1912 to 1973, the Nikon F circa 1959 and the current Nikon D5 and the Canon 1DX Mark II. The Nikon D5 and the Canon 1DX Mark II are professional cameras with price tags in the \$6,000 range, body only.

Canon and Nikon cameras in the same price range provide roughly equal reliability and performance. I've used both Canon and Nikon cameras with complete satisfaction. I used Canon cameras exclusively from 1969 to 1977, Nikon and Canon concurrently from 1977 through 1985, and Nikon exclusively from 1985 to the present day.

Once you invest in a camera system, you're pretty well stuck with it. I'm still using cameras, lenses and flash units purchased twenty years ago. Replacing them would be a major financial burden. Shop wisely.

Benchmarks

Practical Police Photography was written to give police officers and forensic science students a fairly detailed overview, either as resource for entry level evidence photographers who favor the self-taught approach or as a prerequisite for crime scene and accident investigation



courses which assume that students already know something about evidence photography.

While photography courses generally and forensic photography courses in particular can easily be found by a casual Internet search, you can do worse than using the following as your benchmarks:

- [Eagle Crime Scene Processing DVD](#)
- [The NFSTC on line course.](#)
- [The Texas A&M on line course.](#)
- [Classroom courses offered by forensicpieces.com.](#)
- [Classroom courses offered by the University of California](#)
- [The University of Arkansas Criminal Justice Institute.](#)

Goals

After studying the text *including the embedded links* and successfully completing the practical exercises, a student should be able to:

- Explain the role of the evidence photographer during the investigation of a felony crime scene.
- Explain the 3-2-1 backup strategy.
- Describe the key elements of a non-destructive workflow.
- Take properly focused and exposed photographs that are adequate for courtroom presentation day or night, indoors or out, in weather fair or foul.
- Process and print photographs adequate for courtroom presentation, making routine adjustments for brightness, contrast, sharpness and color balance as required.
- Create slide shows, panoramas and 20 x 30 enlargements.

Chapter 1.2

Photography Links

If you find this book confusing, go to <http://www.camerasim.com> and <http://dofsimulator.net/en>. These are interactive training aids.

Shooting with a manual camera and processing your film in a wet darkroom will take you back to basics. This is a hammer. This is a nail. Do not hit your thumb. If you hit your thumb, it will hurt.

Digital simplifies things by giving you the ability to check focus and exposure as soon as you take a picture. On the other hand, digital cameras are more complicated than film cameras, with more things to remember and a longer learning curve. The camera manual page count tells the tale:

- Nikon FM circa 1978 - 35 pages
- Nikon FE circa 1978 - 46 pages
- Nikon F4 circa 1988 - 110 pages
- Nikon N90s circa 1994 - 146 pages
- Nikon D70s circa 2005 - 207 pages
- Nikon D7000 circa 2010 - 327 pages
- Nikon D7200 circa 2015 - 416 pages
- Nikon D5 circa 2016 - 396 pages

The D5 is a professional camera without the fluff features found on consumer cameras, hence the shorter manual. Camera manuals don't tell you everything that you need to know but you can find plenty of free information on the Internet. *For additional links see <http://forensic-photography.com/tutorials.html>.*

- [How Light Meters Work](#) - Wayne Fulton
 - [Flash Photo Basics](#) - Wayne Fulton
 - [Understanding Middle Gray](#) - Jim Zuckerman
 - [How Big Can I Print](#) - Thom Hogan
 - [Digital Exposure Techniques](#) - Cambridge In Color
 - [Understanding Histograms Part 1](#) - Cambridge In Color
 - [Understanding Histograms Part II](#) - Cambridge In Color
 - [Protecting Your Gear In Extreme Cold](#) - Adorama
 - [Photo-Tampering Throughout History](#) - Isitru.Com
 - [Forensic Photography Equipment List](#) - Steven Staggs
 - [Photographs versus Reality](#) - Marc Green PhD
 - [Digital Imaging Integrity](#) - Adobe.Com
 - [Infrared Photography](#) - De Broux, McCaul and Shimamoto
 - [Photographing Laser Trajectories](#) - Rus Ruslander
 - [Bite Mark Photography](#) - G.S. Golden
 - [Perspective Grid in Crime Scene Photography](#) - Flannigan/Robinson
-
- [Night Photography](#) - Hayden Baldwin
 - [Photography Using Polarized Light](#) - Hayden Baldwin
 - [Axial Lighting](#) - Hayden Baldwin
 - [Macro Photography Depth of Field](#) - Hayden Baldwin
 - [Image Distortion](#) - Hayden Baldwin
 - [3D Photography](#) - Hayden Baldwin
-
- [Exposure Basics](#) - McMicken
 - [Ensuring PC Data Integrity](#) - McMicken
 - [EXIF Metadata](#) - McMicken
 - [Documenting Photographic Evidence](#) - McMicken
 - [Presenting Photographic Evidence](#) - McMicken
 - [Closeup Photography Simplified](#) - McMicken
 - [Panoramas Simplified](#) - McMicken
 - [Photogrammetry Simplified](#) - McMicken

