

Step-by-Step Evidence Technicians Checklist

Evidence Technicians (At-Scene Investigation) (without marked evidence)

- **Photograph at “normal perspective”:** 35mm
- **Consider using flash cable if reflection is given**
- **Paint with light**
- **Watch for bystander photos (evidence???)**
- Video Tape (same as photographs)
- Photographs (Remember: distance of flash, use lights)
 - NOTE: re-shoot in daylight
 - Roadway and Roadway Evidence
 - Roadway signs / Intersection (relationship / distance to the crash)
 - 360 degrees around the scene
 - Lane Markings (Perspective of Roadway): down each lane of traffic in both directions / moving in
 - Traffic Control Devices / Signals
 - Speed Limit Signs
 - Road Defects
 - Lighting on the road
 - Obstructions
 - Skids / Yaws / Tire Marks (show striations in tire marks)(casting?)
 - Road Scars: Scrapes / Gouges
 - Overall from overhead (if possible)(satellite)
 - Vehicles
 - Outside
 - Plate, front, rear, left, right, 4 corners (9 photos per vehicle)
 - Roof / Undercarriage
 - Deformation of Vehicle
 - Inside
 - Overall drivers side
 - Drivers seat
 - Drivers floor (including pedals)
 - Dashboard (including light switch, ignition, speedometer)
 - Gear position
 - Seatbelt positions
 - Air bags
 - Windshield
 - Damage

- Evidence (alcohol, drugs, etc.)
- Overall passenger area
- VIN plate / label
- Tires (all four)
 - Overall
 - Showing tread
- All damage / debris (overalls and close ups)
- Relationship of damage to the object struck
- Vehicle load
- Viewpoints
 - Driver / Passenger (inside vehicle) (video w/ same vehicle)
 - Witnesses (video w/ same vehicle)
 - Obstructions
 - Overalls
- Occupants
 - Photo All Injuries
 - Collect Clothes
 - Pattern Injuries
- Vehicles path or travel (every 25')

NOTES:

- Use Cones or Flags to Show Evidence for Photos
- Remember Flash 50 Feet
- Once Vehicle is Moved – Need Consent or Search Warrant
- Watch what is said on the scene

Collection of Physical Evidence

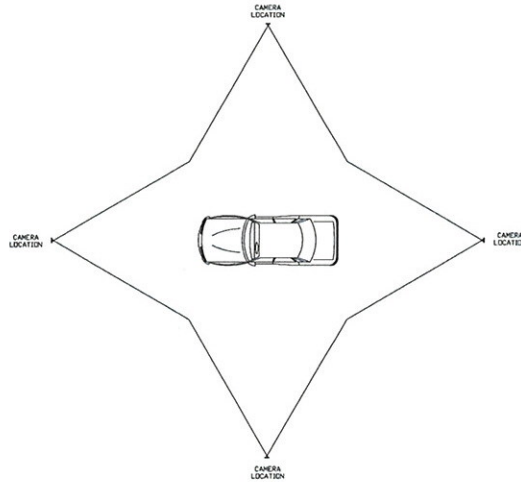
- Items of Evidentiary Value (helmet, glasses, reflective clothing, shoes, paint transfer, vehicle defects, hazards)
- Blood Samples
- Fabric Samples
- Air Bags
- Latent Prints
- Impressions (fabric / plate / color / damage / casting)
- Lamps
- Seat Measurements
- Vehicle Debris
- CDR
- Keys to vehicle
- Clothes
- Drugs / alcohol / paraphernalia
- Vehicle heights
- DUI kit

Vehicle Damage Photography

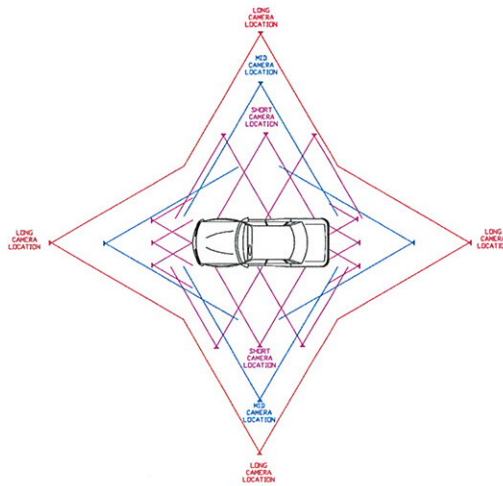
Photographs are one of the best ways to show contact and induced damage to vehicles.

