

SAN BERNARDINO COUNTY SHERIFF'S DEPARTMENT

CRIME SCENE INVESTIGATION

- I. Getting the Call
 - A. Scene Approach
 - 1. Where to park
 - 2. Where to walk
 - 3. What to look for
 - B. Scene security
 - 1. Barrier tape placement
 - 2. Scene logs
 - 3. Who's in charge?
 - C. Persons on scene
 - 1. Who can enter scene
 - 2. Media presence
 - D. Briefing
 - 1. Who attends
 - 2. Critical information
 - 3. Who leads

- II. Photography
 - A. Crime Scene
 - 1. Overalls
 - 2. Midrange
 - 3. Close-ups
 - a. Using scales
 - b. For comparison
 - 4. Backups
 - a. When
 - b. Why
 - B. Evidence
 - 1. Composition
 - 2. Depth-of-Field
 - 3. How to use a scale
 - 4. Lighting
 - C. Impressions
 - 1. Equipment needed
 - 2. How to set-up the camera
 - 3. How to create appropriate lighting
 - 4. Nighttime
 - 5. Daytime

- D. Darkness
 - 1. Nighttime
 - a. Natural light
 - b. Painting with light
 - c. Time exposure
 - d. Digital vs. film
 - e. Adding artificial light
 - 2. Arson
 - a. Fire blackness
 - b. Over-exposure compensation
- E. Flash
 - 1. Daytime
 - a. Fill-in lighting
 - b. Leveling exposure
 - c. Indoor scenes
 - 2. Nighttime
 - a. Flash distance
 - b. Reflection
 - c. Burnout
- F. Aerials
 - 1. Aircraft
 - a. Lenses
 - b. Shutter speed
 - c. Turbulence
 - d. Composition
 - 2. Ladders
 - 3. Other resources
 - a. Fire department ladders
 - b. Municipal "Cherry Pickers"
 - c. Crane "Man-Baskets"
 - d. Forklifts
- G. Manual Camera Techniques
 - 1. Depth of field
 - 2. Exposure
 - 3. Bracketing
- H. Practical Exercises

III. Evidence

- A. Recognizing and identifying evidence
 - 1. What is evidence
 - a. Oral evidence
 - b. Physical evidence
 - c. Transitory evidence
 - d. Comparison evidence
 - 1) Locard Principle
 - 2) Standards
 - 3) Controls

2. Marking evidence
 - a. Why use markers
 - b. Placards, cones, & pin flags
 - 1) Which to use when
 - 2) Why to use different ones
 - c. Other markers
 - 1) Chalk
 - 2) Post-its
 - 3) Marking pen
 - 4) Spray paint
- B. Value of evidence and potential analysis
 1. Why did you collect it
 2. What knowledge can be gained from it
 3. Where should you direct it
- C. Location, Collection, and Packaging of evidence
 1. Trace evidence
 - a. What's Trace Evidence
 - 1) Hairs
 - 2) Fibers
 - 3) Glass
 - 4) Paint
 - 5) Soil
 - 6) Vegetation
 - 7) Other
 - b. Tape lifts
 - c. Forceps / Tweezers – do's & don'ts
 - d. Bindle packaging
 2. Biological Evidence
 - a. What's biological evidence
 - 1) Blood
 - 2) Semen
 - 3) Vaginal fluids
 - 4) Others
 - b. Alternate Light Sources
 - 1) UV Lights
 - 2) Crime Scopes
 - 3) Flashlight attachments
 - c. Presumptive Tests
 - 1) Hemastix
 - 2) Fluorescein
 - 3) Ortho-Toludine
 - 4) Blue Star
 - 5) Others
 - d. Collection
 - 1) Entire object
 - 2) Swabs
 - 3) Scrapings
 - 4) Cut-outs
 - 5) Controls

- e. Packaging
 - 1) Air-drying
 - 2) Separation of items
 - 3) Labeling
- 3. Firearms evidence
 - a. Safety First
 - b. Documentation
 - 1) Make, model, caliber, type
 - 2) Brand of ammunition
 - 3) Recording load / firing pin position
 - 4) Revolver vs. Semi-Automatic
 - c. Handling
 - d. Evidence on weapon
 - 1) Biological
 - 2) Trace
 - 3) Fingerprints
- 4. Impression evidence
 - a. Low angle light search
 - 1) Day
 - 2) Night
 - b. Collection
 - 1) Plaster casts
 - 2) Wax casts
 - 3) Plaster lifts
 - 4) Electro-static dust lifter
 - 5) Gel lifters
 - 6) Tape lifts
 - c. Packaging
- 5. Arson evidence
 - a. Working with arson investigators
 - b. Common origins
 - 1) Electric panels / outlets
 - 2) Gas mains / propane tanks
 - 3) Basic 'V' patterns
 - 4) Combustibles
 - 5) Accelerants
 - c. Packaging
- 6. GSR
 - a. What is it
 - b. Where is it
 - c. Infra-Red detection
 - d. Collection
 - 1) AA
 - 2) SEM

D. Practical Exercises

1. Tape-Lift
2. Weapon packaging
3. Biological sample
 - a. Hemastix presumptive tests
 - b. Swab collection
4. SEM GSR collection
5. Shoeprint cast
6. Shoeprint tape lift

** Students will be provided with personal protective equipment such as gloves, face-masks, eye protection, and anti-bacterial wipes/spray for these exercises.