Chapter 1.3

CSI Links

- [Crime Scene Investigation Guide](#) - NFSTC
- [Simplified Guide To Forensic Science](#) - NFSTC
- [CSI Response](#) - Crime-Scene-Investigator.Net
- [Crime Scene Procedures](#) - Crime-Scene-Investigator.Net
- [Crime Scene Photography](#) - Crime-Scene-Investigator.Net
- [Crime Scene Investigation](#) - US DOJ
- [Fire and Arson Scene Evidence](#) - US DOJ
- [US Department of Justice Equipment List](#) - US DOJ
- [Explosion and Bombing Scenes](#) - US DOJ
- [Death Investigations](#) - US DOJ
- [Electronic Crime Scene Investigation](#) - US DOJ
- [The Fingerprint Sourcebook](#) - US DOJ
- [Latent Fingerprint Development](#) - NCJRS
- [Shooting Scene Preservation](#) - FBI
- [Crime Scene Investigation](#) - NIST
- [Evidence Collection Guide](#) - *California DOJ*
- [Physical Evidence Handbook](#) - *Wisconsin DOJ*
- [Gruesome Evidence](#) - Judges.Org
- [Search and Seizure](#) - *Interfire.Org*
- [The Exclusionary Rule](#) - *Cornell University*
- [Admissibility of Digital Evidence](#) - *Americanbar.org*
- [Demonstrative Evidence](#) - *Americanbar.org*
- [Why versus How](#) - Dean Garrison
- [Intent Behind the Bullet](#) - Dean Garrison
- [Reconstructions versus Reenactments](#) - Dean Garrison
- [Bite Mark Guidelines](#) - American Board Forensic Odontology

Chapter 1.4

Overview

You can read until your eyes bleed but you'll never become a competent photographer until you go out and start taking pictures under operational conditions with the kind of camera that you can expect to use if you work your way up to a CSI slot at a metropolitan police department, a regional crime lab or a state agency.

Almost without exception, this means an advanced DSLR with the lenses and accessories associated therewith. The equipment listed at <http://www.icsia.org> is almost identical with the equipment in my D7000 kit pictured in Chapter 3.4 or the equipment listed at <http://www.crime-scene-investigator.net/fet-ol.html>.

The ICSIA certification program is geared towards people currently employed as crime scene investigators. Steven Stagg's courses are slanted towards individuals attempting to qualify for a California Crime Scene Investigator's Certificate. These certification programs go well beyond what you might find in a basic evidence photography course.

What Is Forensic Photography?

- Forensic photography = evidence photography and vice versa.
- Forensic – pertaining to matters at issue before a court of law.
- Photography – literally painting with light.
- Forensic or Evidence Photography – photographs intended to be used as evidence in a civil or criminal trial.

Why Take Evidence Photos?

We take evidence photos to show others what we have seen:

- Detectives
- Supervisors
- Prosecutors
- Defense Attorneys
- Judges
- Juries

Photographs are persistent evidence. Once the prosecution and the defense have presented their conflicting and often confusing evidence, the jury retires to deliberate.

Photographs available to the jury during their deliberations can clarify issues by illustrating the scene as it appeared to first responders and documenting evidence such as fingerprints too small to be explained without visual aids.

Properly archived photographs are invaluable to investigators working a cold case and prosecutors defending an original verdict that has come up on appeal.

