

# FIRE INVESTIGATION 1B

Approved by the Statewide Training and  
Education Advisory Committee



Adopted by the State Board of Fire Services



## INSTRUCTOR GUIDE

2000 Edition



# FIRE INVESTIGATION 1B

## TECHNIQUES OF FIRE INVESTIGATION INSTRUCTOR GUIDE



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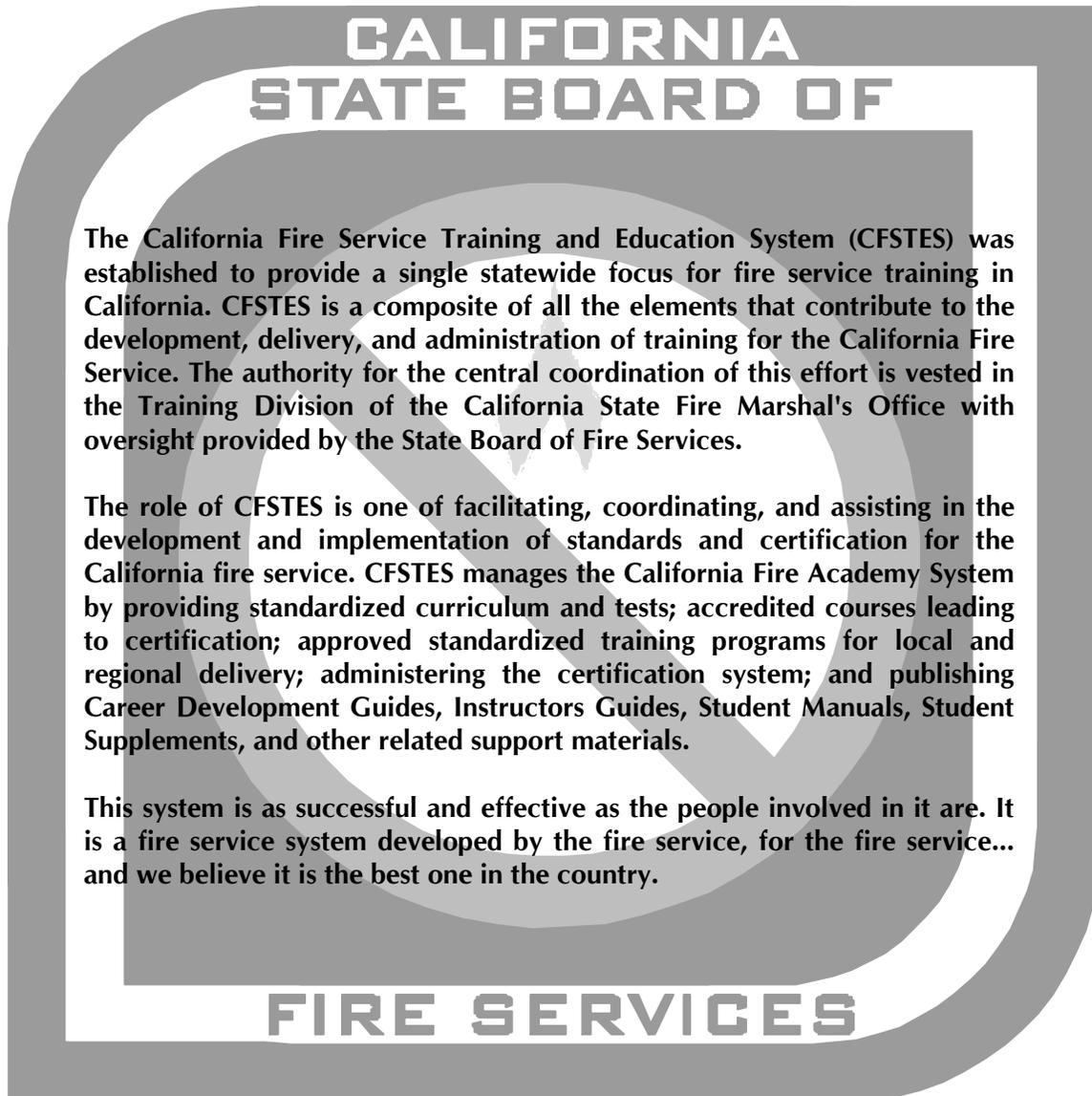
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# STATE FIRE TRAINING MISSION STATEMENT

The mission of State Fire Training is to enable the California fire service to safely protect life and property through education, training, and certification.



# ACKNOWLEDGMENTS

The CDF/State Fire Training Curriculum Development Division coordinated the development of the material contained in this guide. Before its publication, the Statewide Training and Education Advisory Committee (STEAC) and the State Board of Fire Services (SBFS) approved this curriculum. This curriculum is appropriate for fire service personnel and for personnel in related occupations that are pursuing State Fire Training certification.

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The material contained in this document was compiled and organized through the cooperative effort of numerous professionals within, and associated with, the California fire service. This 2000 edition of Fire Investigation 1B represents a collaborative effort and we gratefully acknowledge the individuals who served as the principal developers for this document.

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**JOHN McMASTERS**

Orange County Fire Authority

*"We gratefully acknowledge the hard work and accomplishments of those before us who built the solid foundation on which this program continues to grow."*

# INTRODUCTION TO THE MANUAL

This publication is intended to serve as an instructor guide and includes lesson plans, student activities, and quizzes. Suggested application methods have been identified throughout the lessons for you to use during your presentation.

The success of your students depends greatly on your conformance to the student behavioral objective prescribed at the start of each lesson. The remaining portion of the lesson plan is only a guide; and as such, should not preclude you from adapting the lesson plans to best meet the needs of your students. Group activities and direct application of the skills addressed in this curriculum is essential to the overall success of the course.

## INSTRUCTOR GUIDE

Material on these pages is intended to serve as an outline of instruction in lesson plan form. For each topic identified in the course outline, a lesson plan has been developed that contains: a time frame, level of instruction, behavioral objective, materials needed, references, preparation statement, and lesson content.

- **TIME FRAME:** The minimum, estimated duration required for "in class" presentation based on a 40-hour, five-day course.
- **LEVEL OF INSTRUCTION:** Identifies the instructional level that the material was designed to fulfill. Obviously, you have the latitude to increase the level based on available time, local conditions, and the students' apperceptive base.
- **BEHAVIORAL OBJECTIVE:** The behavioral objective is a statement of the student's performance desired at the end of instruction. You must ensure that enough information is given in the presentation and/or activities to enable the student to perform according to the goal.
- **MATERIALS NEEDED:** This should be a complete list of everything you will need to present the lesson, including handout materials, visual aids, quizzes, and so on.
- **REFERENCES:** These are the specific references the curriculum development team utilized when developing the lesson plan. In addition, references may be listed as additional study aids for instructors to enhance the lesson – books, manuals, bulletins, scripts, visual aid utilization plans and the like.

- PREPARATION: The motivational statements in this section connect the student with the lesson plan topic through examples or illustrations relating to their occupation, injury, and even mortality. You may modify this section to better fit your students' environment.
- LESSON CONTENT: Includes information utilized in the four-step method of instruction.

#### TECHNICAL LESSON PLAN

##### Presentation

Everything you say or display  
Content  
Instructor Notes

##### Application

Everything the student participates in  
Questions  
Classroom Exercises  
Audiovisual Cues

#### **APPENDIX A – Instructor Quizzes**

- ❖ Course quizzes with answer keys.

#### **APPENDIX B – Student Quizzes**

- ❖ Course quiz masters to copy for your students. Keep in good condition to use for future classes. Collect these quizzes after they have been graded and discussed in class. Do not let the students keep them since you will be using the same quizzes for your next class.

Additional appendices may be added as necessary to meet minimum course requirements.

COURSE TITLE: FIRE INVESTIGATION 1B  
Techniques of Fire Investigation

COURSE OBJECTIVES: To...

- a) provide an insight on the motives of arsonists.
- b) provide information on scene safety for the investigator including post blast investigation.
- c) provide information on evidence recognition, documentation, and preservation including scene photography and trace evidence.
- d) provide information on witness and suspect interviewing and interrogation including juvenile law.
- e) provide information on fire fatalities and injuries including scene investigation and mechanism of injury.
- f) provide information on documentation of findings including case reports, insurance information, and other resources available to the investigator.

COURSE CONTENT: ..... 40 HOURS

UNIT 1: INTRODUCTION & REVIEW

Introduction to Investigation 1B ..... 2:00

UNIT 2: MOTIVES

Motives ..... 4:00

UNIT 3: SCENE EXAMINATION

Scene Safety for the Investigator ..... 1:00

Post Blast Investigation ..... 1:00

UNIT 4: EVIDENCE

Scene Photography ..... 2:00

Evidence Recognition, Documentation, and Preservation ..... 4:00

Trace Evidence ..... 5:00

UNIT 5: INTERVIEWING

Introduction to Interviewing ..... 2:00

Techniques of Interviewing ..... 7:00

Introduction to Juvenile Law ..... 1:00

UNIT 6: FATALITIES AND INJURIES

Scene Investigation ..... 2:00

Mechanism of Injury ..... 2:00

## UNIT 7: INFORMATION RESOURCES

Introduction to Case Reports.....	1:00
Insurance Information for the Fire Investigator .....	1:00
Resources.....	1:00
Building Construction Drawings and Terminology.....	2:00
REVIEW AND CERTIFICATION EXAM.....	2:00

## TEXTS & REFERENCES:

- "Interviewing and Interrogation Techniques, Part I", POST video broadcast 4-23-93
- "Interviewing and Interrogation Techniques, Part II", POST video broadcast 4-23-93
- California Criminalistic Institute
- California Insurance Code
- California Legal Source Book
- California Peace Officers Legal Sourcebook, Department of General Services, Chapter 7, Current Edition
- California Welfare and Institutions Code
- Explosive Recognition and Reconnaissance, Student Manual, California State Fire Marshal's Office, 1991
- Fire and Arson Detection, Federal Emergency Management Agency, National Fire Academy, 1996
- Fire Fighter Line-of-Duty Death and Injury Investigations, IAFF, 1997
- Fire Investigation 1A Student Manual, SFT, 1996
- Fire Investigation 1B Student Manual, SFT, 2000
- Guide for Investigation of a Line-of-Duty Death, IAFC
- Introduction to Fire Origin and Cause, IFSTA, Second Edition
- Kirk's Fire Investigation, John DeHaan, Brady Prentice Hall, 4<sup>th</sup> Edition, 1997
- Law Enforcement, Investigative Services Branch, California Criminalistic Institute
- NFPA 921 Guide for Fire and Explosion Investigations, NFPA, 1998 Edition
- Peace Officer Background Investigation, POST, 1991
- Physical Evidence Bulletins, California Department of Justice, Division of Law Enforcement, Investigative Services Branch
- Physical Evidence Bulletins, California Department of Justice, Bureau of Forensic Services
- Post Mortem Protocol, Foundation for Fire Safety, 1983
- Serial Arsonist – Investigative Considerations, Allen D. Sapp, Timothy G. Huff, G.P. Gary, and David J. Icové of the FBI National Center for the Analysis of Violent Crime (NCAVC)
- State Fire Training Policies and Procedures, SFT, 1997
- The Investigation & Prosecution of Arson, CDAA & SFM, Second Edition, 1995



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

UNIT 1: INTRODUCTION AND REVIEW

**TOPIC:** INTRODUCTION TO FIRE INVESTIGATION 1B

**TIME FRAME:** 2:00

**LEVEL OF INSTRUCTION:** Level I

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given an oral examination and student activity

*Behavior:* The student will confirm a knowledge of the critical components from the Fire Investigation 1A course and the requirements of and expectations for the Fire Investigation 1B class by completing the student activity and answering some oral questions

*Standard:* To the instructor's satisfaction according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 1-1, pages 1-4

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- Activity Sheet 1-1-1

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Fire Investigation 1A Student Manual, SFT, 1996
- State Fire Training Policies and Procedures, SFT, 1997

**PREPARATION:**

The objective of Fire Investigation 1B is to provide you with techniques of fire investigation. The material presented in this session will highlight the important skills and abilities necessary for the fire investigator to successfully execute his or her responsibilities in today's complex world of the fire investigation.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

INTRODUCTION TO FIRE INVESTIGATION 1B

PRESENTATION	APPLICATION
<p><b>I. INTRODUCTIONS</b></p> <p>A. Instructor(s)</p> <ol style="list-style-type: none"><li>1. Fire/police department background</li><li>2. Fire/arson investigator background</li><li>3. Teaching background</li><li>4. Phone number(s)</li></ol> <p>B. Students</p> <ol style="list-style-type: none"><li>1. Department</li><li>2. Rank/experience</li></ol> <p><b>II. COURSE DESCRIPTION</b></p> <p>A. Course was developed by a task force comprised of members from the California Conference of Arson Investigators (CCAI) and department arson investigators</p> <p>B. Approved for delivery by State Training and Education Advisory Committee (STEAC) and the State Board of Fire Services (SBFS)</p> <p>C. Includes lecture, activities, and audio/visual supplements</p> <p>D. Course length</p> <ol style="list-style-type: none"><li>1. 40 hours</li><li>2. Minimum attendance is 36 hours</li></ol> <p>E. Calendar of events</p> <ol style="list-style-type: none"><li>1. Daily start time and end time</li></ol>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

INTRODUCTION TO FIRE INVESTIGATION 1B

PRESENTATION	APPLICATION
<p>F. Quizzes</p> <ol style="list-style-type: none"><li>1. 80% passing score</li></ol> <p>G. Make-up process</p> <p>H. Grading system</p> <ol style="list-style-type: none"><li>1. Must pass class to be eligible to take certification exam</li></ol> <p><b>III. REGISTRATION</b></p> <p><b>NOTE:</b> Circulate registration forms.</p> <ol style="list-style-type: none"><li>A. State Fire Training roster</li><li>B. College applications (if appropriate)</li><li>C. Other rosters (if appropriate)</li><li>D. Student manuals</li></ol> <p><b>NOTE:</b> Distribute student manuals to students purchasing them and explain format.</p> <p><b>IV. FACILITIES ORIENTATION</b></p> <p><b>NOTE:</b> The following information must be explained by the instructor based on preferred classroom management techniques and local sponsoring agency requirements.</p> <ol style="list-style-type: none"><li>A. Parking</li><li>B. Breaks</li><li>C. Restrooms</li><li>D. Refreshments</li><li>E. Eating, drinking, and smoking policies</li><li>F. Public phone location</li></ol>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>G. Emergency message phone number</p> <p>H. Off limit areas</p> <p><b>V. CFSTES CERTIFICATION TRACK</b></p> <p>A. Course completion certificate issued as partial fulfillment for Fire Investigator I</p> <p><b>NOTE:</b> Refer to current certification guidelines for Fire Officer and Fire Investigator I and II from State Fire Training.</p> <p><b>VI. FIRE INVESTIGATION 1A REVIEW</b></p> <p>A. Short quiz to review the material from Fire Investigation 1A</p> <ol style="list-style-type: none"> <li>1. Refresh student's memory</li> <li>2. Many students do not enroll in an Investigation 1B class immediately following an Investigation 1A               <ol style="list-style-type: none"> <li>a) Not all students will be current with the 1A curriculum when beginning this class</li> </ol> </li> </ol> <p>B. Quiz is used as a guide to assist the instructor in covering those areas that will enhance the learning experience</p> <ol style="list-style-type: none"> <li>1. Topics were limited to those that related directly to the progression of Investigation 1B</li> <li>2. It would be impossible to cover the entire Investigation 1A curriculum during the review</li> </ol> <p><b>NOTE:</b> It is important for the instructor to stay within the 1-hour time frame so the remainder of the course delivery will not be impacted.</p> <p>C. Some of the questions were written to encourage discussion when reviewing the answers</p>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

INTRODUCTION TO FIRE INVESTIGATION 1B

## PRESENTATION

## APPLICATION

- D. All questions have the reference listed so the student can review on their own any questions they answered incorrectly

Complete Activity  
Sheet 1-1-1 and  
discuss.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

INTRODUCTION TO FIRE INVESTIGATION 1B

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## ***SUMMARY:***

Much of the information learned in Fire Investigation 1A is brought forward and used in this course. The group activities will provide a greater understanding of the underlying principles being taught.