IV. Documentation

- A. Photography
 1. Numbering photographs
 2. Photography logs
- B. Notes
 1. Note forms
 2. Briefing information
 3. Case summary
 4. Scene description
 5. Evidence logs
 6. Other tips
- C. Sketching
 1. Overhead or "Birdseye" view
 2. Three-dimensional
 3. Exploded
 4. Necessary information
 - a. Scale or "Not To Scale"
 - b. Directional arrow
 - c. Artist's initials
 - d. Case number
- D. Diagram
 1. Measuring
 - a. What to measure
 - b. Measuring devices
 - c. How to measure
 - 1) Indoor
 - 2) Outdoor
 - 3) Rural / remote
 2. Key / Legend
 3. Drawing "To Scale"
 4. Computer programs
- E. Practical Exercises
 1. Sketch & measure indoor scene
 2. Sketch & measure outdoor scene
 3. Sketch & measure remote scene

- V. Fingerprints
 - A. Latent, patent, plastic
 - B. Arch, loop, whorl
 - C. At the scene
 - 1. Locating
 - a. Bright lights
 - b. Crime Scene Scope
 - c. Developing
 - 2. Recording / Collecting
 - a. Photographs
 - b. Tape-lifts
 - c. Liqui-lift
 - D. Powders
 - 1. Black
 - 2. Colors
 - 3. Magnetic
 - 4. Fluorescent
 - E. Chemicals
 - 1. Superglue
 - 2. Ninhydrin
 - 3. Silver Nitrate
 - 4. Dye-Stains
 - 5. Physical Developer
 - F. Elimination prints
 - G. Unusual surfaces
 - H. Practical Exercises
 - 1. Develop & collect Superglue print
 - 2. Develop & photograph Ninhydrin print
 - 3. Develop & photograph Silver Nitrate print

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- VI. Vehicles
 - A. Processing
 - 1. Treat like independent crime scene
 - 2. Terminology
 - 3. Photography
 - 4. Searching
 - B. Tires
 - 1. Photographing
 - 2. Rolling prints
 - C. Practical Exercises
 - 1. Document evidence inside vehicle
 - 2. Create tire print standard

- VII. Gunshot Trajectory Reconstruction
 - A. Documentation
 - 1. Notes
 - 2. Sketches
 - 3. Report writing
 - B. Measuring
 - 1. Location of bullet holes
 - 2. Angles of entry
 - C. Photography
 - D. Scene Reconstruction
 - 1. Connecting bullet holes
 - 2. Stringing bullet paths
 - E. Vehicle Reconstruction
 - 1. Connecting bullet holes
 - 2. Stringing bullet holes
 - 3. Measuring on rounded surfaces
 - F. Practical Exercises
 - 1. Shooting reconstruction in room
 - 2. Shooting reconstruction in vehicle

- VIII. Child Abuse
 - A. Photography
 - 1. Injuries
 - 2. Using color card
 - B. Evidence
 - 1. Differences from “traditional” crime scene
 - 2. Locating
 - C. Documentation

- IX. Bloodstains
 - A. Size of stain as a function of origin
 - B. Shape of stain as a function of origin
 - C. Target surface effects
 - D. Cast-off patterns
 - E. Impact (medium energy) spatter stains
 - F. High energy spatter stains
 - G. Large volumes of falling blood
 - H. Contact patterns
 - I. Blood trails
 - J. Blood on clothing
 - K. Latent blood
 - 1. Blue Star
 - 2. Amido Black

- L. Practical Exercises
 - 1. Pattern recognition
 - 2. Scene analysis

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- X. Body Processing
 - A. Photography
 - 1. What to take
 - 2. How to take them
 - B. UV Exam
 - 1. What to look for
 - 2. Collecting positive results
 - C. Tape Lifts
 - 1. Sectioning the body
 - 2. Documenting lifts
 - D. Sex Kits
 - 1. When to do it
 - 2. How to do it
 - E. Bloodstains
 - 1. Documenting
 - 2. Interpreting
 - G. Bite Marks
 - 1. How to recognize
 - 2. How to photograph
 - 3. Casting
 - H. Latents on Skin
 - 1. Superglue method
 - 2. Transfer method
 - I. Autopsy
 - 1. What to bring
 - 2. What to photograph
 - 3. What to collect
 - J. Decomposed DNA
 - K. Practical Exercise
 - 1. Photograph crime scene dummy
 - 2. Collect tape lifts from crime scene dummy
 - 3. Develop & collect latent prints on pig skin

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XI. Bugs

A. Significance

1. Indicate T.O.D.
2. May locate injury sites
3. May contain toxicology
4. May indicate movement of body

B. Documentation

1. Environment
2. Directional orientation of body
3. Temperatures
 - a) Body
 - b) Air
 - c) Ground
 - d) Maggot masses

C. Collection

1. Separate species & ages
2. Living & Killed
3. Maintaining for analysis

XII. Bones

A. Role of Forensic Anthropologist

B. Documenting bone scatter site

C. Information from bones

1. Human or other animal
2. Age of remains
3. Sex of remains

XIII. Graves

A. Finding the grave

B. Excavation

1. Excavate complete grave in 10cm levels
2. Leave remains in place
3. Keep exposed with small brush & trowel
4. Screen all soil removed from gravesite
5. Remove all disturbed soil & screen

C. Documentation

1. Sketch each level
2. Photograph each level
3. Measuring evidence in grave

XIV. Courtroom Procedures

A. Displays

1. Prepared in advance
2. Life demonstrations

B. Testimony

1. Educating the jury
2. Witness box demeanor
3. NEVER LIE or evade

- XIII. Final
 - A. Practical Exercise – Mock Scene
 - B. Written – multiple choice questions
 - C. Mock Court

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