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A 3D digital reconstruction of a crime scene in a kitchen. A female figure in a purple top and blue pants lies on a wooden floor next to a large red bloodstain. Yellow evidence markers numbered 1 through 9 are placed around the scene. A kitchen counter with a sink, stove, and fruit basket is in the background. A green spotlight illuminates the body. An inset window on the right shows a close-up of marker 1 with a hand cursor pointing at it.

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There are no Mulligans in crime scene photography

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Written by Michelle Chernicoff

THERE IS ONLY one chance to take accurate crime scene photos: the first time. It's imperative to capture evidence accurately every time the shutter clicks. To do this, evidence photographers must understand not only their own equipment but their surroundings to fully tell the tale of the crime scene.

"The most important element of crime scene photography is accuracy," explained Becky Carter, Certified Evidence Photographer (EPIC/PPA) and photography instructor at the

National Forensic Science Technology Center (NFSTC). "Photographs must show a complete, undistorted, and unbiased view of the scene environment, items of evidence (or lack thereof), and surrounding areas from multiple viewpoints, as they appeared when the photographs were taken."

From how to eliminate motion blur to painting with light, Carter shares her five tips for capturing more accurate and precise images at the scene.

1 Stabilize—Clear, crisp images can show details of the crime scene long after the crime scene tape has come down. Motion blur is caused by two things: movement of the subject and movement of the camera. The first fix is a faster shutter speed, which will "freeze" motion. However, this may also cause photos to be too dark, and manual shutter speed adjustment may not be a feature on every camera.

The second fix is to stabilize the camera. This can be accomplished with a tripod, or simply by holding the camera in a way that minimizes camera movement. Holding bulkier cameras, like DSLRs, away from the body means the weight is unsupported. Instead, try holding the camera this way:

❑ Hold your left hand flat, with the palm up, and your fingers pointing away from your body.

❑ Rest the base of the camera body on the rear of your palm, near the wrist.

❑ Pull your elbow in toward your torso and lift the viewfinder to your eye.

❑ The left elbow and shoulder will take the weight of the camera, and the thumb and fingers will be free to rotate the zoom and focus rings on the lens.

❑ Your right hand will be free to operate the controls.

Even smaller, point-and-shoot cameras can be stabilized with proper handling:

❑ Support the base of the camera with the palms of both hands, with the thumbs pointing back toward your body.

❑ Wrap your fingers up along the sides and over the top of the camera body. Keep your fingers away from the flash unit and auto-focus beam.



Holding a Camera for Stabilization

Holding the camera close to the body, supported by one hand, will help stabilize and prevent motion blur in the image.

❑ The right index finger will be positioned to activate the shutter release button, and the right thumb is available to manage other controls on the rear of the camera.

❑ Pull your elbows in toward your body and stand steady with weight distributed on both legs, shoulder-width apart.

❑ Try taking a deep breath and press the shutter release when exhaling.

2 Position—Each piece of evidence should be photographed to illustrate where it was found at the scene. This establishes the relationships of evidence to a victim, a victim to a room, and so on. These photographs should be taken from straight above or straight on at right angles, eliminating potential distortions. Each piece of evidence should be photographed with a scale (to indicate size) and without a scale.

The relationship, orientation, or reference photo is necessary for scene reconstruction. Accurately showing the size and relation of a piece of evidence to the overall scene is an imperative first step in the investigation since it cannot be revisited. Not only can accurate photography ensure nothing is missed in the documentation of a crime scene or incident site, but can also prove the evidence was not tampered with during the process.

3 Angle—Evidence, environments and even facial features can be distorted if the camera settings—particularly the zoom—are set incorrectly. When using a digital SLR (DSLR) camera with interchangeable lenses, choose a lens with a focal length of at least 85mm (35mm equivalent). When using a point-and-shoot camera, zoom the camera in as far as it will go, then stand back from the subject to frame the entire face in the photo. Positioning the camera within three to four feet from the subject's face can make the nose and chin appear abnormally large in the photo. This distortion can make it harder to



Modifying an On-Camera Flash

Top image: The flash was fired directly from on the camera, over the subject. Middle image: The on-camera flash was modified and diffused by holding a plain, white card between the flash unit and the subject. Bottom image: The image was captured using off-camera flash.

positively identify someone based on the photo alone because they will not look like themselves.

4 Light—A camera’s built-in flash has limited reach. The effective range for an on-camera flash is generally three to ten feet, depending on the model. Using a removable flash can offer more controls and a greater distance of coverage. Knowing when to use—or not use—a flash is crucial to accurately capturing the scene. If the subject is too close, the light will be too strong and “wash out” the image, creating a loss of detail. If the subject is too far away, the light power will drop off significantly.