## ***EVALUATION:***

The student will complete Activity Sheet 1-1-1 at the beginning of the class.

## ***ASSIGNMENT:***

Review your notes.

## ACTIVITY SHEET 1-1-1

### FIRE INVESTIGATION 1A REVIEW



TIME FRAME: 1:00

MATERIALS NEEDED:

- Pen or pencil

INTRODUCTION:

This activity provides you the opportunity to refresh your memory before receiving new information in the Fire Investigation 1B class. Experience has shown that many students do not enroll in this class immediately following Fire Investigation 1A and therefore, need an activity that will bring them "up to date."

DIRECTIONS:

Answer each of the following questions in the space provided. Be prepared to review your answers with the class.

1. Name a liquid having a flash point at or above 100°F. (*Investigation 1A Student Manual, page 18*)

**Combustible**

2. What is the ratio of a given volume of vapor to an equal volume of air? (*Investigation 1A Student Manual, page 18*)

**Vapor density**

3. What are the four methods of heat transfer? (*Investigation 1A Student Manual, pages 22-23*)

**1. Conduction 2. Convection 3. Radiation 4. Direct flame impingement**

4. What is flashover? (*Investigation 1A Student Manual, page 23*)

**The stage of the fire when exposed combustibles in the space have become heated to their ignition temperatures. The exposed combustibles and gases ignite.**

5. What method of heat transfer is most responsible for fire spread during the advanced stages of a structure fire? (*Investigation 1A Student Manual, page 23*)

**Radiation**

6. Which amendment of the Constitution protects citizens from unreasonable searches and seizures? (*Investigation 1A Student Manual, page 35*)

**Fourth Amendment**

7. What is the significance of Michigan vs. Tyler (1978)? (*Investigation 1A Student Manual, pages 48-52*)

**The U.S. Supreme Court established the minimum requirements for conducting a fire scene search and seizure without a warrant.**

8. What is the significance of Michigan vs. Clifford? (*Investigation 1A Student Manual, pages 48-52*)

**An investigator cannot expand the scope of their search beyond cause and origin without a warrant.**

9. What is the Penal Code section that describes the punishment for arson? (*Investigation 1A Student Manual, page 64*)

**451 PC**

10. What is the Penal Code section that describes the punishment for unlawfully causing a fire? (*Investigation 1A Student Manual, page 64*)

**452 PC**

11. What is the Penal Code section that describes the punishment for attempted arson? (*Investigation 1A Student Manual, page 64*)

**455 PC**

12. What is an Inspection (Administrative) Warrant? (*Investigation 1A Student Manual, page 38*)

**An order, in writing, issued by a Magistrate, allowing you to conduct an origin and cause investigation.**

13. What can an inverted “V” burn pattern indicate? (*Investigation 1A Student Manual, pages 85-86*)

*Very rapid combustion – possible presence of flammable accelerants.*

14. What are three types of fire causes? (*Investigation 1A Student Manual, page 120*)

*1. Natural      2. Accidental      3. Incendiary*

15. What are five different indicators (red flags) of arson? (*Investigation 1A Student Manual, pages 214-215*)

*1. Multiple fires   2. Trailers   3. Location of fire   4. Removal of contents before the fire*  
*5. Presence of flammable liquid*

16. What is the significance about the location of a fire within a structure? (*Investigation 1A Student Manual, page 201*)

*Does it make sense? Is the location in the middle of a bed? Center of a floor? Is the fire in a closet? What is the relationship between the fire and the fire cause?*

17. What is “negative corpus?” (*Investigation 1A Student Manual, page 204*)

*The elimination of all accidental ignition sources.*

18. What is an accelerant? (*Investigation 1A Student Manual, page 7*)

*A fuel (often a flammable liquid) that is used to increase the spread of fire.*

19. What is pyrolysis? (*Investigation 1A Student Manual, pages 20-21*)

*The chemical decomposition of matter through the action of heat. The fuel continues to dry and char as the fuel continues to absorb heat. Sufficient combustible gas is released to produce an atmosphere rich enough to support combustion. Open flaming combustion will occur if an open flame or other ignition source is present to ignite the gases.*

20. What is the “plain view” doctrine? (*Investigation 1A Student Manual, pages 59-61*)

*While in the course of their investigation, investigators can seize evidence of a crime that is in plain sight.*



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

UNIT 2: MOTIVES

**TOPIC:** MOTIVES

**TIME FRAME:** 4:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz and student activity

*Behavior:* The student will confirm a knowledge of arson motives by completing the written quiz and student activity

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 2-1, pages 5-18

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- "Hunt for the Serial Arsonist" video, NOVA, 1996
- "Arson Investigator" video, Investigative Reports, A&E Television
- Activity Sheet 2-1-1

**REFERENCES:**

- Kirk's Fire Investigation, John DeHaan, Brady Prentice Hall, 4<sup>th</sup> Edition, 1997
- Fire and Arson Detection, Federal Emergency Management Agency, National Fire Academy, 1996
- Serial Arsonist – Investigative Considerations, Allen D. Sapp, Timothy G. Huff, G.P. (Gus) Gary, and David J. Ilove of the FBI National Center for the Analysis of Violent Crime (NCAVC)
- Fire Investigation 1B Student Manual, SFT, 2000

**PREPARATION:**

Although motive is not required as an element of the crime of arson, it is important to the investigator. An understanding of the motive or reason for the fire provides the investigator evidence to the identity of the arsonist and enables the prosecutor to explain the case to a jury.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

## PRESENTATION

## APPLICATION

**NOTE:** The two videos can be shown at any time during the presentation.

### I. MOTIVES

A. Investigators frequently confuse “motive” and “intent”

What is “motive”?

**SLIDE: 2-1-1**

1. Motive defined

a) An inner urge that prompts a person to action with a sense of purpose

b) The “reason” for setting the fire

What is “intent”?

**SLIDE: 2-1-2**

2. Intent defined

a) One’s mental attitude, including purpose, willfulness, determination, etc., at the time of doing the act

b) The “deliberateness” of the act

**SLIDE: 2-1-3**

B. Identification of the motive

1. Often provides investigative leads

2. Helps to lead investigator during interviews

3. Is usually required by the prosecutor though not an element of the crime of arson



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

## PRESENTATION

## APPLICATION

### II. COMMON ARSON MOTIVES

#### A. Six basic motives frequently encountered

1. Revenge/spite
2. Excitement
3. Vandalism
4. Profit/fraud
5. Crime concealment
6. Extremist

#### B. Pyromania

1. This category is not listed as a motive
  - a) More of a mental state instead of a motive for fire setting
  - b) Determined by an appropriate medical authority
  - c) Due to this medical classification, it is not listed as a motive category in the Federal Bureau of Investigation Arson Manual
2. There exists a substantial amount of disagreement among the medical community relating to pyromania
  - a) It is recognized that some individuals are obviously mentally ill and suffer from delusions
  - b) They may respond to voices within, or they may be directed to set fires by a variety of animals

**SLIDE: 2-1-4**









# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

PRESENTATION	APPLICATION
<ul style="list-style-type: none"><li>2. Multiple attempts</li><li>3. Flammable liquids</li><li>4. Sexual perversion<ul style="list-style-type: none"><li>a) Semen</li><li>b) Feces</li><li>c) Pornographic material</li><li>d) Women's undergarments</li></ul></li></ul>	<p><b>SLIDE: 2-1-13</b></p> <p><b>SLIDE: 2-1-14</b></p>
<p><b>V. VANDALISM</b></p> <ul style="list-style-type: none"><li>A. A malicious and mischievous motivation usually by juveniles ages 4-12<ul style="list-style-type: none"><li>1. Mischief</li><li>2. Peer pressure</li><li>3. Initiation</li><li>4. Excitement</li><li>5. Curiosity<ul style="list-style-type: none"><li>a) Child caused</li></ul></li></ul></li><li>B. Targeted property<ul style="list-style-type: none"><li>1. Schools</li><li>2. Vegetation</li><li>3. Vacant buildings</li></ul></li></ul>	<p><b>SLIDE: 2-1-15</b></p>





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

PRESENTATION	APPLICATION
<ul style="list-style-type: none"><li>2. Inability to meet mortgage and other payments<ul style="list-style-type: none"><li>a) Bills piling up</li><li>b) Embarrassment</li><li>c) One way out</li><li>d) Unemployment</li></ul></li><li>3. Inability to dispose of unwanted property<ul style="list-style-type: none"><li>a) Owner liable for taxes on useless structure</li></ul></li><li>4. Sale of land without buildings<ul style="list-style-type: none"><li>a) Land sells faster</li><li>b) Land of more value</li></ul></li><li>5. Condemnation proceedings against structure<ul style="list-style-type: none"><li>a) Cheaper to burn than to have contractor remove</li></ul></li><li>6. Estate settlement<ul style="list-style-type: none"><li>a) Disagreement over who gets family home</li><li>b) Money easier to divide</li></ul></li><li>7. Imminent business failure or business recession</li></ul>	<p><b>SLIDE: 2-1-19</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>c) Insufficient funds to buy out dissatisfied partner</li> <li>14. Dissatisfaction with property location               <ul style="list-style-type: none"> <li>a) Property value decline</li> <li>b) Racial tension</li> </ul> </li> <li>15. Condemnation of property for public works projects               <ul style="list-style-type: none"> <li>a) Insurance of more value than government offer</li> <li>b) Only portion of property purchased                   <ul style="list-style-type: none"> <li>1) Remaining property is worthless</li> </ul> </li> </ul> </li> <li>16. Change in traffic patterns               <ul style="list-style-type: none"> <li>a) New interstate</li> <li>b) Loss of customers</li> </ul> </li> <li>17. Outstanding accounts receivable               <ul style="list-style-type: none"> <li>a) Business appears good but no cash coming                   <ul style="list-style-type: none"> <li>1) Payroll, taxes, etc., remain constant</li> </ul> </li> </ul> </li> <li>18. Equipment/machinery obsolete</li> </ul>	<p>Have students identify individuals who would know or confirm present relationship between business partners.</p> <p><b>SLIDE: 2-1-21</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

PRESENTATION	APPLICATION
<p>19. Breaking of lease</p> <ul style="list-style-type: none"> <li>a) Fire may allow for lease to be broken</li> </ul> <p>20. Owner desires to retire from business</p> <ul style="list-style-type: none"> <li>a) Faster/easier to collect insurance money               <ul style="list-style-type: none"> <li>1) Unable to sell</li> </ul> </li> <li>b) Does not want anyone to own business he had for his life time</li> <li>c) Business not making expected profit</li> <li>d) Loss of insurance coverage</li> </ul> <p>21. Desire to redecorate/cosmetic fire</p> <ul style="list-style-type: none"> <li>a) Often intended to be small smoky fire</li> <li>b) Often goes undetected by fire fighters</li> <li>c) Often has occurred more than once               <ul style="list-style-type: none"> <li>1) Possibly not in the same jurisdiction</li> </ul> </li> <li>d) Kitchen fire from grease burning in a frying pan an occupant states, "I was preparing to cook chicken." but when you look, there is no chicken</li> </ul> <p>22. Landlord fires</p> <ul style="list-style-type: none"> <li>a) Insured value more than rental income</li> </ul>	<p>How many of you have responded to a kitchen fire?</p>





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

PRESENTATION	APPLICATION
<p>E. Mistakes often made by type of arsonist</p> <ol style="list-style-type: none"><li>1. Removal of personal property or valuables</li><li>2. Belief that insurance policy must be saved</li><li>3. Can be preplanned</li></ol> <p>F. Reasons for indirect gain</p> <ol style="list-style-type: none"><li>1. Insured is not involved, fire setter(s) benefits either directly or indirectly<ol style="list-style-type: none"><li>a) Business competition<ol style="list-style-type: none"><li>1) New business in town offers lower prices</li></ol></li><li>b) Moratorium on building construction</li><li>c) Contractor seeking repair contract</li><li>d) Salvage dealer seeking contract</li><li>e) Loss payee needs cash<ol style="list-style-type: none"><li>1) Often an individual, other than those directly connected with business, is named as loss payee on insurance contract</li></ol></li><li>f) Tenant fires<ol style="list-style-type: none"><li>1) To break lease</li></ol></li><li>g) Landlord fires<ol style="list-style-type: none"><li>1) To force undesirables out</li><li>2) New lease or rent increase</li></ol></li></ol></li></ol>	<p><b>SLIDE: 2-1-24</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>h) Hiring private equipment/services for fire control               <ul style="list-style-type: none"> <li>1) Tenders</li> <li>2) Dozers</li> <li>3) Portable showers/toilets</li> <li>4) Food service</li> </ul> </li>   <li>G. Fraud fires               <ul style="list-style-type: none"> <li>1. Miscellaneous classifications                   <ul style="list-style-type: none"> <li>a) Can be either direct or indirect gain fraud fires</li> </ul> </li> <li>2. Organized criminal activity                   <ul style="list-style-type: none"> <li>a) Insurance fraud</li> <li>b) Elimination of competition</li> <li>c) Intimidation or protection</li> <li>d) Request assistance if organized criminal activity is suspected                       <ul style="list-style-type: none"> <li>1) District Attorney</li> <li>2) U.S. Attorney</li> <li>3) Federal agencies</li> </ul> </li> </ul> </li> <li>3. Building construction                   <ul style="list-style-type: none"> <li>a) Frequently improperly classified as fires by vandals, vagrants, juveniles, or children</li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 2-1-25</b></p>

# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>b) Labor problems</li> <li>c) Rival labor unions</li> <li>d) Failure to receive inspection approval               <ul style="list-style-type: none"> <li>1) Permit moratorium</li> </ul> </li> <li>e) Project has become unsaleable prior to completion</li> <li>f) Insurance proceeds</li> <li>4. Building demolition               <ul style="list-style-type: none"> <li>a) Labor problems similar to building construction</li> <li>b) Avoid costs of city demolition permits</li> <li>c) Reduce labor cost</li> <li>d) Cost of the removal of asbestos or other hazardous material</li> </ul> </li> </ul>	<p><b>SLIDE: 2-1-26</b></p>
<p><b>VII. CRIME CONCEALMENT</b></p> <ul style="list-style-type: none"> <li>A. Arson is secondary to the primary criminal activity</li> <li>B. The fire is set to conceal the primary crime               <ul style="list-style-type: none"> <li>1. Murder</li> <li>2. Suicide</li> <li>3. Burglary</li> <li>4. Embezzlement</li> <li>5. Larceny</li> </ul> </li> </ul>	





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

## PRESENTATION

## APPLICATION

### D. Targeted property

1. The target can provide insight into the extremist motivation
2. Abortion clinics
  - a) Right-to-life
3. Animal rights
  - a) Slaughter house, fur stores, taxidermist, laboratories
4. Businesses with labor problems
5. Religious buildings
  - a) Opposing religious beliefs
6. Political
7. Sex oriented

**SLIDE: 2-1-29**

### E. Fire scene indicators

1. Organized attack
2. Multiple offenders
3. Fire bombs
4. Messages, symbols, or literature
  - a) Graffiti
  - b) Leaflets
5. Media contact claiming responsibility

**SLIDE: 2-1-30**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MOTIVES

## PRESENTATION

## APPLICATION

6. Large amounts of flammable liquid
7. Unexploded devices

Complete Activity  
Sheet 2-1-1.

