

EVIDENCE TECHNOLOGY MAGAZINE

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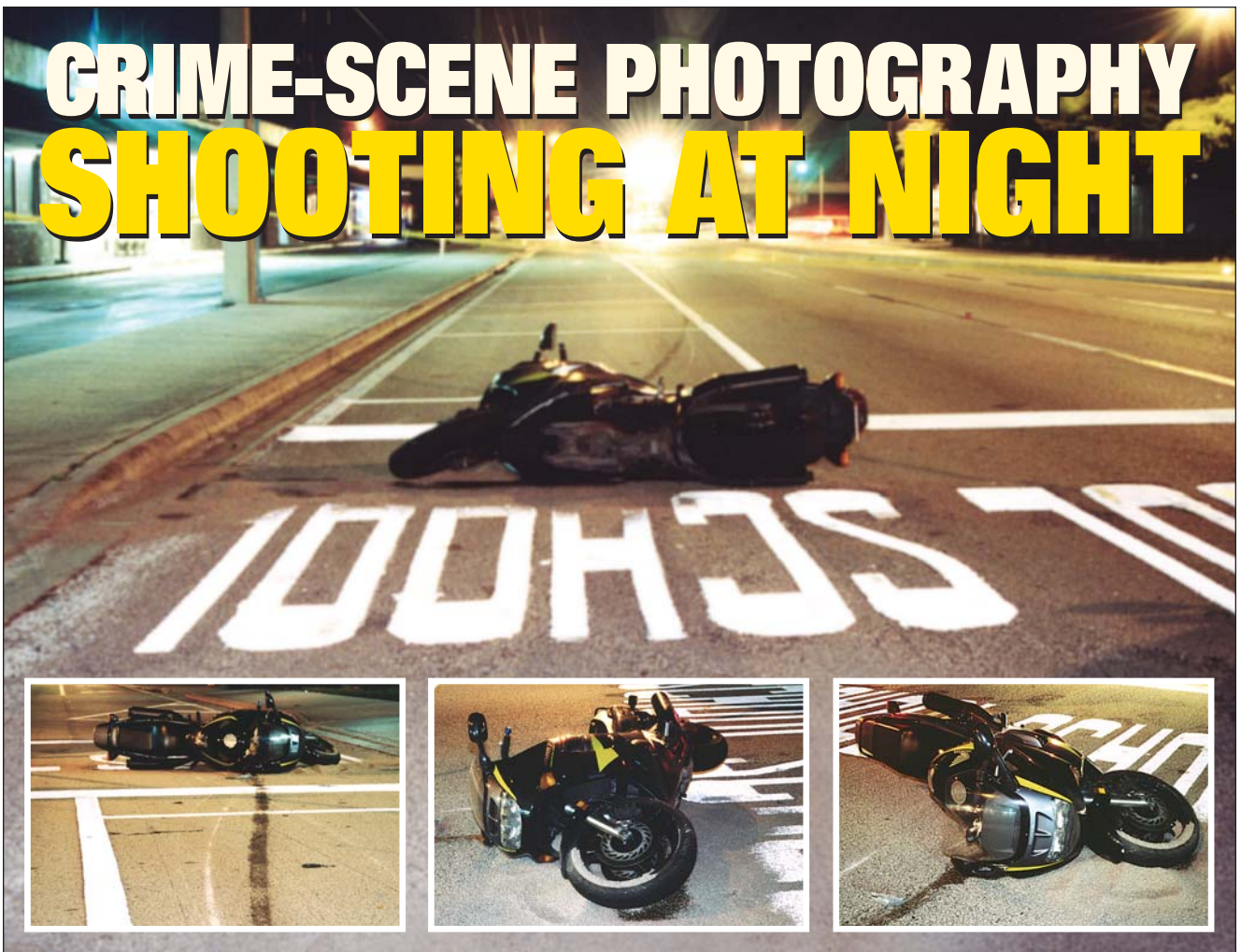


