Crime Scene Photography
Digital Photography

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Admissibility of Photographs in the Courts
To be admitted in court, a photograph must be a fair and accurate representation what it purports to depict.

Usually, someone who was at the scene testifies that the photograph accurately portrays what they saw with their own eyes.

When tasked with photographing a crime scene, the photographer should assume that any or all of his photographs may be used in court. Thoroughly photograph the crime scene.

A few Simple Rules
- Do a walk through of the crime scene at the beginning
- Thoroughly photograph the crime scene. It will never be the same again
- Don't disturb the crime scene
- Photograph both with and without scales and labels
- Before making photograph, remove from view all clutter you brought to the scene, camera bags, coffee cups, etc…

Organize the Photography by Views
- Overview
- Mid-range view
- Close-up view

Overview of the Crime Scene
- Photograph with the camera at eye level.
- Orient the viewer with location photographs of the scene
- Curb view of scene

Notes...

- Front of house with street signs and house numbers
- Photograph the sides and four corners of buildings. large enough to view details
- Include vehicles, yard, shrubs, plants, onlookers

Mid-range View of Exterior of Scene

- Move in close enough to record larger detail
- Any exterior evidence
- Condition of all windows and doors
- Any signs of forced entry
- Shoe prints, tire tracks, broken glass
- Bloody trail

Overview of the Interior of Scene

- Photographs of rooms which contain evidence of crime
- Other rooms
- Photograph main area from entrance and from each corner

Mid-range View of Interior of Scene

- Move in close enough to record larger detail
- Doors and windows
- Full view of room
- Overview of blood pools or spatters
- Entrance and exit to the scene
- Trace evidence
- Footprints
- Fingerprints
- Signs or absence of a struggle
- Don't forget to photograph the ceiling

Mid-range View of Bodies

- Photograph bodies from
- Head
- Feet
- Right and left side
- From above
- Roll over to record other side
- Relationship of body to any weapons, blood, evidence

Notes...

Detailed View of Wounds to Body

- Carefully photograph all wounds to the body
- With and w/o scale
- Overview of wound to orientate on the body
- Close-up view to record detail of the wound, gunpowder, stippling
- Old injuries, scars, tattoos
- Photograph hands
- Fingernails
- Defense wounds

Exposure and Close-up Photographs

- Photograph with and w/o ruler
- Do not overexpose close-up photographs with camera flash
- Check for detail in highlights
- A white shirt should have some detail
- Dark areas should also have some detail
- Use a tripod and remote
- Capture enough detail in evidence photographs to allow an expert to make judgments
- Camera must be parallel with evidence to avoid distortion
- Use a tripod!
- Photograph with and w/o a scale
- Bounce flash off ceiling

Clothing

- Always collect and photograph clothing and shoes of victims and suspects
- Overview and evidence quality close-up photographs of any wounds, blood, or rips to clothing
- Stains, bullet and knife holes, gunpowder residue
- Emergency room personal and paramedics will often cut off clothing
- Save anyway, it can be examined
- Allow clothing to air dry before handling or photographing
- After photography, package in paper, never in plastic

Notes...

Photographs of Blood Spatter

- The expert would rather visit the scene
- Photograph with camera about 4 feet from floor or half way up wall
- Level the camera
- Use a tripod
- Consider panorama photographs
- Don't forget ceiling and floor
- Smallest blood spatter should be recorded in the photographs
- With and w/o a scale
- Bounce flash off ceiling
- Interpretation of blood spatters requires considerable training and experience
- Record observations with accurate photographs

Sketch and Measure the Scene

- As near to scale as possible
- Software is available to assist

Photo Editing & Organizing Software

- It is recommended that you download Picasa 2 from Google, free
- Or, purchase PhotoShop Elements 6
- Both have a photo organizer which will search out and bring together all the images on your computer
- Organize in folders
- Both programs will allow editing of photographs
- Elements contains more features but is much more difficult to learn
- Picasa will allow many basic editing chores, it is very easy to use, a much better program to start editing

Picasa 2

- Crop images
- Straighten
- Correct redeye
- Adjust contrast and brightness
- Adjust color
- Adjust fill light, highlights, shadows
- Sharpen
- Convert to B&W, sepia tone

Notes...

- Print from the program
- Export images via e-mail
- Make a slide show CD
- Photo collage

Download Picasa Free From Google

1. Picasa is a free download from Google
2. Assist by locating and editing all the pictures on your computer
3. Do a Google search for "Picasa 2 Download"
4. "Try Picasa Now" to begin the download
5. "Save" to download to Desktop or an Updates folder
6. Program will download
7. Click icon on Desktop or in Updates folder
8. Click "Run" to activate the installation
9. The first time it is used it will take several minutes and locate all the images
10. Thumbnail of images are organized into folders
11. Right click to sort the folders by name, date of size
12. Download on office and home computers
13. Very intuitive program, little instruction needed

Using Picasa

- Double click on an image to edit
- Basic fixes such a red eye repair
- Tuning fixes such as increase highlights
- Click on an thumbnail image to enlarge to full screen size
- Slide show of all images in the folder by clicking on arrow at top of screen

Meta Data

- Right click on an image and scroll down to Properties
- Click on Properties to open window of Meta Data
- Information carried with image
- Including the file name/number
- It is possible to determine if a photograph has been deleted

Notes...

- Never delete any case images
- Better to show a fuzzy image than try to explain why you deleted an image from your case file!
- Histogram and enlargement slider
- Editing effects
- All changes made in Picasa are only visible in Picasa unless you save a copy
- What happens in Picasa, stays in Picasa!