Administer Quiz #1.

## ***SUMMARY:***

The investigator has to know the reasons that cause individuals to burn their property. Motives relate to the cause of fire. Without an identifiable motive, the district attorney may refuse to prosecute and the jury may refuse to convict.

## ***EVALUATION:***

The student will complete a written quiz and student activity at a time determined by the instructor.

## ***ASSIGNMENT:***

Review your notes and read Chapter 2-1 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

## ACTIVITY SHEET 2-1-1

### MOTIVES OF THE FIRESETTER



TIME FRAME: 0:10

MATERIALS NEEDED:

- Pen or pencil

INTRODUCTION:

This activity provides the student with the opportunity to identify the probable motive for a fire.

DIRECTIONS: Each student will:

1. Select from Column 2 the most likely motive for the ten situations or conditions in Column 1.
2. Write the corresponding letter for the motive selected next to the item number in Column 1.

	SITUATION/CONDITION	MOTIVE
1.	<u>  A/C  </u> A commercial building fire in which all file cabinets were found open.	A. Profit/fraud
2.	<u>  E  </u> The burning of federal, state, or local government property.	B. Excitement
3.	<u>  C  </u> A residential fire in which forcible entry occurred before the arrival of fire companies.	C. Crime Concealment
4.	<u>  A  </u> Fires in businesses with merchandise that is out of style.	D. Revenge/spite
5.	<u> B/D/F </u> A closet fire occurring at 1630 hours.	E. Extremist
6.	<u>  B/F  </u> Six fires occurring in the same neighborhood within a few minutes of one another.	F. Vandalism
7.	<u>  A  </u> A small, smoky kitchen fire.	
8.	<u>  A/D  </u> A bar that was burned using gasoline thrown into the structure via the doorway.	
9.	<u>  B  </u> A small fire extinguished by the company security guard before the fire department's arrival.	
10.	<u>  B/F  </u> The sixth vacant building fire in a week and all within the same general neighborhood.	

**TOPIC:** SCENE SAFETY FOR INVESTIGATORS

**TIME FRAME:** 1:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz

*Behavior:* The student will confirm a knowledge of the procedures to safely perform the duties of an investigator at a fire scene by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 3-1, pages 19-34

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- "The Fire Investigator" video, NFPA, 1997 (recommended)

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Introduction to Fire Origin and Cause, IFSTA, Second Edition
- Kirk's Fire Investigation, John DeHaan, Brady Prentice Hall, 4<sup>th</sup> Edition, 1997
- NFPA 921 Guide for Fire and Explosion Investigations, NFPA, 1998 Edition

**PREPARATION:**

Personal safety and the safety of others should be a primary consideration. A scene analysis determines the personal protective equipment necessary. Scene security and structural integrity must also be established to ensure a safe environment. The atmosphere should be tested for the presence of toxic gases. Be cognizant that there may be an oxygen deficient atmosphere. Ventilation may have to be augmented. Other safety considerations include an evaluation of electrical hazards, dark or poorly illuminated areas, hazardous materials, infectious diseases, and animals still on the scene.









# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

## SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
<p><b>II. EQUIPMENT</b></p> <p>A. Personal protective equipment and safety</p> <ol style="list-style-type: none"><li>1. Clothing<ol style="list-style-type: none"><li>a) Coveralls</li><li>b) Turnouts</li><li>c) Hazardous materials suit (if trained)</li></ol></li><li>2. Helmet or appropriate hard hat</li><li>3. Safety shoes or boots</li><li>4. Eye protection<ol style="list-style-type: none"><li>a) Goggles</li><li>b) Safety glasses</li></ol></li><li>5. Gloves<ol style="list-style-type: none"><li>a) Leather<ol style="list-style-type: none"><li>1) Moving debris</li><li>2) Protection from sharp edges and glass</li></ol></li><li>b) Latex or rubber<ol style="list-style-type: none"><li>1) Handling bodies</li><li>2) Handling fluids</li><li>3) Handling evidence</li><li>4) Replace if cross contamination is an issue</li></ol></li></ol></li></ol>	





# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

## SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
10. Basic first aid kit	



# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
<p>B. Investigative equipment</p> <ol style="list-style-type: none"><li>1. Lights<ol style="list-style-type: none"><li>a) External power source<ol style="list-style-type: none"><li>1) Generator</li><li>2) Battery</li></ol></li></ol></li><li>2. Ladders<ol style="list-style-type: none"><li>a) Appropriate size and rating</li><li>b) Use caution when placed against walls</li><li>c) Ladder and/or wall may be compromised by fire</li></ol></li><li>3. Power tools<ol style="list-style-type: none"><li>a) Used properly</li><li>b) Grounded appropriately or battery powered</li><li>c) If gasoline fueled, refill outside</li><li>d) Beware of exhaust<ol style="list-style-type: none"><li>1) Contaminating scene</li><li>2) Carbon monoxide hazard</li></ol></li></ol></li><li>4. Shoring/bracing material<ol style="list-style-type: none"><li>a) Prevent structure collapse</li></ol></li></ol>	<p><b>SLIDE: 3-1-9</b></p>

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>5. Monitoring devices               <ul style="list-style-type: none"> <li>a) Test for atmospheric conditions                   <ul style="list-style-type: none"> <li>1) Combustible gas detector</li> <li>2) Oxygen deficiency</li> <li>3) Toxic gas detector</li> <li>4) Carbon monoxide</li> </ul> </li> </ul> </li> <li>6. Ventilation equipment               <ul style="list-style-type: none"> <li>a) High volume fan                   <ul style="list-style-type: none"> <li>1) Positive pressure ventilation</li> </ul> </li> </ul> </li> <li>7. Safety line or safety net               <ul style="list-style-type: none"> <li>a) While working at unsecured or unstable elevations</li> </ul> </li> <li>8. Hand tools               <ul style="list-style-type: none"> <li>a) Undamaged</li> <li>b) Head firmly attached to handle</li> <li>c) Avoid cross contamination</li> <li>d) Clean tools to avoid cross contamination of evidence                   <ul style="list-style-type: none"> <li>1) "Dawn" liquid dishwashing soap was most effective according to the BATF</li> <li>2) Any citrus-based cleanser is an adequate alternative</li> </ul> </li> </ul> </li> </ul>	



# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
<p>9. Decontamination products</p> <ul style="list-style-type: none"><li>a) Water for flushing or washing<ul style="list-style-type: none"><li>1) Degree of cleansing dependent upon nature of contamination</li></ul></li><li>b) Plastic bags for soiled clothing</li><li>c) Replacement unsoiled clothing</li></ul> <p><b>III. PROCEDURES TO FOLLOW</b></p> <p>A. Approaching the scene</p> <ul style="list-style-type: none"><li>1. Other emergency vehicles responding<ul style="list-style-type: none"><li>a) Be aware of potential response routes</li><li>b) Vehicles will be responding with red lights and sirens<ul style="list-style-type: none"><li>1) Code 3</li></ul></li><li>c) Other crimes in area<ul style="list-style-type: none"><li>1) Fire as diversion</li></ul></li><li>d) Other fires in area<ul style="list-style-type: none"><li>1) Serial arsonist or civil unrest</li></ul></li><li>e) Police responding</li><li>f) Ambulances responding to and leaving the scene</li><li>g) Distracted civilian motorists</li></ul></li></ul>	<p><b>SLIDE: 3-1-10</b></p>





# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
<p data-bbox="228 375 740 409">B. Report to Incident Commander</p> <p data-bbox="305 512 665 546">1. Status of operations</p> <p data-bbox="380 581 764 615">a) Suppression activities</p> <ul style="list-style-type: none"><li data-bbox="456 648 722 682">1) Effectiveness</li><li data-bbox="456 716 959 785">2) Location where they are being conducted</li><li data-bbox="456 819 964 852">3) Method of entry by fire fighters</li></ul> <p data-bbox="380 888 716 921">b) Overhaul activities</p> <ul style="list-style-type: none"><li data-bbox="456 955 954 1024">1) Necessary at time or can it be delayed</li><li data-bbox="456 1058 959 1127">2) Additional fire being located in hidden structural areas</li></ul> <p data-bbox="380 1163 558 1197">c) Injuries</p> <ul style="list-style-type: none"><li data-bbox="456 1230 683 1264">1) Fire fighter</li><li data-bbox="456 1297 634 1331">2) Civilian</li><li data-bbox="456 1365 927 1398">3) Still on scene or transported</li><li data-bbox="456 1432 659 1465">4) Fatalities</li></ul> <p data-bbox="380 1501 1016 1570">d) Fire protection equipment and detection systems</p> <ul style="list-style-type: none"><li data-bbox="456 1604 722 1638">1) Effectiveness</li><li data-bbox="456 1671 894 1705">2) Sprinklers still operational</li><li data-bbox="456 1738 659 1772">3) High rise<ul style="list-style-type: none"><li data-bbox="532 1806 971 1839">• HVAC systems controlled</li></ul></li></ul>	<p data-bbox="1146 443 1349 476"><b>SLIDE: 3-1-13</b></p>



# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

## SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
<p>C. Assistance at scene</p> <ol style="list-style-type: none"> <li>1. Investigation not done alone               <ol style="list-style-type: none"> <li>a) Best done with two individuals                   <ol style="list-style-type: none"> <li>1) Assist each other if one is trapped or injured</li> </ol> </li> <li>b) If done alone, make proper notifications                   <ol style="list-style-type: none"> <li>1) Supervisor</li> <li>2) Communications center</li> </ol> </li> </ol> </li> <li>2. Emergency communication available               <ol style="list-style-type: none"> <li>a) Radio                   <ol style="list-style-type: none"> <li>1) Contact with fireground incident commander</li> <li>2) Contact with communication center                       <ul style="list-style-type: none"> <li>• Handheld or portable radio on person while conducting scene investigation</li> </ul> </li> </ol> </li> <li>b) Cellular phone                   <ol style="list-style-type: none"> <li>1) Provides back-up communication</li> <li>2) Radio channels overloaded</li> <li>3) Back-up for radio failure</li> </ol> </li> </ol> </li> </ol>	<p><b>SLIDE: 3-1-17</b></p> <p><b>SLIDE: 3-1-18</b></p> <p><b>SLIDE: 3-1-19</b></p>

PRESENTATION	APPLICATION
<p>3. Fireground incident commander</p> <ul style="list-style-type: none"> <li>a) Coordinate movement at scene and through structure</li> <li>b) Advise where investigators will be working</li> <li>c) Contact for additional resources               <ul style="list-style-type: none"> <li>1) Personnel to assist with debris removal at investigative site</li> </ul> </li> </ul>	<p><b>SLIDE: 3-1-20</b></p>
<p>4. Entering a burning building</p> <ul style="list-style-type: none"> <li>a) Protective equipment must be worn</li> <li>b) SCBA mandatory for hazardous environment</li> <li>c) Accompanied by suppression personnel</li> <li>d) Know egress routes</li> </ul>	
<p>5. Rekindle potential</p> <ul style="list-style-type: none"> <li>a) Hose lines left in place until mitigated</li> </ul>	<p><b>SLIDE: 3-1-21</b></p>
<p>6. Utility hazards must be mitigated</p> <ul style="list-style-type: none"> <li>a) Electric service (power)               <ul style="list-style-type: none"> <li>1) If necessary cut at power pole or street service by power utility personnel</li> </ul> </li> <li>b) Gas               <ul style="list-style-type: none"> <li>1) Confirm shut-off</li> </ul> </li> </ul>	

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2) Utility personnel</li> <li>3) Maintain custody or control of meter until evaluated for involvement in fire cause</li> <li>c) Water               <ul style="list-style-type: none"> <li>1) Shut-off to limit additional water damage</li> <li>2) Shut-off to decrease potential load on fire weakened structure</li> </ul> </li> </ul>	<p><b>SLIDE: 3-1-22</b></p>
<p><b>IV. ASSESSING OTHER SCENE HAZARDS</b></p> <p>A. Crime scene</p> <ul style="list-style-type: none"> <li>1. Perpetrator still on scene or potential of returning to scene</li> <li>2. Accomplices still on scene</li> <li>3. Police assistance</li> <li>4. Personal protection           <ul style="list-style-type: none"> <li>a) Proper training for physical restraint</li> <li>b) Weapon, if authorized and properly trained</li> <li>c) Handcuffs or appropriate restraints, if properly trained</li> </ul> </li> </ul>	

PRESENTATION	APPLICATION
<p>B. Animals</p> <ol style="list-style-type: none"> <li>1. Dogs and cats               <ol style="list-style-type: none"> <li>a) Bites                   <ol style="list-style-type: none"> <li>1) Hold for rabies examination</li> </ol> </li> <li>b) Threatened by fire scene activities</li> </ol> </li> <li>2. Exotic pets               <ol style="list-style-type: none"> <li>a) Snakes and other reptiles</li> <li>b) Insects</li> </ol> </li> <li>3. Consider animal control officer assistance</li> </ol> <p>C. Infectious diseases</p> <ol style="list-style-type: none"> <li>1. Body fluid protection               <ol style="list-style-type: none"> <li>a) Infectious materials</li> <li>b) Human immunodeficiency virus (HIV)</li> <li>c) Acquired immune deficiency syndrome (AIDS)</li> <li>d) Hepatitis</li> </ol> </li> </ol> <p>D. Hazardous materials</p> <ol style="list-style-type: none"> <li>1. NFPA 704 Standard system for the identification of the hazards of materials for emergency response</li> <li>2. Health, flammability, and reactivity ratings for NFPA 704</li> <li>3. Illegal drugs labs and associated chemicals</li> </ol>	<p><b>SLIDE: 3-1-23</b></p>





# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

## SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
<ul style="list-style-type: none"><li>3. Use periodic rest periods</li><li>4. Fluid replacement (hydrate)</li><li>5. Nourishment</li></ul> <p>G. Wildland fires</p> <ul style="list-style-type: none"><li>1. Heavy equipment (dozer)</li><li>2. Aircraft (retardant drops)</li><li>3. Animals</li><li>4. Trees, logs, rocks<ul style="list-style-type: none"><li>a) Rolling down hill</li><li>b) Dislodged</li></ul></li><li>5. Poisonous plants<ul style="list-style-type: none"><li>a) Contact</li><li>b) Irritant smoke</li></ul></li><li>6. Wind shift<ul style="list-style-type: none"><li>a) Change direction of fire</li><li>b) Knock over damaged trees</li></ul></li><li>7. Know what fire is doing<ul style="list-style-type: none"><li>a) Post look outs</li></ul></li></ul>	<p><b>SLIDE: 3-1-27</b></p>



# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
<p>H. Vehicle fires</p> <ol style="list-style-type: none"><li>1. Fuel tanks</li><li>2. Shocks and struts<ol style="list-style-type: none"><li>a) Over pressurized</li><li>b) Can become projectile</li></ol></li><li>3. Battery acid<ol style="list-style-type: none"><li>a) Corrosive</li></ol></li><li>4. Sharp edges, broken glass<ol style="list-style-type: none"><li>a) Use gloves</li></ol></li><li>5. Vehicle may move<ol style="list-style-type: none"><li>a) Brakes nonfunctioning</li><li>b) Transmission failure</li><li>c) Block wheels</li></ol></li><li>6. Air bags<ol style="list-style-type: none"><li>a) Delayed deployment</li><li>b) Deactivated</li><li>c) Multiple locations in different car models</li></ol></li></ol>	<p><b>SLIDE: 3-1-28</b></p>





# FIRE INVESTIGATION 1A

Techniques of Fire Investigation

SCENE SAFETY FOR INVESTIGATORS

PRESENTATION	APPLICATION
<p>C. Scene perimeter provides safety for civilians</p> <ol style="list-style-type: none"><li>1. Outside operations area</li><li>2. In most cases, maintained by police personnel</li><li>3. Area for media</li><li>4. Demarcate boundaries<ol style="list-style-type: none"><li>a) Use fire scene or police scene perimeter tape (high visibility yellow)</li><li>b) Barricades and vehicles used on perimeter</li></ol></li></ol>	<p><b>SLIDE: 3-1-31</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE SAFETY FOR INVESTIGATORS

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## ***SUMMARY:***

The fire scene investigation must be carried out thoroughly, professionally, and safely. The investigator must be able to recognize potentially hazardous conditions and take the appropriate action and protection to mitigate the danger. The investigator must be able to properly use the provided safety equipment.