There are ways around these instrumental limitations. For close-up photography, using a diffused external light, like a flashlight, may help illuminate the subject without blowing out the details. Always check the picture preview to ensure the scene is accurately lit and portrayed before moving on.

5 White Balance—White-balance settings control the reproduction of color, so an inaccurate setting can distort or obscure vital details. Most cameras have an auto white balance, which is a good place to start for general photography, but should never be relied upon for complete accuracy. Many scenes contain multiple light sources of various colors within a single view. A living room may have a CRT computer monitor powered on, an LED TV playing, an open window, and tungsten lamp – each producing a different spectrum of light.

Most camera systems have a “Custom” or “Evaluative” white balance setting which will provide a more accurate reproduction of on-scene color than the auto setting. The white balance should be set for every different lighting condition found on scene, as well as for the subject of the photo.

Why is the color so important? Color can influence a viewer’s opinion or interpretation of a photo. This trick is commonly used in movies: the villain is shown with a harsh blue tint



Distance-to-Lens Distortion

These images illustrate distance-to-lens distortion when recording facial features. Left Image: Camera lens is zoomed out to full wide angle and held about 1 ft. from the subject. Right Image: Camera lens is zoomed in to its limit and held about 5 ft. from the subject.



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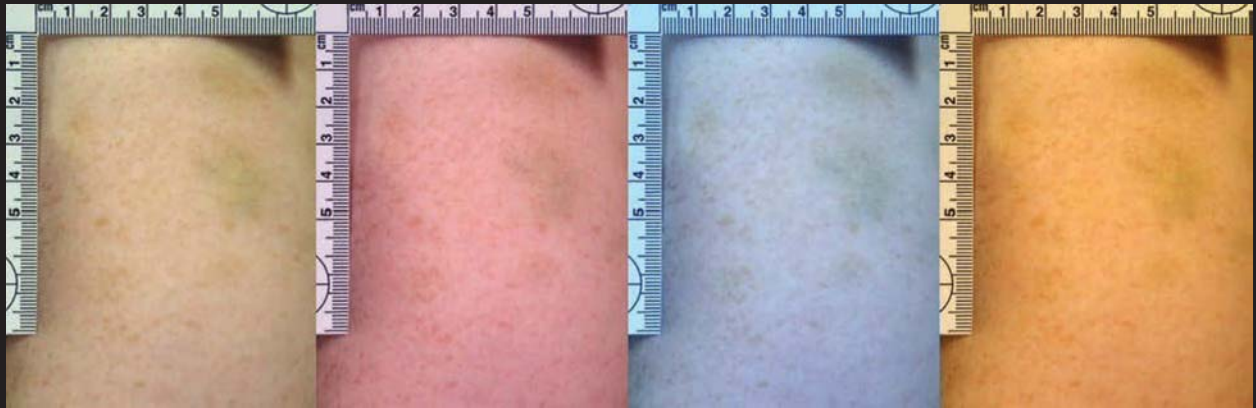
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White Balance Settings

This series of images shows the same set of bruises, all photographed under the same lighting conditions: a white fluorescent bulb. The color variant is caused by the changes in the white-balance setting on the camera. The camera settings for each photo, from left to right are: white-fluorescent (correct), standard fluorescent, incandescent/tungsten, and cloudy. Photos courtesy Danny Nichols, NFSTC

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and the hero in soft yellow, playing on the audience's emotional response to color cues. Details of bruising or other damage on a victim's skin, for example, may be lost entirely through color shifts due to improper white

balance. Above all, incorrect color reproduction in evidence or crime scene photos means that photo is not accurate and cannot be reliably used for comparison or evaluation.

For More Information

For more crime scene photography basics, visit:

www.ForensicScienceSimplified.org

Or check out NFSTC's digital crime scene photography online course at:

www.nfstc.org

In the photographer's bag

- ❑ It's a good idea to purchase a second or third camera battery and external charger to always have power ready to go.
 - ❑ A tripod is highly recommended for in-field photography. It allows the photographer to stabilize the camera, even with extended exposure times.
 - ❑ A good flashlight with even, white light, a diffuser cap, or adjustable beam is very handy. It can be used to add illumination or oblique (from the side) lighting that can highlight shallow details in pattern evidence like footwear or tire track impressions. An external, detachable flash with sync cord and bounce card will provide the same functionality.
- An inexperienced photographer can easily produce inaccurate photos simply by being unaware of how their camera works. Every evidence photographer needs to be familiar with their particular camera, even if that means reading (and keeping) the dreaded manual.
- Most importantly, every photo must be reviewed by the photographer for accuracy before moving on to the next item or scene. There are no Mulligans in evidence photography.

About the Author

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