Who Takes Evidence Photos?

- Formally trained crime scene investigators are required to process major crime scenes.
- Detectives and first responders with a smartphone or a pocket camera can photograph scenes that do not require equipment and expertise above the point and shoot level.
- Laboratory personnel routinely photograph evidence too small or too perishable to be shown to a jury.

- Civilian investigators routinely take evidence photos intended for use in both civil and criminal courts.

Today, smartphones and pocket cameras have replaced the Polaroids and Instamatics used before digital relegated film to technology's Dumpster. Everyone needs a smartphone or a good pocket camera to cover situations that don't warrant dragging out the full DSLR kit.

Reality Check

Photography is only one of the many responsibilities associated with processing crime and accident scenes. An evidence photographer must comply with:

- The rules of evidence in your jurisdiction.
- Your department's policies and procedures.

A photo recorded on your in-camera memory card is of limited use until it is downloaded to a computer, processed to bring out maximum detail, delivered to end-users in the required format and archived as required by your state's record retention laws.

Record retention rules in some jurisdictions may require that photos relating to felony offenses must be retained for fifty years or more.

If your duties include taking photos that will be used in court, it is incumbent upon you to be familiar with the applicable rules to ensure that your photos are admissible. The basics include:

- Obtaining a warrant or a signed release as required.
- Maintaining the chain of evidence from the time the picture is taken until your memory cards are delivered to the designated custodian and the ultimate end-users.

- Archiving as-shot camera originals in the event that a cold case suddenly goes hot or a previously adjudicated case comes up on appeal decades after the original conviction.

Photography is just one small piece of a much larger puzzle. An evidence photographer needs to see the entire puzzle.

This requires the training and equipment required to process the entire scene from start to finish in accordance with your department's policies and procedures, usually as part of a team in which each member has an assigned role to play.

Only the most mundane and routine cases are typically processed by a solitary first responder with a smartphone or a point and shoot camera, the digital equivalent of yesterday's Polaroid.

In departments large and small, procedures should be in place to escalate response to major cases requiring on-site supervision and the services of a formally trained crime scene investigator driving a truck laden with equipment.

Crime Scenes Generally

Every department has or should have written procedures governing the various offenses. Police policies and procedures are unique to each department. They are rarely made public and are usually somewhat generic. Crime scenes do not fall into any set pattern. If a procedure is worded as a hard and fast rule, it must be followed whether or not it makes sense in a given situation.

A properly trained officer will follow the intent of departmental policies rather than treat them as an iron-clad checklist applicable to all scenes involving a specific penal code violation.

One metropolitan police department has a policy that echoes what my former department was doing back in the 1960s. It made sense then. It makes sense now. We'll use homicide as an example.

When dispatched on a man down call, a patrol officer will respond. If an ambulance attendant or a representative from the medical examiner's office pronounces the victim dead and it appears to be a natural or an accidental death, the uniformed officer will work the scene.

If the death appears to be the least bit suspicious, a sergeant will be notified and patrol officers will secure the scene, making sure that injured persons receive medical attention, apprehending suspects found in the area and rounding up potential witnesses until the sergeant arrives.

The sergeant will take charge of the scene, notify detectives and call in a crime scene unit as required. If it is an apparent homicide or a complex scene of whatever nature, the officer in charge will supervise processing the scene, including:

- Secure the scene, restricting access to authorized personnel.
- Secure warrants as required.
- Log all persons entering the scene.
- A walk-through, following a path that will protect evidence.
- Overall, mid-range and closeup photographs without markers.
- A systematic search placing markers adjacent to evidence.
- Diagram the scene.
- Photograph the scene again with scales and markers in place.
- Measure and collect fragile evidence.
- Examine, photograph and process the body.
- Collect fragile evidence found on or near the body.
- Process the remainder of the scene after the body is removed.
- Debrief officers and technicians, log and secure all evidence.
- Attend the autopsy to take photographs and collect reports.

Departments too small to have full time crime scene investigators and formally trained homicide detectives on the payroll will routinely call on state agencies or nearby departments covered by a [mutual aid agreement](#) for assistance.