## ***EVALUATION:***

The student will complete a written quiz at a time determined by the instructor.

## ***ASSIGNMENT:***

Review your notes and read Chapter 3-1 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

UNIT 3: SCENE EXAMINATION

**TOPIC:** POST-BLAST INVESTIGATION

**TIME FRAME:** 1:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz

*Behavior:* The student will confirm a knowledge of the basic steps to follow to conduct a safe and thorough investigation of a post-blast scene by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 3-2, pages 35-42

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Explosive Recognition and Reconnaissance, Student Manual, California State Fire Marshal's Office, 1991
- NFPA 921 Guide for Fire and Explosion Investigations, NFPA, 1998 Edition

**PREPARATION:**

There are direct parallels between the methodology used to investigate fire scenes and bombing scenes. Often determining which was the primary event and which was the result not evident until well into the investigation.





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

POST-BLAST INVESTIGATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"><li>F. Bureau of Alcohol, Tobacco &amp; Firearms</li><li>G. U.S. Postal Inspection Service</li><li>H. Allied agencies<ul style="list-style-type: none"><li>1. EMS</li><li>2. Coroner/medical examiner</li><li>3. Military EOD (Explosive Ordnance Disposal)</li><li>4. Explosive detector canines</li><li>5. USAR (Urban Search &amp; Rescue Teams)</li><li>6. Public works</li><li>7. Building department engineers and inspectors</li></ul></li></ul>	<p><b>SLIDE: 3-2-4</b></p>
<p><b>III. INHERENT DANGERS AT POST-BLAST SCENES</b></p> <ul style="list-style-type: none"><li>A. Secondary devices</li><li>B. Unexploded devices or explosives</li><li>C. Other boobytraps</li><li>D. Damaged infrastructure<ul style="list-style-type: none"><li>1. Structural instability</li><li>2. Exposed/downed electrical lines</li><li>3. Broken/leaking gas mains</li></ul></li><li>E. Hazardous materials releases</li><li>F. Biological hazards</li></ul>	<p><b>SLIDE: 3-2-5</b></p>







# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

POST-BLAST INVESTIGATION

PRESENTATION	APPLICATION
<ol style="list-style-type: none"> <li>4. Identify specialized equipment needed               <ol style="list-style-type: none"> <li>a) Sifting screens</li> <li>b) Metal detectors</li> <li>c) Magnets</li> <li>d) Marker flags</li> <li>e) "Normal" evidence collection equipment</li> </ol> </li> <li>5. Organize search               <ol style="list-style-type: none"> <li>a) Grid pattern</li> <li>b) Spiral</li> <li>c) Quadrant or zone</li> <li>d) Strip or line</li> </ol> </li> <li>6. Search should start at the perimeter and work into the "seat" of the blast</li> <li>7. Potential components of the device should be marked, as they are located               <ol style="list-style-type: none"> <li>a) Specific components such as portions of the "firing train" should be plotted and collected individually</li> <li>b) Large quantities of like material (i.e., pieces of the container the device was in) can be collected together</li> </ol> </li> </ol>	<p style="text-align: center;"><b>SLIDE: 3-2-13</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

POST-BLAST INVESTIGATION

PRESENTATION	APPLICATION
<p>8. Process the “seat” of the explosion last</p> <ul style="list-style-type: none"><li>a) Collect fragments/components of the device<ul style="list-style-type: none"><li>1) May require digging and sifting of the area, depending upon the surface</li></ul></li><li>b) Sweep for residual explosive powders</li><li>c) Swab for explosive residue<ul style="list-style-type: none"><li>1) Acetone on sterile gauze</li></ul></li><li>d) Document size and depth of crater</li><li>e) Look for evidence of burning fuse</li></ul> <p>9. Document all blast damage</p> <p><b>VII. QUESTIONS TO BE ANSWERED</b></p> <ul style="list-style-type: none"><li>A. What was the nature of the explosion?</li><li>B. If it was a bombing, what materials were used to construct the device?</li><li>C. How was the device constructed?</li><li>D. What initiated the device?</li><li>E. Who/what was the target of the bombing?</li><li>F. Where was the device placed?</li><li>G. How did the suspect access and place the device?</li></ul>	<p><b>SLIDE: 3-2-14</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

POST-BLAST INVESTIGATION

## PRESENTATION

## APPLICATION

### VIII. EVIDENCE FROM VICTIMS

- A. All victims (dead or alive) may be a source of evidence
- B. Full x-rays of deceased victims are essential
- C. Components of the device, and explosive residue, may be in the victim's body and/or clothing
- D. Wounds can indicate the position of the victim to the bomb

**SLIDE: 3-2-15**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

POST-BLAST INVESTIGATION

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## ***SUMMARY:***

There are direct parallels between the methodology used to investigate fire scenes and bombing scenes. Often determining which was the primary event and which was the result not evident until well into the investigation.

## ***EVALUATION:***

The student will complete a written quiz at a time determined by the instructor.

## ***ASSIGNMENT:***

Review your notes and read Chapter 3-2 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

# ATF

## VEHICLE BOMB

### EXPLOSION HAZARD AND EVACUATION DISTANCE TABLES

DEPARTMENT OF THE TREASURY      BUREAU OF ALCOHOL, TOBACCO AND FIREARMS

IF YOU SUSPECT UNLAWFUL POSSESSION OR USE OF EXPLOSIVES OR BOMBS  
CALL 1-888-ATF-BOMB OR YOUR LOCAL  
ATF OFFICE FOR ASSISTANCE

- Minimum evacuation distance is the range at which a life-threatening injury from blast or fragment hazards is unlikely. However, non life-threatening injury or temporary hearing loss may occur.
- Hazard ranges are based on open, level terrain.
- Minimum evacuation distance may be less when explosion is confined within a structure.
- Falling glass hazard range is dependent on line-of-sight from explosion source to window. Hazard is from falling shards of broken glass.
- Metric equivalent values are mathematically calculated.
- Explosion confined within a structure may cause structural collapse or building debris hazards.
- Additional hazards include vehicle debris.

This information was developed with data from the Dipole Might vehicle bomb research program conducted by ATF, with technical assistance from the U.S. Army Corps of Engineers. Goals for Dipole Might include creating a computerized database and protocol for investigating large-scale vehicle bombs. Dipole Might is sponsored by the Technical Support Working Group (TSWG). TSWG is the research and development arm of the National Security Council Interagency-working group on counterterrorism.

VEHICLE BOMB EXPLOSION HAZARD AND EVACUATION DISTANCE TABLES					
ATF	VEHICLE DESCRIPTION	MAXIMUM EXPLOSIVES CAPACITY	LETHAL AIR BLAST RANGE	MINIMUM EVACUATION DISTANCE	FALLING GLASS HAZARD
	COMPACT SEDAN	500 Pounds 227 Kilos ( <i>In Trunk</i> )	100 Feet 30 Meters	1,500 Feet 457 Meters	1,250 Feet 381 Meters
	FULL SIZE SEDAN	1,000 Pounds 455 Kilos ( <i>In Trunk</i> )			
	PASSENGER VAN OR CARGO VAN	4,000 Pounds 1,818 Kilos	200 Feet 91 Meters	2,750 Feet 838 Meters	2,750 Feet 838 Meters
	SMALL BOX VAN (14 FT BOX)	10,000 Pounds 4,545 Kilos	300 Feet 91 Meters	3,750 Feet 1,143 Meters	3,750 Feet 1,143 Meters
	BOX VAN OR WATER/FUEL TRUCK	30,000 Pounds 19,636 Kilos	450 Feet 137 Meters	6,500 Feet 1,982 Meters	6,500 Feet 1,982 Meters
	SEMI TRAILER	60,000 Pounds 27,273 Kilos	600 Feet 183 Meters	7,000 Feet 2,134 Meters	7,000 Feet 2,134 Meters

# ATF

## Guidelines for the Prevention of Contamination of Explosives Evidence

Bureau of Alcohol, Tobacco and Firearms Forensic Science Laboratory

### Sources of Contamination

Explosives and explosive residues on hands, tools, clothing, and footwear can be carried away from:

- The explosives or the firearms range
- Bomb scenes and warrant scenes
- Any location where bulk explosives are present

### To Prevent Contamination, Actual and Alleged

- Package evidence to be tested for explosive residue in vapor tight containers (i.e., cans)
- Wear disposable gloves
- Wear clean clothing and boots or
- Wear Tyvek suits and boot covers
- Use new or disposable tools or
- Use decontaminated tools

### Decontamination Procedures

- Scrub tools with soap and water and rinse with alcohol
- Scrub footwear with soap and water and inspect visually
- Machine wash or dry clean clothing

### Special Situations

Exposure to bulk explosives (e.g., Range, RSPs)

- Following exposure to bulk explosives, clothing, footwear and tools cannot be effectively decontaminated
- Have two sets of gear, one designated for bulk explosives situations and a second for scenes
- Isolate contaminated gear

If you have any questions regarding the proper decontamination procedures call 1-888-ATF-LABS

Developed from a series of tests conducted in conjunction with the Dipole Might Vehicle Bomb Research Program, a project funded by the Technical Support Working Group (TSWG).

Guidelines for the Prevention of Contamination of Explosives Evidence					
Scene Type	Boots	Clothing	Tools Use disposable If possible	Hands	Evidence
<b>Decontamination Procedures</b>					
Post blast -low explosives -pipe bombs	Scrub with soap & water; Inspect visually	Machine wash or dry-clean	Scrub with soap & water, then rinse with alcohol	Wear disposable gloves	Collect evidence with disposable gloves
Post blast -high explosives	Scrub with soap & water; Inspect visually	Machine wash or dry-clean	Use disposable tools if possible	Wear disposable gloves	Collect evidence with disposable gloves
<b>Contamination Prevention</b>					
Search warrant -low explosives	Wear clean boots or Boot covers	Wear clean clothing or Tyvek Suits	Scrub with soap & water, then rinse with alcohol	Wear disposable gloves	Collect evidence with disposable gloves & change gloves with each exhibit. Package in vapor tight containers
Search warrant -high explosives			Use disposable tools if possible	Wear disposable gloves	
<b>No Effective Decontamination</b>					
Explosives range work -bulk explosives -RSP's	Wear designated "range boots"	Wear designated "range apparel"	Use designated "range tools"	"Range gloves" or disposable gloves	Never package bulk explosives with post-blast or warrant evidence

**TOPIC:** SCENE PHOTOGRAPHY

**TIME FRAME:** 2:00

**LEVEL of INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz and student activity

*Behavior:* The student will confirm a knowledge of scene photography by completing the written quiz and student activity

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 4-1, pages 43-48

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- Activity Sheets 4-3-2 through 4-3-8

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- NFPA 921 Guide for Fire and Explosion Investigations, NFPA, 1998 Edition

**PREPARATION:**

Except for actual physical evidence, photographs are the best representation of the fire scene before it has been disturbed. Investigators must understand the benefit and limitations of cameras



## PRESENTATION

## APPLICATION

## I. PHOTOGRAPHING THE FIRE SCENE

## A. Film cameras

1. Adjustable
  - a) Offers best quality and versatility
  - b) 35mm
    - 1) SLR (single lens reflex)
2. Nonadjustable
  - a) Not recommended
  - b) Polaroid camera
    - 1) Advantage
      - Produces immediate results
    - 2) Disadvantages
      - Expensive
      - Limited versatility under fire scene condition

What are some of the various cameras available?

**SLIDE: 4-1-1**

What are some disadvantages of a nonadjustable box camera?

PRESENTATION

APPLICATION

B. Flash equipment

1. Fire scene photography requires the use of flash equipment
2. Should have enough power to provide adequate fire scene exposure
3. Automatic flash equipment features simplicity and accuracy
4. The investigator should experiment with the camera and flash equipment to establish best fire scene exposure

**SLIDE: 4-1-2**

C. Taking the picture

1. Consider entire picture
  - a) Check area around object of interest (object of importance)
  - b) Observe entire scene before taking picture
  - c) Photograph subject undisturbed
    - 1) Before outlining in chalk
    - 2) Before inserting ruler, coins, etc.
  - d) Check for background light
    - 1) Doors
    - 2) Windows

**SLIDE: 4-1-3**



# FIRE INVESTIGATOR 1B

Techniques of Fire Investigation

## SCENE PHOTOGRAPHY

### PRESENTATION

### APPLICATION

2. Frame the picture
  - a) Helps to develop a feeling of depth to picture
  - b) Ability to frame may be limited when photographing evidence or crime scene
  - c) Helps to keep viewer's attention on picture
  - d) Move-in, camera sees more than what's in the viewfinder
  
3. Rule of three
  - a) Shoot object from a distance
  - b) Shoot object halfway to object
  - c) Shoot object
  
4. Bracket exposures
  - a) Exposure (light meter/camera reading) may be questionable when photographing fire scenes

What should be in the photo?

**SLIDE: 4-1-4**

**SLIDE: 4-1-5**

**SLIDE: 4-1-6**



# FIRE INVESTIGATOR 1B

Techniques of Fire Investigation

## SCENE PHOTOGRAPHY

### PRESENTATION

### APPLICATION

- b) Pictures taken at indicated setting can be bracketed by taking pictures at least one setting above and one exposure below indicated setting
  - 1) Above and below setting are usually taken at same shutter speed as the original
- c) Helps to eliminate mistakes or loss of photographic evidence

## II. DOCUMENTATION AND STORAGE OF PHOTOGRAPHS AND NEGATIVES

### A. Fire scene procedures

1. Record the following on a standard form
  - a) Case number
  - b) Date
  - c) Time
  - d) Location
  - e) Description of scene photographed
  - f) Photographer and/or investigator
2. Properly established chain of photographic evidence

What information should be included to document photography?

**SLIDE: 4-1-7**



PRESENTATION

APPLICATION

**IV. VIDEO/DIGITAL PHOTOGRAPHY**

A. Video

1. Use a blank tape
  - a) Never add to existing film
2. Do not record sound
  - a) Place a jack in auxiliary microphone jack to cancel
  - b) Background noise
3. Do not move or pan quickly
  - a) Take your time
4. Color balance may be adequate
  - a) Fire scenes are often dark
  - b) Light colored clothing (turnouts) may affect color balance
5. Bulky storage

B. Digital

1. Advantages
  - a) Easy to add to word processed document
  - b) Saves on printing cost
    - 1) You only print cases as needed

**SLIDE: 4-1-10**

**SLIDE: 4-1-11**



# FIRE INVESTIGATOR 1B

Techniques of Fire Investigation

SCENE PHOTOGRAPHY

**PRESENTATION**

**APPLICATION**

2. Should have means to preserve download as unalterable file to serve as equivalent of a negative
3. Check with District Attorney's office about acceptance in local court system
  - a) Limited number of high quality photos before downloading necessary
4. Require large computer storage area for files
5. Built-in flash may be inadequate

Complete Activity Sheets 4-3-2 through 4-3-8 after the Trace Evidence session.