Education and Training

SOME OF THE TOPICS IN THIS ISSUE

- Learning the business of forensic science
- Basics of nighttime crime-scene photography
- Interview with Max M. Houck, chairman of FEPAC
- Online calendar of education and training events

CRIME-SCENE PHOTOGRAPHY SHOOTING AT NIGHT



Written by Michael Kelly

PHOTOGRAPHY AT NIGHT can be much more challenging than daytime photography. In the end, however, getting good results with nighttime photography can also be more rewarding. But in order to reap these rewards, the photographer needs to understand that nighttime crime scenes bring with them a number of special circumstances and conditions. These require a unique set of approaches, techniques, and equipment.

The photo examples on this and the facing page are from motor-vehicle accident scenes. A discussion of each scene is included in the next few paragraphs. Later in the article, there will be a brief explanation of the proper procedures and equipment needed for nighttime photography.

Example #1: Motorcycle down

The first four photographs (above) were taken to document a motorcycle

accident. In the medium-range shot, you can see the effect of different colors in the illumination in the background (white, yellow, orange, red, and green); these contrast with the fill-in flash, which helps to create a three-dimensional effect. The different angle in the second photograph reveals the skid marks created by the motorcycle. The last two close-up photographs show that illumination from all angles with some fill-in flash helps to create a three-dimensional effect.

Example #2: Corvette suicide

The burnt-out Corvette was the scene of a suicide. Portable lights were used to provide additional rear and side lighting and helped to illuminate the overall scene. These lights created a yellow cast over the scene. Fill-in flash was used to help balance out the yellow color as well as to provide sharper illumination of the foreground.

Example #3: Saturn vs. tree

The Saturn-collision photograph shows that strong backlighting from the patrol cars' emergency lights helped to prevent the background from appearing too dark. A strong fill-in flash is required with this kind of scene to create foreground illumination. It is also important to note that darker vehicles are more difficult to photograph at night than light-colored vehicles. Bracketing the exposure is essential when photographing dark vehicles.

Example #4: Jeep in a canal

The Jeep was found in a dark canal with no nearby streetlights. The spotlights on patrol cars were used to illuminate the background. The white streak at the top is the result of headlights passing through the scene while it was being photographed on the bulb setting. Fill-in flash was essential to illuminate the

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foreground and to prevent the yellow light of the spotlights from dominating the photograph.

Example #5: SUV rollover

Photographs of this SUV rollover show the contrast of different colors created by different light sources in the background. The streetlights are yellow and orange and the lights from the hospital (located behind the SUV) are green. The fill-in flash helps to illuminate the foreground and prevents the yellow-green light from dominating the scene. Careful exposure-meter readings must be taken to correctly calculate the needed aperture and exposure time.

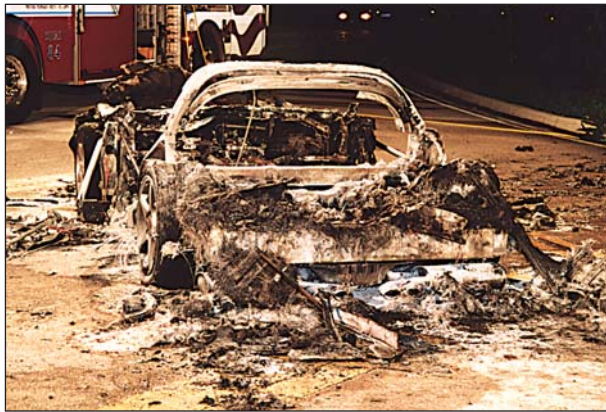
A brief discussion of the essential equipment

Nighttime photography requires basic camera equipment that has been around for decades. Each piece of equipment is described below. In this article, I refer mainly to 35mm film cameras because film has greater exposure latitude than digital and I prefer to bracket (taking more than one photo of the same scene with different exposure times). In my opinion, the necessary equipment will include the following:

❑ **Camera:** I recommend a 35mm camera with or without autofocus. If the camera is equipped with autofocus, switch it off and focus manually. A bulb setting is also useful; most of the professional and “semi-pro” cameras have this shutter setting.