This protocol or one like it might apply to major crimes and accidents involving serious injuries, fatalities, a substantial monetary loss or a suspicion of fraud. A five figure loss is probably substantial. A six figure range is substantial by any reasonable standard.

In the smaller agencies, many offenses are investigated by patrol officers and detectives with limited training and few resources. These offenses might include burglary, robbery, theft cases involving limited monetary loss and assault cases involving "treat and release" injuries.

Even if a state agency or a nearby department is called in to do the heavy lifting, local officers may be obliged to process and photograph the scene with the resources on hand pending arrival of the heavy hitters.

Training and travel budgets are among the first things to take a hit during economic hard times. However, self-study books and Internet articles are available at little or no cost for officers who want to increase their professional knowledge.

An evidence photo doesn't have to be a work of art to accomplish the intended purpose. Consider the following example courtesy Hayden Baldwin of a scene photographed thirty years ago.

An officer chased a suspect in the pickup to his residence. The suspect got out of the truck, ran to the front porch and turned around with a gun in hand. The officer shot first and put the suspect down. This photo was taken to demonstrate that there was sufficient light for the officer to see that the suspect was in fact holding a gun.



Note the shadow of a pickup in the lower left corner of the photo. In addition to the porch and yard lights, a street light provided additional illumination. This photo served the intended purpose.

Scene photos need to show enough foreground and background to reveal the subject in context. Commonly required photos include:

- Overall views
- Midrange views, also known as medium closeups
- Closeups
- Exhibit or examination quality photos

Houston crime scene investigator Christopher Duncan writing in *Advanced Crime Scene Photography* describes an examination-quality photo, sometimes known as exhibit-quality, as any photo that will be compared to real evidence to make an identification. Examination-quality photos are required for:

- Fingerprints
- Palm prints
- Tool marks
- Shoe prints
- Tire tracks
- Bite marks
- Injuries generally
- Blood stains and blood spatter
- Bullet holes showing the direction from which a shot was fired

Overall views, midrange views and routine closeups intended to establish evidence within the scene are generally shot handheld with the camera at eye level. Examination-quality photos are best taken with:

- A DSLR camera twelve megapixels or better
- A macro lens
- A substantial tripod
- A remote release
- A carefully positioned scale
- Careful lighting to control reflections and bring out detail
- The camera perpendicular to the subject

Chapter 1.5

Ethics

Dishonest photographers have been doctoring photographs for nefarious purposes since the process was invented. Civil war photographers improved the composition of their photographs by rearranging bodies and adding somber clouds. When you see a celebrity on the cover of a magazine, you can bet the photo was enhanced in some way. See:

- <http://www.fourandsix.com/photo-tampering-history/>
- <http://www.gregapodaca.com/portfolio/before-apple>
- http://www.adobe.com/digitalimag/pdfs/phscs2ip_digintegr.pdf

The December 8, 2005 episode of *CSI: Crime Scene Investigation* revolved around a photograph "photoshopped" to merge the picture of a mentally deranged woman with the picture of a neighbor's child. "Photoshopped" is now part of the common lexicon.

As a rule, you can and should adjust brightness, contrast, sharpness and color balance to bring out all of the available detail. If the question comes up, this is easily explained by the fact that photographic images usually have more detail than can be printed without routine adjustment.

The acid test is that each and every photo must be a true and accurate depiction of the scene as it appeared at the time the picture was taken. The objective is always to produce a print that accurately depicts what would have been visible to an observer standing where the photographer stood.

Some jurisdictions require taking two sets of photographs, one documenting the scene as it appeared to first responders and another after scales and markers are added, which might be construed as an alteration even if the scales and markers serve a legitimate purpose.

The best articles on ethics that I can recall reading are "Bad Science" by D.H. Garrison of the Grand Rapids Police Department and "Latent Fingerprint Fabrication" by Pat Wertheim of Forensic Investigation Training Seminars.