It is recommended that the vehicle damage photos be taken at the scene before the vehicles are moved.

The **basic** four photographs that should be taken are: straight front, straight rear, and both sides.



Start with long range shots, mid range, short range and close up.



The following photographs should be taken of all vehicles:

- All sides of the vehicle
- Vehicle damage, including close ups of the damage
- Tires
- Lamps
- Interior
- Windows
- Seat belts

Manual Mode

In “manual” flash mode the photographer sets the ISO, shutter speed and the f/stop based on the distance between the flash and subject using the distance scale on the flash.

Recommended camera settings/comments:

1. Attach the external flash to the camera (always use the flash to fill in shadow areas).
2. Set camera and flash to “M” manual mode.
 - can also use aperture priority (av): operator sets the aperture, camera decides the shutter speed.
 - or set the shutter speed to 1/60th.
4. ISO should be set at 400 (unless a sunny day with snow on the ground).
5. F/8 or higher will have good depth of field in the photograph.
4. Shutter Speed of 1/30th or more time needs tripod and cable release.
5. Estimate the distance between the flash and subject.
6. Press half way down on the shutter release.
7. Adjust the f/stop until the distance indicator is at the estimated distance.

Fill Flash

1. Attach the external flash to the camera.
2. Set the camera to the “M” manual mode.
3. Set the shutter speed to 1/60th or 1/125th .
4. Use the camera’s meter to meter the shot and set the f/stop based on the light meter.
5. Set the f/stop on the lens.
6. Set the flash to manual mode and find the flash-to-subject distance for the f/stop selected.
7. Using a remote flash cord, hold the flash unit at the approximate distance from the shadow area and take the photograph.

Multiple Flashes

Multiple flash photography requires a minimum of two flashes and a light stand.

- 1) Mount the flash to a light stand.
- 2) Turn the flash on and put it in slave mode and manual mode.
- 3) Position the flash so that you get the best possible flash exposure coverage.
- 4) Mount the camera to the tripod and turn on the camera.
- 5) Attach external flash to the camera and set to master and manual mode.
- 6) Attach the shutter release cord to the camera.
- 7) Set the camera to “Manual” mode.
- 8) Set the aperture to f/8.
- 9) Set the shutter speed based on your light meter.
- 10) Compose and take your photographs.
- 11) If the image is under or overexposed adjust the aperture or shutter speed accordingly, or set the flashes to ETTL.

Time Exposure/Ambient Fill

This technique requires other light sources in the scene, such as a streetlight, flood lights, auto lights, or other light sources.

- 1) Mount the camera to a tripod and turn the camera on.
- 2) Attach the shutter release cable to the camera.
- 3) Set the camera to "Manual" mode.
- 4) Set the aperture to f/8.
- 5) Check the light meter and adjust the shutter speed to the correct exposure setting.
- 6) Compose and take the picture.
- 7) If the exposure is not correct, adjust the shutter speed and take another photograph.

Painting with Light

- 1) Mount the camera to a tripod and turn the camera on.
- 2) Attach the cable release to the camera.
- 3) Set the camera to "Manual" mode.
- 4) Set the shutter speed to "B" (bulb).
- 5) Set the aperture to f/8, this will give you some depth of field.
- 6) Compose your photograph; and while the shutter is open, fire the flash from several locations, or paint your scene with your flashlight.

**Night Time/Low Light Photography
Close Range
ETTL Flash Mode**

Equipment:

Camera with 18 – 55 mm lens
Formatted memory card
External flash
Dedicated flash sync cord – optional
Flash handle - optional

ISO 400

1. Attach external flash to your camera.
2. Set your flash to ETTL mode.
3. Set your camera to “M” manual shooting mode.
4. Set your shutter speed to 1/60th.
5. Set your f/stop to f/8.
6. Take your photo.

** This is for subjects that are 15 feet or closer.*



ISO 400, shutter speed 1/60th, f/8, flash ETTL mode



ISO 400, shutter speed 1/60th, f/8, flash ETTL mode

Night Time/Low Light Photography Long Rang and Mid-Range

Equipment:

Camera with 18 – 55 mm lens
Tripod
Shutter release cable
Formatted memory card
External flash
Dedicated flash sync cable

ISO 400

1. Attach camera to your tripod.
2. Attach your shutter release cable to your camera.
3. Attach your external flash to your camera.
4. Set your camera to "M" manual shooting mode.
5. Set your f/stop to f/8 or higher.
6. Adjust your shutter speed until the exposure indicator is in the middle of the light meter scale (zero on the LCD light meter scale).
7. Turn on your flash; don't change your shutter speed or f/stop.
8. Set your flash to E TTL mode.
9. Take your photo.