❑ **Tripod:** The tripod must be sturdy and feature a ball-and-socket head. A quick-release feature is handy, especially when you have to attach the camera to the ball head in the dark. I always keep a flashlight attached to my belt rig to help illuminate camera settings. The flashlight also assists me in focusing onto objects. I personally have used Manfrotto tripods for 27 years. This Italian company makes great legs and all the spare parts are readily available.

❑ **Light meter:** A handheld light meter is essential for taking exposure readings from different areas. I never rely on the camera’s meter reading. Using a handheld meter enables you to walk all the way around the subject area and take readings to determine the proper exposure level. I have used



Corvette suicide—Detail would surely have been lost in the middle-of-the-night photograph of this burned automobile. But the application of proper lighting on all sides make it easy to see what was left of the Corvette after the driver deliberately wrecked it.



Saturn vs tree—In this case, the photographer used the patrol cars’ emergency lights to help illuminate the scene and bring out detail in the automobile. A strong fill-in flash was also needed to balance the patrol cars’ back-lighting.



Jeep in canal—After being pulled from a Florida canal, this Jeep presented a problem as far as photography was concerned: there was a lack of ambient lighting. So the photographer asked for help from the officers at the scene. They aimed the spotlights of their patrol cars on the background while the photographer used his own light sources on the foreground.



SUV rollover—Documenting this roll-over accident was a problem because of the different colors of light in the background. But the use of a fill-in flash helped to illuminate the foreground and neutralize the strong colors in the background.

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Sekonic and Minolta handheld meters for years without any problems.

□ **Cable release:** Nighttime photography almost always requires long exposures of a second or more—which means that any contact with the camera will cause the image to blur. Therefore, a cable release is essential so you can release the shutter without making direct contact with the camera or the tripod. I generally stand at arm's length from the camera.

□ **Flash:** A flash device will help illuminate the foreground and the subject matter. Always keep in mind that the flash should not be used as the primary light source, but only as secondary light source. If you use the flash as the main source of illumination, it will illuminate only the foreground; the background will remain dark and in shadow. Proper use of the flash is important. I recommend using a good flash that has an external battery supply. Additionally,

the flash head must be able to tilt. I have used Metz and Norman flash heads and have found them to be reliable.

Notes about the correct exposure

Meter readings with a hand-held meter should be taken from the brightest area of the subject as well as the darkest area of the subject. You should then set the exposure in the middle of those two readings. For example, if the brightest area is $f/11$ at 2 seconds and the darkest area is $f/5.6$ at 2 seconds, use $f/8$ at 2 seconds. In most situations, it is best to start with a shutter speed of about 2 seconds with a mid-range aperture of $f/5.6$ or $f/8$. Make sure that you use a tripod and a cable release to avoid making contact with the camera and shaking it during exposure.

Notes about the film sensitivity

Any type of color-negative film may be used: 100 ISO, 200 ISO, or 400 ISO film. However, 400 ISO film is recommended because the short exposure time required by that film helps to eliminate camera shake that can occur even when the camera is mounted on a tripod.

Notes about Reciprocity Law Failure

The term *Reciprocity Law Failure* refers to the loss in the exposure sensitivity of the film. For example, if a film rated at 100 ISO was exposed for 2 seconds, its film-speed rating could fall to 50 ISO. The resulting image would then be underexposed. Therefore, exposure bracketing is essential to achieve the correct exposure. I increase the exposure when bracketing to correct any loss in the film's sensitivity. The color sensitivity can also be affected by long exposures. Color film does not "see" color the same way our eyes see color. The human eye is much more versatile and more adaptable than film. Color film is measured in degrees Kelvin and is normally rated at 5500 degrees Kelvin. This means that the film is balanced for blue (white) light and if the light is not blue (white) it will reproduce the color different from what the human eye sees. A good example can be seen in the florescent light tubes used in offices. The human eye sees the color as white, but the film reproduces the color as green! When taking

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