- <http://www.iowaiai.org/bad-science>
- http://www.iowaiai.org/latent_fingerprint_fabrication

The O.J. Simpson case emphasizes the importance of adherence to established procedure because everyone involved with the case with the possible exception of the jailhouse janitor wrote a book. According to *Evidence Dismissed* by Detectives Lange and Vennatter, the list of expert witnesses hired by Simpson's attorneys included:

- Dr. Henry Lee of the Connecticut Forensic Science Laboratory
- Dr. Michael Baden, Chief Medical Examiner for New York
- Dr. Frederic Reiders, forensic toxicologist
- Larry Ragle, retired head of the Orange County crime lab
- Herbert L. MacDonnell, inventor of the Magna fingerprint brush and one of the first criminalists to investigate the scientific aspects of blood pattern analysis.

While indigent defendants are at the mercy of their court-appointed attorney, a well-heeled defendant smart enough to hire competent counsel will rip you to shreds if you try to play games in the interest of expediency. In some cases, the defense will hire expert consultants simply to keep the prosecution from hiring the same consultants.

Chapter 1.6

Legal Considerations

Demonstrative versus Substantive Evidence

Demonstrative evidence like photographs, models, charts and visual aids are presented to help a witness explain what he or she saw at the scene when the scene was in original, as found, condition.

Substantive evidence is physical evidence collected at the scene and brought into the courtroom where it can be shown to the jury. A photo can become substantive evidence when the physical evidence cannot be brought into the courtroom for one reason or another.

Demonstrative or substantive, the prosecutor must lay a foundation before photos can be admitted into evidence. Before the photos can be shown to the jury, the defense has an opportunity to challenge their **authenticity**, relevance and probative value. The judge must decide whether the photo is relevant and not unduly prejudicial.

Fair and Accurate

A photo can be challenged on the grounds that it is not a fair and accurate representation of the thing that it is supposed to represent. See <http://www.crime-scene-investigator.net/swgit-section17.pdf> for a list of the issues that can enter into arguments concerning "fair and accurate."

Adversarial System

A smart attorney never asks a question unless he or she already knows the answer. The prosecutor is an advocate for the victim, asking

questions in a manner calculated to convince the jury that the defendant did the dirty deed and was caught fair and square.

The defense attorney is an advocate for the accused. It's his or her job to ask questions calculated to create an element of doubt, often by suggesting that the arrest was based on incompetence, stupidity, malfeasance and chicanery. The defense is entitled to a list of prosecution witnesses and copies of their reports and photos.

Police officers and crime scene investigators are supposed to be impartial witnesses without any interest in the proceedings beyond relating what they have seen and what has been related to them by credible individuals with first-hand knowledge.

Horrible miscarriages of justice have occurred when police and prosecutors ignore exculpatory evidence or rely on questionable identifications for reasons that defy rational explanation.

Prejudicial and Inflammatory (See [Gruesome Evidence](#))

A judge will exclude photos likely to upset jurors. Dr. Patrick Besant-Matthews has hundreds of slides retrieved from morgue garbage cans so disgusting that they could not possibly be used in court.

My favorite was the head of a murder victim minus the top of his skull, exposing the brain. The top of the skull was placed haphazardly near the head. The autopsy table was drenched in blood and littered with blood-soaked towels, a blood-smearred Stryker saw and assorted surgical implements. Bram Stoker would have loved it.

Irrelevant and Immaterial

Doctor B's catalog of photographic ineptitude included photos of a gurney near the body of the victim who, being deceased, was not going

anywhere and was no longer in need of medical attention. The gurney was not part of the original scene and contributed nothing to the jury's understanding of the circumstances surrounding the victim's death.

Best Evidence

A prosecutor will try to present the best available evidence. In some cases, this will be eye witness testimony. In other cases, this might be testimony supported by photos and visual aids. Photos that cannot be admitted because the photographer failed to do his job properly are worthless, regardless of their technical merit.

Fair and Accurate

A photograph should be a fair and accurate representation of the scene as it appeared to the person taking the photograph and others who were present at the time. Well, make that somewhat fair and reasonably accurate. A photo is a two-dimensional representation of a three-dimensional scene.

Separation in Time from Event

If no photos were taken at the time of an event, lawyers may dispatch photographers to get what they can. Their photos might be a fair and accurate representation at the time the photos were taken, but the original scene may have looked altogether different.

The light might be different. Objects present at the time of the event may be long gone. New objects may have taken their place. Old buildings may have been repaired or demolished. New buildings may have been erected. Trees in full bloom during the summer months may shed their leaves during the winter months.