# FIRE INVESTIGATOR 1B

Techniques of Fire Investigation

SCENE PHOTOGRAPHY

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## ***SUMMARY:***

Accurate, complete documentation is of prime importance for fire investigation reporting. Photographs must contain all pertinent information relating to the incident scene.

## ***EVALUATION:***

The student will complete the written quiz and student activities at a time determined by the instructor.

## ***ASSIGNMENT:***

Review your notes and read Chapter 4-1 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

**TOPIC:** EVIDENCE RECOGNITION, DOCUMENTATION, AND PRESERVATION

**TIME FRAME:** 4:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz and student activity

*Behavior:* The student will confirm a knowledge of evidence recognition, documentation, and preservation by completing the written quiz and student activity

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 4-2, pages 49-68

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- Activity Sheets 4-3-1 through 4-4-8
- Examples/samples of various evidence containers
- Preservation materials

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Physical Evidence Bulletins, California Department of Justice, Division of Law Enforcement, Investigative Services Branch
- California Criminalistic Institute
- Kirk's Fire Investigation, John DeHaan, Brady Prentice Hall, 4<sup>th</sup> Edition, 1997

**PREPARATION:**

Evidence collection involves a series of systematic steps, all very important in preserving the evidence for courtroom use. These steps include recognition, documentation, collecting, marking, and packaging. In the following lesson, we will be exploring the various methods and techniques you must use to guarantee admissible courtroom evidence.





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<p>D. Types of evidence</p> <ol style="list-style-type: none"><li>1. Direct evidence<ol style="list-style-type: none"><li>a) Evidence that directly proves a fact without any inference or presumption and which, in itself (if true), conclusively establishes that fact</li></ol></li><li>2. Circumstantial evidence<ol style="list-style-type: none"><li>a) Based on analysis and interpretation of circumstances and facts</li></ol></li><li>3. Testimonial evidence<ol style="list-style-type: none"><li>a) The method of establishing facts through the questioning of witnesses in open court</li><li>b) The oral transmission of information from witness to jury</li><li>c) Most evidence in criminal trials is in the form of testimonial evidence</li></ol></li><li>4. Physical evidence<ol style="list-style-type: none"><li>a) A tangible "thing" in solid, liquid, or gaseous state that can be the subject of scientific inspection</li></ol></li></ol>	<p><b>SLIDE: 4-2-3</b></p>

# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<p>E. Roles evidence can play</p> <ol style="list-style-type: none"> <li>1. Associative           <ol style="list-style-type: none"> <li>a) Physical evidence after being examined and tested in a criminalistic laboratory that connects the accused to the crime scene in some manner               <ol style="list-style-type: none"> <li>1) Fibers or hairs at scene, similar to those on suspect</li> </ol> </li> </ol> </li> <li>2. Corroborative           <ol style="list-style-type: none"> <li>a) Testing and interpretation reveal information consistent with that from another source               <ol style="list-style-type: none"> <li>1) Signs of forcible entry on door agree with eyewitness</li> </ol> </li> </ol> </li> <li>3. Exclusionary           <ol style="list-style-type: none"> <li>a) Eliminates suspected source, tool, or individual because of major differences in class or individual characteristics               <ol style="list-style-type: none"> <li>1) Tool, tire, or fingerprints not same as suspect</li> </ol> </li> </ol> </li> <li>4. Reconstructive           <ol style="list-style-type: none"> <li>a) Analysis and interpretation allows the logical sequence of activity or circumstances to be estimated               <ol style="list-style-type: none"> <li>1) Melted furniture and char depth indicate point of origin and direction of travel</li> </ol> </li> </ol> </li> </ol>	<p><b>SLIDE: 4-2-4</b></p>

# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<p>5. Investigative</p> <ul style="list-style-type: none"> <li>a) Some evidence just by its informative nature may reveal new lead to the investigator               <ul style="list-style-type: none"> <li>1) Incendiary device used on one pint milk bottle wrapped with green flannel shirt</li> </ul> </li> </ul> <p>F. Rules of evidence</p> <ul style="list-style-type: none"> <li>1. The evidence must be relevant               <ul style="list-style-type: none"> <li>a) A traceable and significant connection between facts offered in evidence and the issue to be proved</li> </ul> </li> <li>2. The evidence must be material               <ul style="list-style-type: none"> <li>a) Important or substantial and capable of properly influencing the outcome of the trial</li> </ul> </li> <li>3. The witness must be competent               <ul style="list-style-type: none"> <li>a) Anyone who can perceive and communicate their perceptions can be a witness, with certain statutory exceptions                   <ul style="list-style-type: none"> <li>1) Incapable of expressing themselves (Evidence Code 701)</li> <li>2) Incapable of understanding the duty of a witness</li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 4-2-5</b></p> <p>What is the definition of “relevant?”</p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<p>G. Evidence required to prove arson or reckless burning (proven beyond a reasonable doubt)</p> <ol style="list-style-type: none"><li>1. That a fire or burning did in fact occur</li><li>2. That fire or burning was due to either a reckless or unlawful act</li></ol> <p>H. Major problems with arson evidence</p> <ol style="list-style-type: none"><li>1. Evidence is destroyed by crime's progress rather than created</li><li>2. Search must be made at every fire before there is any proof of a criminal act</li><li>3. Evidence can be contaminated prior to being discovered and collected<ol style="list-style-type: none"><li>a) By fire personnel during extinguishment and overhaul</li><li>b) By returning occupants</li><li>c) By investigators</li></ol></li><li>4. Evidence may be contaminated or lost by exposure to the atmosphere<ol style="list-style-type: none"><li>a) Flammable liquids must be sealed in an airtight container</li><li>b) Rain or snow can dilute or wash away accelerant or chemical incendiary residues</li></ol></li></ol>	<p><b>SLIDE: 4-2-6</b></p>

# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>5. Evidence may be contaminated by the storage container               <ul style="list-style-type: none"> <li>a) Residue in the container from prior use</li> <li>b) Flammable vapors/liquids may deteriorate the container or a portion thereof</li> </ul> </li> <li>6. Cross contamination               <ul style="list-style-type: none"> <li>a) Change gloves each time liquid or solid accelerant evidence is collected</li> <li>b) Clean tools before subsequent evidence collection</li> <li>c) Do not use waterless or volatile solvent cleaners</li> <li>d) ATF recommends "Dawn" brand liquid dish soap</li> </ul> </li> <li>I. Recognition of evidence               <ul style="list-style-type: none"> <li>1. All indicators of incendiary, accidental fire causes are evidence</li> <li>2. The entire fire scene may provide various forms/types of evidence</li> <li>3. The investigator may be capable of recognizing kinds of evidence</li> </ul> </li> <li>J. Evidence documentation               <ul style="list-style-type: none"> <li>1. Once an object or a substance has been recognized as evidence, it must then be properly documented and preserved if it is to remain valuable</li> </ul> </li> </ul>	<p style="text-align: center;"><b>SLIDE: 4-2-7</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<p>3) Size and weight limitations are set by the storage facility available</p> <ul style="list-style-type: none"> <li>• Very large or heavy items may have to be photographed, samples taken, and left</li> <li>• Large items may require outside storage</li> </ul> <p>4) Liquid, solid, or gaseous evidence will dictate how evidence is removed</p> <p>b) Avoid additional damage</p> <p>1) Removal may cause unavoidable additional damage</p> <ul style="list-style-type: none"> <li>• Burned documents</li> <li>• Tire print casts</li> </ul> <p>2) Record reasons for such damage</p> <p>6. Marking physical evidence</p> <p>a) Small items should be placed in marked containers without marking the item</p> <p>b) Larger items should be tagged as evidence</p> <p>c) May also be marked by a personal mark of the investigator for later reference during court testimony</p> <p>1) Monetary value of the item must be considered</p>	<p><b>SLIDE: 4-2-10</b></p>

PRESENTATION	APPLICATION
<p>2) The personal identification mark should be located in a remote or unseen area</p> <p>3) Make sure the investigator can remember where the “mark” was put</p> <ul style="list-style-type: none"> <li>• If it’s too well hidden, you could have problems</li> <li>• If in doubt about later identification of mark location, note the location in field notes</li> </ul> <p>d) Tags, labels, and containers must include basic information concerning the incident under investigation and should follow local policies</p> <ol style="list-style-type: none"> <li>1) Incident number</li> <li>2) Date evidence collected</li> <li>3) Identity of the finder</li> <li>4) Location where found</li> <li>5) Brief description of evidence</li> <li>6) Identity of individual collecting evidence</li> <li>7) Where evidence went for storage</li> <li>8) Who received evidence from investigator</li> </ol>	<p><b>SLIDE: 4-2-11</b></p> <p>What information should be on an evidence tag?</p>

PRESENTATION	APPLICATION
<p>K. Evidence collection (general principles)</p> <ol style="list-style-type: none"> <li>1. Have a reason for identifying item as evidence and reason for taking</li> <li>2. Limit the number of individuals collecting the evidence (one individual is best)</li> <li>3. Use the right evidence container               <ol style="list-style-type: none"> <li>a) Use only containers that can be sealed with tape, staples, or adhesive to avoid any loss or contamination</li> </ol> </li> <li>4. Do not put damp or biological evidence in plastic bags               <ol style="list-style-type: none"> <li>a) Allow to dry, then put it in paper</li> </ol> </li> </ol> <p><b>NOTE:</b> Display a collection of various evidence containers.</p> <ol style="list-style-type: none"> <li>b) Plastic or cellophane envelopes are suitable only for small, <u>dry</u> objects</li> <li>c) Paper envelopes               <ol style="list-style-type: none"> <li>1) Suitable for small items</li> <li>2) Do not use for powders or fiber evidence, a vial or pill box is preferred</li> <li>3) Seal completely including corners and seams</li> <li>4) Use folded paper bundle for powders, flakes, or small fibers, if needed</li> </ol> </li> <li>d) Vials, pill boxes, capsules, and similar containers</li> </ol>	<p><b>SLIDE: 4-2-12</b></p>

# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>e) Variety of paper bags (grocery bags are very good)</li> <li>f) Large items can also be wrapped in paper then sealed with tape</li> <li>g) Boxes</li> <li>5. Always use clean and new containers to prevent contamination</li> <li>6. Seal containers once evidence is placed inside (this may require evidence tape; don't depend on evidence tape for structural strength)</li> <li>L. Collection of volatile or flammable liquids and/or residues               <ul style="list-style-type: none"> <li>1. Plastic containers                   <ul style="list-style-type: none"> <li>a) Must be avoided</li> <li>b) Vapors may escape through the plastic</li> <li>c) Evidence may be contaminated by deterioration of the container</li> </ul> </li> <li>2. Glass containers                   <ul style="list-style-type: none"> <li>a) Should only be used when a metal container is unavailable or inadequate</li> <li>b) Container may be dropped and break</li> <li>c) Vapors may leak away due to improper seals</li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 4-2-13</b></p> <p>Why? What are some of the problems associated with such containers?</p>

# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<p>3. Nylon or polyester bags</p> <ul style="list-style-type: none"> <li>a) If properly sealed, contain all vapors</li> <li>b) Accommodate larger items</li> <li>c) Strong and convenient</li> <li>d) Inexpensive but may require heat sealer</li> </ul> <p>4. Metal containers</p> <ul style="list-style-type: none"> <li>a) Must be new and unused               <ul style="list-style-type: none"> <li>1) Seal cans immediately after receipt from supplier to prevent contamination</li> </ul> </li> <li>b) One gallon or one quart unused paint cans are recommended</li> <li>c) Lined or unlined cans okay               <ul style="list-style-type: none"> <li>1) If using a lined can, provide an empty can for a comparison sample</li> </ul> </li> <li>d) Susceptible to rust-through, can use open nylon or polyester bag as liner</li> <li>e) Tape seals may be used for evidence other than accelerant residue (this does not include placing of evidence tape)</li> <li>f) Accelerant residue containers must provide an air-tight seal</li> </ul> <p>5. Aluminum foil</p> <ul style="list-style-type: none"> <li>a) May be used to seal vapor contained in very large samples</li> <li>b) Very fragile, easily torn</li> </ul>	

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>c) Very difficult to adequately seal</li> <li>d) Use only as last resort</li> </ul> <p>6. Collection of liquid samples</p> <ul style="list-style-type: none"> <li>a) Evaporation and spillage must be prevented</li> <li>b) Although only a small amount is required for most lab tests, collect as much of the liquid as is conveniently possible</li> <li>c) Recover liquid sample by using either a syringe, clean cloth, or sponge</li> <li>d) Place evidence in small glass jar or another type of container designed for such use</li> <li>e) Include item used to pick-up sample, if possible</li> </ul> <p>7. Collection of item/debris suspected of containing flammable liquid residue</p> <ul style="list-style-type: none"> <li>a) Place debris in an approved container</li> <li>b) If a can or jar is used, fill to <math>\frac{3}{4}</math> full if possible, leaving some air space</li> <li>c) Collect and place in separate container a control sample of the material absorbing the liquid               <ul style="list-style-type: none"> <li>1) This sample should not contain any of the suspected flammable liquid residue</li> </ul> </li> </ul>	<p>What kind of factors must be considered when collecting liquid samples?</p>



PRESENTATION	APPLICATION
<p>N. Storage of collected fire scene evidence</p> <ol style="list-style-type: none"> <li>1. Storage by law enforcement agency is usually best since they typically have an evidence locker or room and a prescribed chain of custody system already in place               <ol style="list-style-type: none"> <li>a) Provides “secure” storage                   <ol style="list-style-type: none"> <li>1) Controlled access</li> <li>2) Standard documentation</li> <li>3) Physical protection</li> </ol> </li> <li>b) More readily acceptable to courts</li> </ol> </li> <li>2. Storage in the investigator’s office only as a last resort               <ol style="list-style-type: none"> <li>a) Storage should be in a locked cabinet located in a locked, limited access office</li> <li>b) Proof of security is often difficult</li> <li>c) If evaporation is a consideration, place in refrigerator/freezer until delivery to laboratory</li> </ol> </li> <li>3. All evidence should be stored in a cool, dry storage area to minimize deterioration</li> <li>4. Biological evidence (including blood stains, tissue, and hair) should be kept frozen</li> </ol> <p>O. Time requirements for retaining evidence</p> <ol style="list-style-type: none"> <li>1. Evidence may be stored for years prior to trial</li> <li>2. Some evidence has a finite life time due to decomposition, reactivity, diffusion</li> </ol>	<p style="text-align: right;"><b>SLIDE: 4-2-16</b></p>

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>3. Evidence is usually retained until the statute of limitations has expired               <ul style="list-style-type: none"> <li>a) California – three to six years depending on the criminal offense</li> <li>b) No statute of limitations for a murder/homicide crime</li> </ul> </li> <li>4. Local policy must be consulted               <ul style="list-style-type: none"> <li>a) If used in court may require court approval for disposal</li> </ul> </li> </ul>	<p><b>SLIDE: 4-2-17</b></p>
<p><b>II. LABORATORY SERVICES</b></p> <ul style="list-style-type: none"> <li>A. Available through           <ul style="list-style-type: none"> <li>1. California Department of Justice (DOJ)               <ul style="list-style-type: none"> <li>a) Evidence submitted to DOJ labs from areas having their own city or county labs must be forwarded or approved by the lab having jurisdiction</li> </ul> </li> <li>2. Local law enforcement agencies               <ul style="list-style-type: none"> <li>a) Police department</li> <li>b) Sheriff's department</li> </ul> </li> <li>3. Bureau of Alcohol, Tobacco and Firearms (West coast lab located in San Francisco Bay Area)</li> <li>4. Federal Bureau of Investigation (lab located in Washington D.C.)</li> </ul> </li> </ul>	