PhotoShop Elements 6

- PhotoShop CS 3 is the standard image editing software $600+
- Elements has all the features needed for photography PSE 6 $90
- PS 3 $30
- Consider Original Equipment Mfg software OEM
- Legal, not pirated, all you get is the disk and a product activation key, no support or manual, Dummies guide $25
- On-line courses available
- Start your editing experience with Picasa 2
- Satisfies the needs of most picture takers
- So easy, even a cave man can do it

Downloading Images Camera to Computer

- Two ways
- Connect camera to computer with USB cable
- Plug memory card directly in the computer
- Faster, does not run down camera batteries
- Obtain inexpensive card reader for older computers
- Can also plug memory card into a printer

Downloading Images to Picasa

- Plug memory card into computer or attach with USB Cable
- In Picasa 2, click Import in upper left corner of screen
- Select device from drop down list
- Picasa will download images, exclude

Notes...

any duplicates
- Click Import All after all images are downloaded
- Name folder, wipe memory card or not?

Removing Memory Card From Computer
- Check with Safely Remove Hardware icon on taskbar
- Follow these steps if icon not present
- Click Start and go to Control Panel
- Click on Taskbar and Start Menu
- From the Taskbar and Start Menu Properties check Hide Inactive Icons
- Click Customize
- In Customize Notifications window click Always Show
- This will display icon on Taskbar
- Click Icon, it will tell when safe to remove

Camera Settings
- Fully automatic mode
- Portrait mode
- Landscape mode
- Close-up mode
- Sports mode
- Night portrait with flash
- No flash mode

Exposure Compensation
- Used to adjust camera's automatic exposure setting
- Make the image lighter by increased exposure
- Darker by decreased exposure
- Turn Mode dial to any Creative Zone except Manual
- Press shutter half way and check exposure display in viewfinder in SLR camera
- Depress the Av or +/-
- Rotate the dial to make an exposure adjustment
- Can adjust one f-stop or fraction

Two Settings on Cameras Control Exposure

Notes...

- Aperture or f-stop
- Shutter Speed

What is an F-Stop?

- A setting on a camera which measures the amount of light is reaching the sensor or film
- How big is the hole the light passes through to expose the sensor or film
- Settings are engraved on the camera lens on conventional film cameras
- One larger f stop number halves the light
- One smaller number, doubles the light
- F-stops are numbered counter intuitively
- Larger numbers = less light
- Smaller numbers = more light

Shutter Speed

- The shutter blocks the light from reaching the sensor or film
- Shutter speed is the time the shutter is open to let the light in
- 250 = 1/250 second
- 60 = 1/60 second

Aperture & Shutter Speed Work Together to Send the Proper Amount of Light to Sensor

- Faster SS freezes motion
- Slower SS allows more light in low light situations
- Smaller aperture = greater Depth of Field
- Larger aperture = less DOF

Depth of Field

- The distance in front and beyond the point of best focus
- What's in focus and what isn't
- DOF controlled by lens aperture, f-stop
- Smaller the diameter of lens aperture, (larger f number) the greater the DOF
- However, this also reduces the amount of light reaching the sensor
- DOF varies from a fraction to virtually infinity
- Shallow DOF for portraits

Notes...

- Greater DOF for landscape

White Balance

- Usually set to Automatic White Balance or AWB
- Balances the image to the light
- Our eyes see objects in their true colors regardless of the light source
- A camera is not that smart
- Digital cameras can be balanced to different light sources
- Daylight, tungsten, fluorescence, or cloudy day, etc…

Using Histograms

- A color histogram is a graph of brightness levels found in an image
- The left side represents the darkest or shadow portions of the image
- The right side the light areas or highlights
- The central area represents the mid-tones
- The height indicates how much of the image is shown at any brightness

Using the Color Histogram to Assist in Evaluating an Image

- The information should be distributed across the full range of the graft in most photographs
- Not bunched at the edges
- A spike of pixels at the extreme left or right indicates the photograph is:
- Underexposed on the left
- Overexposed on the right
- However, a photograph of a black cat in a coal mine may only use the left half of the graph
- A photograph of a white rabbit in the snow may use only the right half

Software for Utilizing the Histogram

- PhotoShop CS3 $650
- PhotoShop Elements 6 $75
- Gimp Shop free at gimp.org
- Paint.net free at getpaint.net
- Picasa 2 free at picasa.google.com

Notes...

Always Work From a Copy

- Always, always, work from a copy
- Make a copy and perform any editing on the copy
- The other side may wish to inspect "original" and "unedited" images
- Many are highly suspicious of edited or "PhotoShoped" images

Levels Function and Histograms

1. In Photoshop, Gimp,
2. Click Image on menu
3. Scroll down to Adjustments
4. Click Levels in the drop down menu
5. Adjust Δ on either side while observing the image

1. In Paint.net
2. Click Adjustment on menu
3. Scroll down to Levels
4. Click on Levels and make adjustments

1. In Picasa 2
2. No levels adjustment
3. Double click on image
4. Click on Tuning tab
5. Adjust Fill Light, Highlights, Shadows and Color Temperature while observing the image
6. The Neutral Color Picker allows you to pick a neutral gray or white to remove color cast

Using Microsoft Image Resize Power Toy

- Google Microsoft power toys
- Scroll down to Image Resize
- Download to computer
- Allows you to resize images to e-mail

Resources

- Dave Johnson at PCWorld.com
- KenRockwell.com
- Wikipedia.com
- Csigizmos.com
- Smartdraw.com for crime scene
- Vendian.org to download printable rulers

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