Investigators who specialize in reconstructing crime and accident scenes take pains to interview witnesses, study the available reports, collect old photographs, verify weather conditions, determine the height of the sun and the phase of the moon, etc.

Nothing to Show

Some photos are taken to show that there is nothing to show. This might include photos taken when a prisoner is booked into jail to show that the subject arrived in good condition and photos taken at an accident scene to show that there were no skid marks.

Cause, Mechanism and Manner of Death

The coroner or medical examiner is responsible for determining the cause, mechanism and manner of death. These are concepts that might not be understood by physicians who do not have the post-doctoral training required to qualify as a forensic pathologist.

The cause of death is the event or agency that ultimately caused the deceased to depart from this vale of tears. Heart failure is not a cause of death. Eventually, we will all die from heart failure brought about from some other condition that is the proximate cause.

The manner of death can be classified as natural, accidental, homicide, suicide or undetermined. A gunshot death might be classified as undermined until subsequent investigation shows that it was inflicted accidentally or during the course of a homicide or suicide.

Post Mortem Interval

It's good to know how the deceased came to be deceased. It's just as important to know when the victim met his end. Obviously, establishing an approximate time of death will aid in identifying persons who

had an opportunity while excluding those who did not. Less obviously, who predeceased whom can determine who inherits a substantial sum of money and who ends up selling pencils on a street corner.

Chain of Custody

The chain of custody is a system that accounts for each piece of evidence to include photographs from the time they are taken until they are presented in court.

This chain is typically maintained by a series of signatures as the evidence passes from hand to hand until it reaches a designated custodian. This should be spelled out in standard operating procedures known to every member of the department and the prosecutor's office.

Standard Operating Procedure (SOP)

Every department needs protocols that cover every aspect of the photographic process from the time a photo is taken until it is delivered to a custodian for processing and, ultimately, to investigators, prosecutors and attorneys. The fact that you followed your department's SOP is your first line of defense if your photos are challenged in court.

A Colorado Springs judge recently declared a mistrial because the prosecution failed to furnish the defense with certain reports. This ensures that the prosecution and the defense are playing on a level field.

Accidental Association

Accidental association describes something that may have found its way into a crime scene before it became a crime scene. Unfortunately, there is no way to determine relevance during the first stages of an investigation. Shoot everything.

Warrants, Photography and the Exclusionary Rule

The Fourth Amendment states that "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized."

Probable cause can be defined as a legally sufficient reason but, as usual, the devil is in the details.

The **exclusionary rule** keeps everyone honest. In simple terms, evidence collected illegally cannot be used in court and this applies to photographs as well as fingerprints, firearms and the like. If in doubt, get a warrant or a valid consent to search before processing your scene. Click [HERE](#) for case-specific examples from interfire.org.

The Expert Witness

Do not allow yourself to be qualified as an expert unless you possess genuine expertise and have the fortitude required to stand up under rigorous cross-examination.

While an individual qualified as an expert witness can offer opinion testimony, the defense can hire their own experts. If the defendant's pockets are deep enough, the defense can always find someone with impressive credentials to offer a contrary opinion, notwithstanding facts that should be obvious to anyone with an IQ above room temperature.

Persistent Evidence

An article at <http://expertpages.com> suggests that photographs are persistent evidence available to jurors from the moment the photos are

admitted into evidence until they reach their verdict. Oral testimony is likely to go in one ear and out the other if the witness is somewhat less than eloquent. Critical testimony can be drowned in an ocean of drivel if a trial drags on for weeks.

Record Retention

Every state has record retention laws. Many such laws require that evidence collected in connection with major crimes must be preserved for decades. You need to know the laws applicable to your jurisdiction and the record-retention methods employed by your department.

[This article](#) by Jana K. McCown in the Williamson County, Texas, District Attorney's Office will give you an idea of the issues involved with cases that have already been adjudicated.

Click [HERE](#) for a well-illustrated article by Tim Stelloh that clearly demonstrates the problems associated with working cold cases. There is no statute of limitations on homicide. An investigator's ability to solve a cold case and a prosecutor's ability to successfully bring the culprit to trial depends on your department's ability to find relevant photos and reports many years after the original offense.