PRESENTATION	APPLICATION
<p>B. Two types of services may be available</p> <ol style="list-style-type: none"> <li>1. Crime scene assistance               <ol style="list-style-type: none"> <li>a) Search</li> <li>b) Photographs</li> <li>c) Latents</li> </ol> </li> <li>2. Laboratory examinations</li> </ol> <p>C. Crime scene assistance</p> <ol style="list-style-type: none"> <li>1. California Department of Justice               <ol style="list-style-type: none"> <li>a) Laboratory personnel may respond at the request of the local agency</li> <li>b) Proper criteria and procedure must be followed                   <ol style="list-style-type: none"> <li>1) Major fire involving loss of life</li> <li>2) Contact lab, before need, to determine what services are available</li> </ol> </li> </ol> </li> <li>2. Federal agencies               <ol style="list-style-type: none"> <li>a) Will automatically enter case when federal crime is involved or when federal agency has jurisdiction</li> <li>b) Can be requested to assist by local agency</li> <li>c) May have canine accelerant detector available</li> </ol> </li> <li>3. Local laboratories, county, city</li> </ol>	<p><b>SLIDE: 4-2-18</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<p>1) Element content</p> <ul style="list-style-type: none"> <li>• X-ray analysis</li> <li>• Emission spectography</li> <li>• Scanning electron microscopy</li> <li>• Useful on paint, glass, soil, chemical incendiaries</li> </ul> <p>2) Chemical structure (more definitive than chemical tests)</p> <ul style="list-style-type: none"> <li>• Infrared spectrometry</li> <li>• Ultra-violet spectrometry</li> <li>• Gaschromatography/mass spectrometry (GS/MS)</li> </ul> <p>--Sample of material is injected into a heated column</p> <p>d) Five methods used to obtain sample</p> <ol style="list-style-type: none"> <li>1) Head space</li> <li>2) Steam distillation</li> <li>3) Solvent wash</li> <li>4) Carbon trapping</li> <li>5) Liquid</li> </ol> <p>e) Data on volatilities ranges and proportions in hydrocarbon mixtures can be compared against knowns and standards</p>	<p><b>SLIDE: 4-2-21</b></p>

# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

EVIDENCE RECOGNITION,  
DOCUMENTATION, AND PRESERVATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>1) Boiling point</li> <li>2) Melting point</li> <li>3) Flash point</li>   <li>6. Other laboratory testing               <ul style="list-style-type: none"> <li>a) Latent fingerprinting comparisons                   <ul style="list-style-type: none"> <li>1) Can be recovered from some burned or charred surface by photography or chemical treatment and subsequent photography</li> <li>2) Chemical treatment laser enhancement and photography</li> <li>3) Can yield positive identification</li> <li>4) Now automated in California for major crimes or repeat offenders</li> </ul> </li> <li>b) Questioned document exams                   <ul style="list-style-type: none"> <li>1) Authenticity (dating)</li> <li>2) Authorship (who)</li> <li>3) Ink and paper comparisons</li> <li>4) Alterations</li> </ul> </li> <li>c) Polygraph</li> </ul> </li> </ul>	<p>What are some examples of laboratory testing?</p> <p><b>SLIDE: 4-2-22</b></p>



## ***SUMMARY:***

Evidence is used to establish if a crime was committed, elements of crime and potential suspect. Fire investigators must be able to properly utilize evidence, differentiate between types of evidence, and be familiar with the Theory of Transfer. When collecting evidence, you must follow an orderly system that insures that the collected evidence is admissible in court. Once collected, laboratory analysis can provide excellent information to further your investigation efforts.

## ***EVALUATION:***

The student will complete a written quiz and the student activities at a time determined by the instructor.

## ***ASSIGNMENT:***

Review your notes and read Chapter 4-2 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

UNIT 4: EVIDENCE

**TOPIC:** TRACE EVIDENCE

**TIME FRAME:** 5:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz and student activity

*Behavior:* The student will confirm a knowledge of the various types of trace evidence utilized in fire investigations, including the methods by which they are detected, collected, and preserved by completing the written quiz and student activity

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 4-3, pages 69-128

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- Activity Sheets 4-3-1 through 4-3-8

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Fire Investigation 1A Student Manual, SFT, 1996
- Physical Evidence Bulletins, California Department of Justice, Bureau of Forensic Services
- Law Enforcement, Investigative Services Branch, California Criminalistic Institute

**PREPARATION:**

There are numerous types of trace evidence present at the fire scenes. The fire investigator should be familiar with the methods by which this evidence is detected, collected, and preserved.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

TRACE EVIDENCE

## PRESENTATION

## APPLICATION

### I. TRACE EVIDENCE DEFINITION

A. Small to minute amount of evidence that is examined in the laboratory (by instrumentation) to either identify the material, to compare questioned and known specimens to determine a common origin, and to link suspect and victim to each other and to the scene

1. Fingerprints
2. Tool marks
3. Footprints and tire tracks
4. Synthetic fiber and hair
5. Blood and body fluids
6. Soil samples
7. Glass
8. Gun shot residue
9. Flammable/combustible liquid
10. Explosion residue
11. Paint
12. Grease, lubricants, and cosmetics

**SLIDE: 4-3-1**

**SLIDE: 4-3-2**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

TRACE EVIDENCE

## PRESENTATION

## APPLICATION

**SLIDE: 4-3-3**

## II. FINGERPRINTS

### A. Latent (invisible print)

1. Made visible and recoverable by
  - a) Dusting with powders
    - 1) Different colored powders
    - 2) Use tape to lift
  - b) Chemical tests
    - 1) Iodine fuming
    - 2) Ninhydrin
    - 3) Silver nitrate
    - 4) "Crazy glue" fuming process
  - c) Alternate light source (ALS)
    - 1) Laser light technique

### B. Patent (visible prints)

1. Found after a fire as a visible print on object
2. Protect from damage
3. Photograph
4. Lift using latent methods, if possible



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

TRACE EVIDENCE

## PRESENTATION

## APPLICATION

- C. Plastic – impression print
  - 1. Found as a visible print in soft materials
    - a) Photograph in place and try to collect intact for lab processing

**SLIDE: 4-3-4**

### III. TOOL MARKS

- A. A tool mark is any impression, scratch, gouge, cut or abrasion made when a tool is brought into contact with another object

**SLIDE: 4-3-5**

- B. Collection of evidence
  - 1. Photograph in place
    - a) Overall photo depicting entire object
    - b) Close-up showing details of tool mark
  - 2. Collect tool
  - 3. Collect impression if possible without damage
  - 4. Cast tool mark casting material similar to Mikrosil
- C. Never fit suspected tool into the impression as it will destroy the evidentiary value of the impression



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

TRACE EVIDENCE

## PRESENTATION

## APPLICATION

**SLIDE: 4-3-6**

### IV. FOOTPRINTS AND TIRE TRACKS

#### A. Shoe and tire tracks are found at fire scene

1. Impressions
  - a) Soil
  - b) Mud
  - c) Snow
    - 1) Snow print wax
2. Prints
  - a) Floors
  - b) Glass
  - c) Paper
  - d) Doors

#### B. Collection of evidence

1. Sketch
2. Photograph with scale
3. Casting
  - a) Dental stone
  - b) Tracestone
  - c) Die cast
4. Tires or shoes
5. Electrostatic dust lifting



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

TRACE EVIDENCE

## PRESENTATION

## APPLICATION

- C. Vehicle track width and wheel base
  - 1. Outside edge of left tire and inside edge of right tire

**SLIDE: 4-3-7**

## V. FIBERS AND HAIRS

- A. Fiber (microscopic material)
  - 1. Insulation
  - 2. Carpeting
  - 3. Dust/pollen
- B. Hair
  - 1. Varies by location on human body
    - a) Scalp
    - b) Face
    - c) Body
    - d) Pubic
- C. Control samples
  - 1. Numerous places
- D. Do not package wet evidence

**SLIDE: 4-3-8**

## VI. BLOOD AND BODY FLUIDS

- A. Safety
  - 1. Wear gloves
  - 2. Wear eye protection



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

TRACE EVIDENCE

## PRESENTATION

## APPLICATION

3. Dust mask if substance is dried
4. Wash hands with germicidal soap

### B. Collection of evidence

1. Blood
  - a) Pattern of blood stain
  - b) Collect as much as possible
  - c) Change gloves if contaminated
  - d) Distilled water is permissible to moisten
2. Saliva
3. Urine
4. Perspiration
5. Seminal

**SLIDE: 4-3-9**

## VII. SOIL SAMPLES

- A. Soil may be transferred by the arsonist from or to the crime scene by vehicle or foot
- B. Collection of evidence
  1. Tablespoon of soil sample from scene is enough for comparison
  2. If soil firmly attached to some object
    - a) Do not remove
    - b) Air dry
    - c) Place in appropriate container

**PRESENTATION**

**APPLICATION**

C. Comparison samples

1. 3 tablespoons are needed from each area

**SLIDE: 4-3-10**

**VIII. GLASS PARTICLES**

A. A person standing in close proximity to glass when broken will pick up fragments of glass on clothing and shoes

B. Collection of evidence

1. Small fragments
  - a) Keep handling of clothes to a minimum
  - b) Wrap articles separately
2. Large visible fragments
  - a) All fragments present must be collected
  - b) Place in box with tight fitting lid
  - c) Do not allow glass to move in container

C. Examination will show direction of breaking force or glass cutter use

**SLIDE: 4-3-11**

**IX. FIREARMS**

A. May be involved in arsons when

1. Spite or revenge fires
2. Arson/homicide



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

TRACE EVIDENCE

## PRESENTATION

## APPLICATION

- B. Possible evidence items
  - 1. Bullet and cartridge case comparisons
  - 2. Functioning and powder pattern tests
  - 3. Trace evidence may adhere to exposed surfaces
  
- C. Special caution
  - 1. Safety is primary
  - 2. Always render weapon safe to handle before proceeding with other examinations
  - 3. Do not disturb possible trace and fingerprint evidence
  
- D. Evidence collection
  - 1. Submit in person to lab
    - a) Request weapon be processed for prints, trace evidence, blood, etc.
  - 2. Sketch and photograph all areas

**SLIDE: 4-3-12**

**SLIDE: 4-3-13**

## X. VOLATILE FLAMMABLES

- A. May be encountered throughout fire scene as an accelerant
  
- B. Evidence collection
  - 1. Collect in airtight containers
    - a) New paint cans best



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

TRACE EVIDENCE

## PRESENTATION

## APPLICATION

- b) Glass containers may be used
  - 1) Subject to breakage
- c) Heat sealed bags impervious to vapor loss may also be used

### C. Laboratory testing

- 1. Vacuum extraction method of obtaining excellent sample is current technique
  - a) Sample is placed in paint can for this process

**SLIDE: 4-3-14**

## XI. EXPLOSIVE RESIDUE

- A. May be found on
  - 1. Clothes
  - 2. Hands
  - 3. Soil samples

**SLIDE: 4-3-15**

## XII. PAINT

- A. Tools may leave or take paint
- B. Recovery of samples
  - 1. All samples in separate containers
  - 2. Obtain all layers of paint

## ***SUMMARY:***

Trace evidence is present at all fire scenes. Fire investigators should be versed in the various types of evidence and their methods of detection, collection, and preservation. The investigator must know the types of evidence and understand the rules of evidence. The investigator must know the major problems associated with arson evidence. Evidence must be recognized for its values and weaknesses. Evidence must be properly removed, identified, collected, and preserved. Flammable liquids require special collection and preservation procedures. The chain of evidence must be maintained. Evidence must be stored in appropriate containers. Various laboratory services are available to the investigator.

## ***EVALUATION:***

The student will complete a written quiz and student activity at a time determined by the instructor.

## ***ASSIGNMENT:***

Review your notes and read Chapter 4-3 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

TIRE TRACK INFORMATION

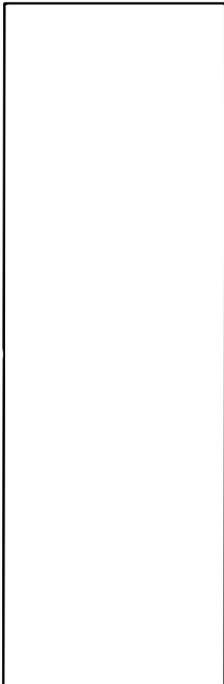
INCIDENT NUMBER: \_\_\_\_\_

INCIDENT NAME: \_\_\_\_\_

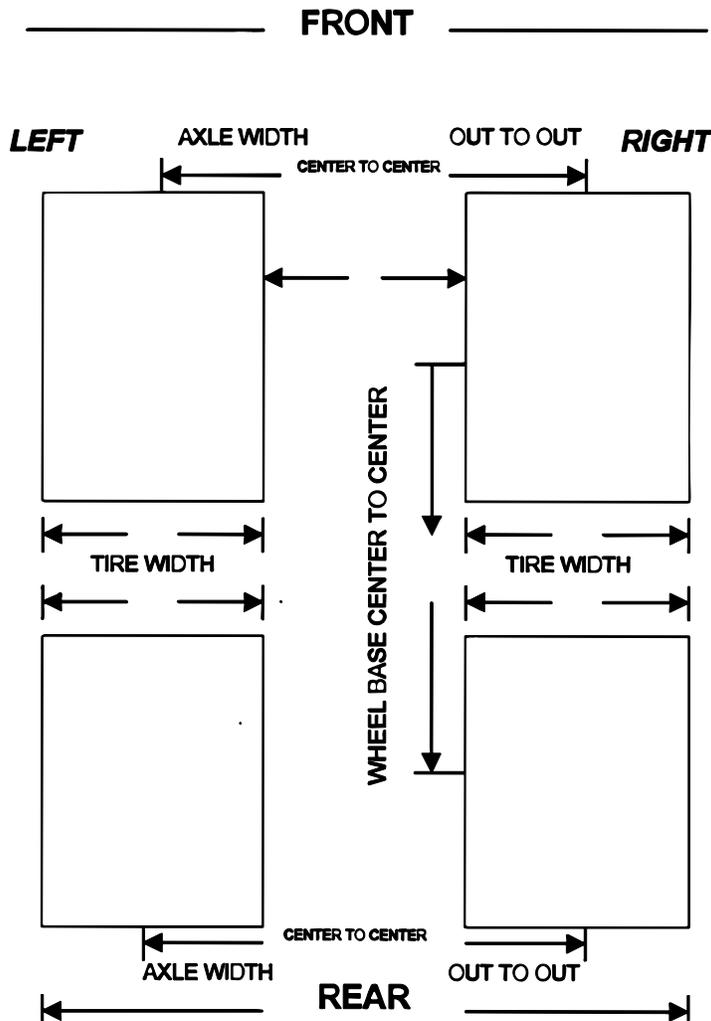
DATE: \_\_\_\_\_

INVESTIGATOR: \_\_\_\_\_

SKETCH  
TREAD  
PATTERN



NOTE:  
Photograph  
Full Tire  
Rotation Also.