ISO 400, shutter speed 6 seconds,
f/8, no flash.



ISO 400, shutter speed 6 seconds,
f/8, flash E TTL mode

Painting With Light

- Must use a long exposure
- Drawbacks
 - Artificial lights may discolor the photo (white balancing)
 - Squad lights, headlamps, fire equipment, reflective signs can wash out areas of the photograph.

Long Exposure Procedures

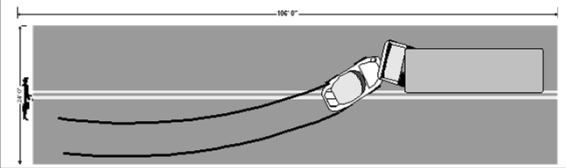
- Use a tripod
- Set the camera to manual
- ISO 1600+
- Shutter Speed to Bulb OR
- Set shutter speed based on light metering
- Aperture of F8 or lower
- Bracket photographs until the desired exposure is obtained

Painting With Light

- Technique used for illuminating large areas where without ambient light and outside the range of normal flash photography.
 - Large fields
 - Parking lots
 - Roadways
- Light sources
 - Electronic Flash
 - Flashlight

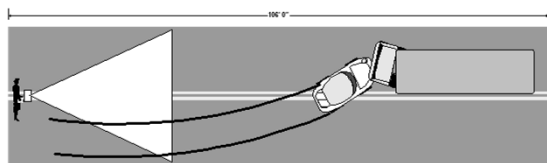
Painting With Light

- Nighttime Crash Scene
 - No street lights
 - over 100 feet
 - Skid/Yaw marks on roadway



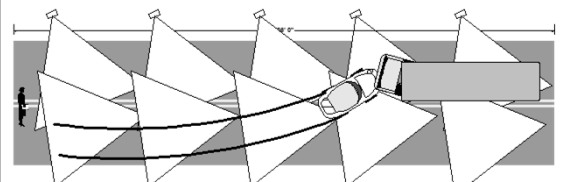
Painting With Light

- Using flash on camera assuming guide no. 80
 - This is as much of the scene you could hope to illuminate



Painting With Light

- In order to obtain a photograph of the entire scene using a flash.
 - Multiple firing of the flash from different locations down from the camera is necessary.



Painting With Light

- To accomplish this task you will need to follow these procedures:
- Best performed with 2 people
 - Set camera up on tripod.
 - Determine flash to subject distance
 - in this case about 15 feet
 - $100/15 = 5.3$ or $f5.6$
 - Set Camera on Bulb setting
 - Need a locking cable release
 - Have a black card to hold in front of the lens

Painting With Light

- Make sure there are no light sources shining back at the camera.
- Open shutter with cable release and lock open.
 - Use a dark or black card to hold in front of lens
- Remove card from lens and have helper fire flash
 - Keep flash pointed away from camera
 - Cover lens
- Move down and repeat process until entire scene has been covered by flash.

Painting With Light

- White Balancing

Artificial lights give off different colors.

White balancing setting on camera tells the camera what type of light is in the area and allows the camera to adjust.

Auto setting works very well.



Painting With Light

- In the absence of a flash unit,
 - other light sources may be used, such as flashlights, spotlights, or floodlights.
 - Aperture will depend on output of light used and distance to object.
 - Power will usually be much less than flash.
 - Good to try different f-stops
- With shutter opened and locked slowly move the light over the object "painting the area with the light"

Visual Perception Photos

Ambient light photos to document what could have been given available light.

Difficult due to variances in viewer's visual acuity.

- DO NOT state that photo is "what subject saw" (or could have seen)
- Utilize visual targets or markers within scene
- Bracket photos heavily ($\pm 3-5$ full stops)

Basic Photographer Techniques

- For bright sunny days, apertures of $f/11$ or $f/16$
- For night photography, apertures of $f/4$ or $f/5.6$
- For bright sunny days, use ISO 100
- For night photography, use ISO 400
- PRACTICE