REMARKS

\_\_\_\_\_

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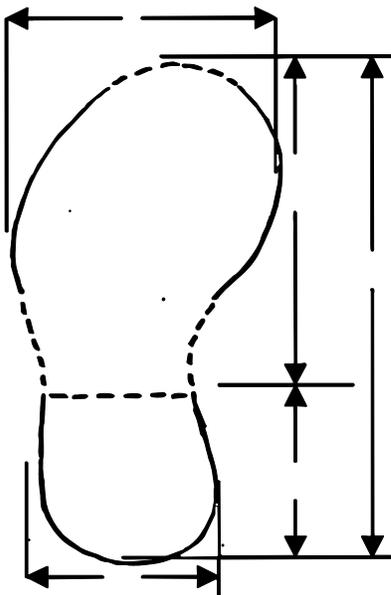
SHOE PRINT INFORMATION

INCIDENT NUMBER: \_\_\_\_\_

INCIDENT NAME: \_\_\_\_\_

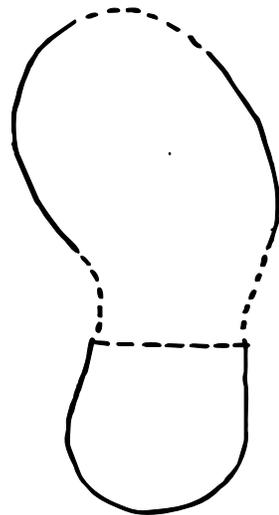
DATE: \_\_\_\_\_

INVESTIGATOR: \_\_\_\_\_



**LEFT**

<b>PATTERN</b> _____
<b>BASIC TYPE</b> _____
<b>STRIDE HEEL TO HEEL</b>
_____
<b>GROUND TYPE</b> _____
<b>DRY</b> ___ <b>WET</b> ___ <b>SNOW</b> ___
<b>OTHER</b> _____



**RIGHT**

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## **ACTIVITY SHEET 4-3-1**

### **FINGERPRINT CARDS**

TIME FRAME: 0:30

#### **MATERIALS NEEDED:**

- FBI fingerprint cards
- Ink pad
- Ink with roller
- Paper towels
- Soap

#### **INTRODUCTION:**

This activity provides you with the opportunity to practice the techniques of obtaining fingerprints from an individual.

#### **DIRECTIONS:**

1. Work in two-person teams.
2. Fingerprint your partner and complete the information portion of the fingerprint card.
3. Obtain required personal information from his or her driver's license.



## **ACTIVITY SHEET 4-3-2**

### **LATENT PRINTS ON ALUMINUM CANS/GLASS BOTTLES**



TIME FRAME: 0:30

#### **MATERIALS NEEDED:**

- 3"x5" print cards
- Aluminum can or glass bottle
- Camera, 35 mm color print film
- Evidence container (paper bag)
- Fingerprint powder
- Lifting tape
- Make-up brush or cotton balls
- Paper bag

#### **INTRODUCTION:**

This activity provides you with the opportunity to practice lifting latent prints from a round object.

#### **DIRECTIONS:**

1. Take a photograph of your aluminum can or glass bottle before it is moved.
2. Dust the can or bottle to expose fingerprints.
3. Take a photograph of the exposed fingerprints.
4. Lift latent prints with tape.
5. Affix tape to a 3"x5" print card.
6. Properly identify and place the can or bottle into evidence.

## **ACTIVITY SHEET 4-3-3**

### **LATENT PRINTS ON FLAT GLASS SURFACE**

TIME FRAME: 0:30

#### **MATERIALS NEEDED:**

- 3"x5" print cards
- Camera, 35 mm color print film
- Cotton balls
- Fingerprint powder
- Flat glass surface (window)
- Lifting tape
- Make-up brush or cotton balls

#### **INTRODUCTION:**

This activity provides you with the opportunity to practice lifting a latent print from a flat surface.

#### **DIRECTIONS:**

1. Dust a flat glass surface (window) with fingerprint powder to expose any fingerprints.
2. Take a photograph of the exposed fingerprints.
3. Lift latent prints with tape.
4. Affix tape to a 3"x5" print card.
5. Properly identify the latent print.



## ACTIVITY SHEET 4-3-4

### FIELD TEST FOR FLAMMABLE VAPORS

TIME FRAME: 0:30

#### MATERIALS NEEDED:

- Aluminum foil or pie pan
- Camera, 35 mm color print film
- Dirt
- Gasoline (1 gallon)
- Matches
- Plastic water bottle for extinguishment

#### INTRODUCTION:

This activity provides you with the opportunity to learn the technique of detecting the presence of a flammable liquid in soil.

#### DIRECTIONS:

1. Place a ¼" layer of dirt on the foil or in the pie pan.
2. Pour approximately 3 tablespoons of gasoline on the dirt and allow it to soak it.
3. Take a photograph of the vapor test (before ignition).
4. Scratch the surface of the dirt to release trapped vapors.
5. Ignite with a match.

**CAUTION:** Use a small amount of gasoline. Observers must stand away from the demonstration before throwing the match into the vapors. Store the gasoline can out of the test area.

6. Take a photograph of the vapor test after ignition
7. Document the test as though it was being conducted at a fire scene to determine the presence of flammable vapors.



## **ACTIVITY SHEET 4-3-5**

### **TIMED ROPE/TWINE**

TIME FRAME: 0:30

#### **MATERIALS NEEDED:**

- Aluminum foil or pie pan
- Camera, 35 mm color print film
- Bucket/pail of water
- Hemp rope or 1/8" cotton twine (4"-5")
- Matches
- Ruler
- Watch

#### **INTRODUCTION:**

This activity provides you with the opportunity to learn the process of a time delay, recognize the remains, and practice skills of documenting.

#### **DIRECTIONS:**

1. Cut a 4"-5" length of rope/twine and mark at 1" intervals.
2. Ignite the rope/twine.
3. Determine the burning time per inch of rope/twine.
4. Describe the item burned and the condition it was burned under (weather, pan, etc.).
5. Measure and document the residue after burning.
6. Take a photograph of the evidence.
7. Empty residue into water bucket to ensure extinguishment.



## **ACTIVITY SHEET 4-3-6**

### **PHOTOGRAPH OF UNBURNED DEVICE**



TIME FRAME: 0:30

#### **MATERIALS NEEDED:**

- Ruler or yard stick
- Tape
- Cigarette
- Book of matches
- Camera, 35 mm color print film
- Tripod (if available)

#### **INTRODUCTION:**

This activity provides you with the opportunity to document a device at the scene before collecting it as evidence.

#### **DIRECTIONS:**

1. Take two photographs of an unburned cigarette/matchbook incendiary device.
2. Take both photos at the closest possible distance and within the limitations of the lens.
3. Prepare a written report that documents the procedure, camera settings, and measured distance from the lens.
4. Submit written report and both photographs to the instructor.
5. Be prepared to present your report and photos to the class.

## **ACTIVITY SHEET 4-3-7**

### **INCENDIARY DEVICE**

TIME FRAME: 0:30

#### **MATERIALS NEEDED:**

- Aluminum foil or pie pan
- Camera, 35 mm color print film
- Cigarette
- Evidence container (paper bag) with cotton padding
- Lab request form (DO3)
- Match book or wood matches
- Plastic water bottle (for extinguishment)
- Rubber bands
- Ruler
- Straw
- String
- Tape

#### **INTRODUCTION:**

This activity provides you with the opportunity to learn the process of a time delay, recognize the remains, properly document the device, and practice skills in recovering the evidence.

#### **DIRECTIONS:**

1. Place some straw on to foil or pie pan.
2. Construct a time-delay incendiary device and place it on the straw.
3. Measure from the end of the cigarette to the match to determine burn time.
4. Ignite the device.
5. Take a photograph of the burned evidence.
6. Prepare a written report describing the burned evidence.
7. Properly identify and place the device into evidence.
8. Prepare a lab request for analysis.



## **ACTIVITY SHEET 4-3-8**

### **PHOTOGRAPH WITH MIRROR**



TIME FRAME: 0:30

#### **MATERIALS NEEDED:**

- Two small mirrors
- Aluminum foil
- Camera, 35 mm color print film
- Tripod (if available)
- Vehicle or gas/plumbing pipe

#### **INTRODUCTION:**

Often an investigator cannot get a direct shot of an item or needs additional light to make the photograph clearer. This activity provides you with the opportunity to photograph evidence under these circumstances.

#### **DIRECTIONS:**

1. Take two photographs of the hidden side of an engine part (fuel line, etc.) or plumbing using a mirror.
  - a. First photo will use available light.
  - b. Second photo will use light reflected by the foil or another mirror.
2. Prepare a written report that documents the procedure and conditions the photos were taken.
3. Submit written report and both photographs to the instructor.
4. Be prepared to present your project to the class.

**TOPIC:** INTRODUCTION TO INTERVIEWING

**TIME FRAME:** 2:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz

*Behavior:* The student will confirm a knowledge of the terms “interview” and “interrogation,” the legal differences between them, and the Miranda rule and its importance to questioning by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 5-1, pages 129-140

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- California Peace Officers Legal Sourcebook, Department of General Services, Current Edition
- "Eyewitness Credibility" video, 48 hours (recommended)

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- California Peace Officers Legal Sourcebook, Department of General Services, Chapter 7, Current Edition

**PREPARATION:**

“Interview” and “interrogation” have different legal meanings. The Miranda rule applies to both when certain legal tests are met. It is critical for an investigator to conduct interviews and interrogations in a correct and legal format. Information received by using improper methods can jeopardize the evidence, the information, and the case. This is an area of the course that is closer to law enforcement than the fire service. It is new information for some. You need a thorough understanding of this lesson so this component of your case preparation won't cause you the greatest headache.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## PRESENTATION

## APPLICATION

**NOTE:** This is an introduction to interviewing, interrogation, and the administration of the Miranda Rights. The PC 832 required for Fire Investigator I certification provides the complete and in-depth training on these topics.

### I. INTERVIEWS VERSUS INTERROGATIONS

- A. Investigators frequently confuse interviews with interrogations
  - 1. Interview defined
    - a) The questioning of a person who is believed to possess knowledge that is of official interest to the investigation of an incident, an individual, or fact
  - 2. Interrogation defined
    - a) Interrogation is the formal questioning of a criminal suspect in a custodial setting
    - b) All interrogations must be conducted within the guidelines established by the Miranda decision

**SLIDE: 5-1-1**

**SLIDE: 5-1-2**

### II. THE MIRANDA RULE

- A. History
  - 1. Miranda vs. Arizona 384 V.S. 436 (6.13.66)
    - a) Miranda raped an 18 year old girl
    - b) He voluntarily confessed and was convicted

PRESENTATION	APPLICATION
<p>c) Appeal was upheld by the Arizona Supreme Court but reversed by the U.S. Supreme Court</p> <p>d) Confession was not admissible because of “voluntariness”</p> <p>e) If interview is custodial, individual must be advised of certain constitutional rights</p> <p>B. Miranda rule for adults</p> <p><b>NOTE:</b> Review Chapter 7, <u>California Peace Officers Legal Sourcebook</u>.</p> <p>1. An adult must be advised of their rights prior to any questioning if</p> <p>a) They are in custody</p> <p>b) They are going to be questioned about a crime</p> <p>c) They are being questioned by a law enforcement officer</p> <p>2. Custody</p> <p>a) The taking into physical custody otherwise depriving a person of their freedom in any “significant” way</p> <p>b) Custodial interrogation</p> <p>1) Interrogation after arrest</p> <p>c) Temporary detention is the detaining of an individual to</p> <p>1) Identify the individual</p>	<p><b>SLIDE: 5-1-3</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p style="text-align: center;">2) Determine the individual's activity</p> <p style="text-align: center;">3) Establish/eliminate the individual from suspicion</p> <p style="text-align: center;">4) Focus of suspicion</p> <p><b>NOTE:</b> Refer to the Sample Admonishment Form in the student manual.</p> <p>C. Miranda rule for juveniles</p> <ol style="list-style-type: none"> <li>1. The California Welfare and Institutions Code specifies the requirements for custodial situations involving juveniles</li> <li>2. Officers need not advise a juvenile of any more rights than an adult</li> <li>3. Officers do not need to advise juveniles that they have a right to speak to their parents prior to questioning               <ol style="list-style-type: none"> <li>a) While it is not necessary to advise the juvenile of additional rights, if they request their parents, guardian, other relative, employer, and/or attorney, it is a mandatory that you comply with the request                   <ol style="list-style-type: none"> <li>1) W&amp;I Code §627</li> </ol> </li> <li>b) Local policy may affect an additional rights warning</li> </ol> </li> <li>4. Per W&amp;I Code §625, <u>you must advise juveniles of their rights when they are arrested, whether you want to question them or not</u> <ol style="list-style-type: none"> <li>a) You would not advise an adult of their Miranda rights unless you want to interrogate, but with juveniles, you must</li> </ol> </li> </ol>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>5. W&amp;I Code §627(a) requires police to notify the parents if the juvenile is taken to juvenile hall</p> <p>a) The section does not require parents to be notified when the juvenile is taken to the police station in temporary custody</p> <p>6. W&amp;I Code §627(b) states that a juvenile has the right to make two phone calls upon being taken into custody</p> <p>a) The section does not require the juvenile to be advised they have this right</p> <p>b) The case which discusses the above points, as well as other points of juvenile law, is in Michael J. 110 CA3d 835 (1980)</p> <p>D. Procedure for advising suspects</p> <p>1. When advising suspects of their rights always advise them from your "rights card," or other printed material, which has the admonishment</p> <p>2. Intelligent waiver</p> <p>a) Not only must you advise the suspect of their rights, you must later in court prove that the suspect understood their rights and that they intelligently waived those rights</p> <p>3. If a person indicates that they know their rights, and "waives" reading them, read them anyway</p> <p>a) If you don't, you will lose the resulting confession</p> <p>b) Record actual answer and quote them in a written report</p>	<p><b>SLIDE: 5-1-4</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## INTRODUCTION TO INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>c) Written waiver signed by suspect</li> <li>d) Method of receiving waiver is the policy of your local department</li> </ul> <p>4. Gladys R. questionnaire (1970) 1 CAL 3D 855</p> <ul style="list-style-type: none"> <li>a) Arrested</li> <li>b) Under age 14</li> <li>c) After Miranda waived</li> </ul> <p><b>NOTE:</b> Refer to the Gladys R. questionnaire in the student manual.</p> <p>E. Beheler interview/interrogation (1983) 463 U.S. 1121, 1125</p> <ul style="list-style-type: none"> <li>1. Noncustodial</li> <li>2. Admonish Beheler <ul style="list-style-type: none"> <li>a) "You are not under arrest."</li> <li>b) "You are free to leave at any time."</li> <li>c) "You do not have to answer any questions I ask."</li> <li>d) "Do you understand what I have just told you?"</li> </ul> </li> <li>3. Do not block the doorway</li> <li>4. Do not lock the door</li> </ul>	

***SUMMARY:***

The definitions of “interview” and “interrogation” have distinct legal meanings. Fire investigators must be knowledgeable of these differences, and must know when to apply the Miranda Rule to questionings.

***EVALUATION:***

The student will complete a written quiz at a time determined by the instructor.

***ASSIGNMENT:***

Review your notes and read Chapter 5-1 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

**TOPIC:** TECHNIQUES OF INTERVIEWING

**TIME FRAME:** 7:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz and student activity

*Behavior:* The student will confirm a knowledge of proper interview techniques by completing the written quiz and student activity

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 5-2, pages 141-168

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- Activity Sheets 5-2-1 and 5-2-2
- "Interviewing and Interrogation Techniques, Part I", POST video broadcast 4-23-93
- "Interviewing and Interrogation Techniques, Part II", POST video broadcast 4-23-93

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- "Interviewing and Interrogation Techniques, Part I", POST video broadcast 4-23-93
- "Interviewing and Interrogation Techniques, Part II", POST video broadcast 4-23-93

**PREPARATION:**

An interview utilizes a number of steps and techniques in an effort to gain accurate information on a subject. It is essential that the fire investigator be a proficient interviewer.



PRESENTATION	APPLICATION
<p><b>I. INTERVIEWING TECHNIQUES</b></p> <p>A. Listening</p> <ol style="list-style-type: none"> <li>1. Ears</li> <li>2. Eyes</li> </ol> <p>B. Formal training</p> <ol style="list-style-type: none"> <li>1. 12 years learning to write</li> <li>2. 8-12 years how to read</li> <li>3. 1-2 years how to speak</li> <li>4. 0-1/2 year how to listen</li> </ol> <p>C. Work place</p> <ol style="list-style-type: none"> <li>1. 9% of the time writing</li> <li>2. 16% of the time reading</li> <li>3. 30% of the time speaking</li> <li>4. 45% of the time listening</li> </ol> <p>D. Primary purpose of interviews</p> <ol style="list-style-type: none"> <li>1. To provide additional information for investigation</li> <li>2. To learn the facts about the crime</li> </ol>	<p><b>SLIDE: 5-2-1</b></p> <p><b>SLIDE: 5-2-2</b></p> <p><b>SLIDE: 5-2-3</b></p> <p><b>SLIDE: 5-2-4</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<ol style="list-style-type: none"> <li>3. To gather incriminating information from the suspect</li> <li>4. To locate other participants involved in the case or to locate additional witnesses</li> <li>5. To obtain a confession from a suspect in a criminal investigation, and insure that the information obtained will be admissible in court</li> </ol> <p>E. Qualities of the interviewer</p> <ol style="list-style-type: none"> <li>1. Mentally prepared               <ol style="list-style-type: none"> <li>a) Review all of the pertinent facts of the investigation prior to the time of the interview</li> </ol> </li> <li>2. Avoid a personality clash</li> <li>3. Maintain a business-like attitude</li> <li>4. Guide and control the conversation</li> <li>5. Neat appearance</li> <li>6. Be professional in approach and follow through technique</li> <li>7. Be alert at all times               <ol style="list-style-type: none"> <li>a) Listen and look for any inconsistencies</li> </ol> </li> <li>8. Be patient and learn how to <u>listen</u> <ol style="list-style-type: none"> <li>a) Listening is an art undeveloped by most investigators</li> <li>b) If you are talking more than 30% of the time, you're talking too much.</li> </ol> </li> </ol>	<p><b>SLIDE: 5-2-5</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<p>9. Establish the integrity of the interrogator (trust)</p> <p>10. Maintain a logical mind</p> <p>11. Maintain self-control over emotions</p> <p>12. Learn to play the “role”</p> <p><b>NOTE:</b> Complete Activity Sheet 5-2-1.</p> <p>F. Observations</p> <p>1. Observe and learn to interpret all that is said and all that is observed</p> <p>2. Understanding body language</p> <p>a) Physical body language – clustering</p> <ol style="list-style-type: none"> <li>1) Crossing of legs or legs moving</li> <li>2) Tapping fingers</li> <li>3) Perspiration</li> <li>4) Dry mouth or loss of voice</li> <li>5) Twitching</li> <li>6) Difficulty in swallowing</li> <li>7) Lack of eye contact</li> <li>8) Picking lint off clothing</li> <li>9) Watch the carotid artery</li> </ol>	<p><b>SLIDE: 5-2-6</b></p>





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>b) It is a constant visible reminder to the suspect that you are the person who will put him away</li> <li>c) A coat and tie command respect</li> <li>4. Avoid certain words such as “kill, steal, burn, arson, etc.”</li> <li>5. Maintain close eye-to-eye contact</li> <li>6. Remain close to the suspect physically               <ul style="list-style-type: none"> <li>a) Avoid desks and tables between you and the suspect</li> </ul> </li> <li>7. Remain seated               <ul style="list-style-type: none"> <li>a) Pacing the room implies impatience on the part of the interviewer</li> </ul> </li> <li>8. Speak on a language level equal to the suspect</li> <li>9. Treat the suspect with decency and respect</li> <li>10. Sympathize with the suspect</li> <li>11. Reduce the guilt feelings               <ul style="list-style-type: none"> <li>a) Play on the moral seriousness of the crime</li> </ul> </li> <li>12. Save face for him or her, i.e., sexually motivated crime, revolting crime               <ul style="list-style-type: none"> <li>a) Learn to condemn the victim, the accomplice, all others</li> </ul> </li> </ul>	<p><b>SLIDE: 5-2-9</b></p> <p><b>SLIDE: 5-2-10</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>13. Have a suspect place himself or herself at the scene</li> <li>14. Catch the suspect in a few lies               <ul style="list-style-type: none"> <li>a) Expound on the inconsistencies of the story</li> </ul> </li> <li>15. Learn when and how to touch suspect</li> <li>16. Appeal to him or her               <ul style="list-style-type: none"> <li>a) Flattery will get you everything</li> </ul> </li> <li>17. Play one suspect against the other</li> <li>18. Always allow plenty of time               <ul style="list-style-type: none"> <li>a) Never start unless you can take the time to do it right</li> </ul> </li> </ul>	<p><b>SLIDE: 5-2-11</b></p>
<p>H. Tactics</p> <ul style="list-style-type: none"> <li>1. When suspect's guilt is certain           <ul style="list-style-type: none"> <li>a) Confidence               <ul style="list-style-type: none"> <li>1) Display an air of confidence in the suspect's guilt</li> </ul> </li> <li>b) Evidence               <ul style="list-style-type: none"> <li>1) Point out some, but by no means all, of the circumstantial evidence indicative of a suspect's guilt</li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 5-2-12</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<p>c) Symptoms of guilt</p> <p>1) Call attention to the suspect's physiological and psychological symptoms of guilt</p> <p>d) Sympathy</p> <p>1) Sympathize with the suspect saying "anyone else under similar conditions or circumstances might have done the same thing"</p> <p>e) Moral seriousness</p> <p>1) Reduce the suspect's guilt feeling by minimizing the moral seriousness of the offense</p> <p>f) Acceptable motivation</p> <p>1) Suggest a less revolting and more morally acceptable motivation or reason for the offense than that which is known presumed</p> <p>g) Blaming other parties</p> <p>1) Sympathize with the suspect</p> <ul style="list-style-type: none"> <li>• Condemning the victim</li> <li>• Condemning the accomplice</li> <li>• Condemning anyone else upon whom some degree of moral responsibility might conceivably be placed for the commission of the crime in question</li> </ul>	<p><b>SLIDE: 5-2-13</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>h) To tell the truth               <ul style="list-style-type: none"> <li>1) Utilize displays of understanding and sympathy in urging the suspect to tell the truth</li> </ul> </li> <li>i) Exaggeration               <ul style="list-style-type: none"> <li>1) Point out the possibility of exaggeration on the part of the accuser or victim, or exaggerate the nature and seriousness of the offense itself</li> </ul> </li> <li>j) Placing the suspect at the scene               <ul style="list-style-type: none"> <li>1) Having the suspects place themselves at the scene of the crime or in some sort of contact with the victim or the occurrence</li> </ul> </li> <li>k) Admission of lying               <ul style="list-style-type: none"> <li>1) Seek an admission of lying about some incidental aspect of occurrence</li> </ul> </li> <li>l) Appealing to pride or honor               <ul style="list-style-type: none"> <li>1) Appeal to the suspect's pride by well-selected flattery or by a challenge to his honor</li> </ul> </li> <li>m) Resistance               <ul style="list-style-type: none"> <li>1) Point out the futility of resistance to telling the truth</li> </ul> </li> </ul>	<p style="text-align: center;"><b>SLIDE: 5-2-14</b></p>

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>n) General admission of guilt                             <ul style="list-style-type: none"> <li>1) Rather than seek a general admission of guilt, first ask the suspect a question about a detail of the offense, or inquire as to the reason for its commission</li> </ul> </li> <li>o) Co-offenders                             <ul style="list-style-type: none"> <li>1) When co-offenders are being interviewed and the previously described techniques have been ineffective, “play one against the other”</li> </ul> </li> <li>2. When suspect guilt is uncertain                             <ul style="list-style-type: none"> <li>a) Obtain from the suspects detailed information about their activities before, at the time of, and after the occurrence in question                                     <ul style="list-style-type: none"> <li>1) Where certain facts suggestive of the suspect’s guilt are known, ask about them rather casually and as though the real facts are already known</li> <li>2) At various intervals, ask the suspect certain pertinent questions in a manner that implies the correct answers are already known</li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 5-2-15</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<p>b) Nonexistent evidence</p> <ol style="list-style-type: none"> <li>1) Refer to some nonexistent incriminating evidence to determine whether the suspect will attempt to explain it away           <ul style="list-style-type: none"> <li>• If yes, that fact is suggestive of guilt</li> </ul> </li> </ol> <p>c) Restitution</p> <ol style="list-style-type: none"> <li>1) If a suspect offers to make restitution, that fact is indicative of guilt</li> </ol> <p>d) Polygraph/voice stress analysis (VSA)</p> <ol style="list-style-type: none"> <li>1) Ask suspect whether he or she is willing to take a polygraph or VSA test           <ul style="list-style-type: none"> <li>• The innocent person will almost always agree to take practically any test to prove his or her innocence</li> <li>• The guilty person is more prone to refuse to take the test, to find excuses for not taking it, or for backing out of the commitment to take it</li> <li>• The polygraph or VSA is a “last resort” and should not be used until all other avenues have been exhausted</li> </ul> </li> </ol>	<p><b>SLIDE: 5-2-16</b></p>





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>2. The defense makes a motion to discover all notes, reports, and tapes in the prosecution's case</p> <p>3. Case law now makes retention of notes made during confessions mandatory</p> <p>4. If your department policy requires the retention of notes, that is the same force as law</p> <p><b>II. THE INTERVIEW</b></p> <p>A. Persons usually interviewed</p> <ol style="list-style-type: none"> <li>1. Victims</li> <li>2. Witnesses</li> <li>3. Informants</li> <li>4. Suspects</li> </ol> <p>B. Conducting the interview</p> <ol style="list-style-type: none"> <li>1. Introduction and identification           <ol style="list-style-type: none"> <li>a) Properly identify yourself               <ol style="list-style-type: none"> <li>1) Use identification card or badge</li> </ol> </li> <li>b) Advise witness of recording process</li> </ol> </li> <li>2. Identify and record witness information           <ol style="list-style-type: none"> <li>a) Properly identify witness               <ol style="list-style-type: none"> <li>1) Name</li> <li>2) Address: Home and business</li> <li>3) Date of birth</li> </ol> </li> </ol> </li> </ol>	<p><b>SLIDE: 5-2-19</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>4) Phone: Home and business</li> <li>b) Use driver's license or some other permanent identification</li> </ul> <p>3. Opening statements</p> <ul style="list-style-type: none"> <li>a) Explain reason for the interview</li> <li>b) Gain confidence</li> <li>c) Confidential</li> <li>d) Encourage witness</li> <li>e) Build rapport</li> </ul> <p>4. Place of interview</p> <ul style="list-style-type: none"> <li>a) Private</li> </ul> <p>5. Interview one person at a time</p> <ul style="list-style-type: none"> <li>a) Keep their thoughts and statements individualized</li> <li>b) Do not cross contaminate with other statements</li> </ul> <p>6. Attitude of the investigator</p> <ul style="list-style-type: none"> <li>a) Be courteous</li> </ul> <p>7. Completeness of information gathered</p> <ul style="list-style-type: none"> <li>a) Don't rush</li> <li>b) Allow witness to talk</li> </ul>	<p><b>SLIDE: 5-2-20</b></p> <p><b>SLIDE: 5-2-21</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>c) Introduce key ideas</li> <li>d) Use words witnesses will understand</li> </ul> <p>8. Documenting statements</p> <ul style="list-style-type: none"> <li>a) Don't make leading statements</li> <li>b) Take notes after interview, not during interview</li> <li>c) Get notes signed if possible</li> <li>d) Put in correct order</li> </ul> <p>C. Interviewing with an interpreter</p> <ul style="list-style-type: none"> <li>1. Use other law enforcement officer if possible</li> <li>2. Use disinterested party</li> <li>3. Advise interpreter to use only your words and not to add any of their own</li> <li>4. Advise interpreter to repeat answer using exact words using quotes if necessary</li> </ul> <p>D. Statements are usually made in three types</p> <ul style="list-style-type: none"> <li>1. Oral statements</li> <li>2. Handwritten or typed statements</li> <li>3. Recorded statements</li> </ul>	<p><b>SLIDE: 5-2-22</b></p> <p><b>SLIDE: 5-2-23</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## PRESENTATION

## APPLICATION

## E. Documenting the interview

**NOTE:** See "Written Statement" format on page ### in the student manual.

1. Review your notes
2. Review tape recordings/video
3. Prepare an interview summary
  - a) One interview per document
  - b) Don't place summaries of several interviews on one page
4. Date, time, location of interview
5. Case number/name
6. Name address, telephone, etc., of interviewee
7. Narrative
8. Date and sign

**NOTE:** Complete Activity Sheet 5-2-2.

### III. PRELIMINARY INVESTIGATION

- A. It is important that the officer conducting the preliminary investigation formulates a team attitude with the victim
  1. An attitude of support and dedication
  2. Apprehend and convict the perpetrator of the crime

**SLIDE: 5-2-24**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>B. Victim stabilization</p> <ol style="list-style-type: none"> <li>1. When obtaining initial information from victim/witness of violent crime, consider that the victim/witness has been through a tremendous ordeal</li> <li>2. Officer should attempt to stabilize person before obtaining information               <ol style="list-style-type: none"> <li>a) If the victims/witnesses are hysterical                   <ol style="list-style-type: none"> <li>1) Take a moment to let them vent their emotions</li> <li>2) Empathetic</li> <li>3) Careful of words you use</li> </ol> </li> </ol> </li> <li>3. If the victims/witnesses are experiencing anxiety               <ol style="list-style-type: none"> <li>a) Indicate that it is natural to have such feelings</li> <li>b) Have them take a few deep breaths</li> <li>c) Helps them compose their emotions</li> </ol> </li> <li>4. Everything they say is important               <ol style="list-style-type: none"> <li>a) You want to understand all they say</li> <li>b) They should speak slowly</li> <li>c) Speaking slowly will cause the witnesses' breathing rate to slow                   <ol style="list-style-type: none"> <li>1) Decreases the pulse rate</li> </ol> </li> </ol> </li> </ol>	<p><b>SLIDE: 5-2-25</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p style="text-align: center;">2) Helps to calm them</p> <p>C. Building rapport</p> <ol style="list-style-type: none"> <li>1. Be aware of your body language and choice of words, especially when interviewing children</li> <li>2. Watch the witnesses' body language and other forms of nonverbal communication</li> <li>3. Select a location for the interview that will allow the person to be interviewed with the ability to concentrate without distractions</li> <li>4. Tell victims that you are sorry this has happened to them               <ol style="list-style-type: none"> <li>a) This act is almost magical in establishing rapport with victims</li> </ol> </li> <li>5. Thank persons interviewed for the information they gave, and advise them that the report will be submitted to a detective who will follow-up with an investigation</li> <li>6. If the report file number is available, give it to the victim</li> </ol> <p><b>NOTE:</b> Dr. R. Edward Geiselman, Professor of Psychology, University of California at Los Angeles, consultant to POST video broadcasts "Interview and Interrogation Techniques" Part I and Part II conducted a study concerning police officer interviews. The following were identified as those used by successful police interviewers in the field.</p>	<p style="text-align: center;"><b>SLIDE: 5-2-26</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## PRESENTATION

## APPLICATION

**SLIDE: 5-2-27**

- D. Conducting the interview
1. Don't interrupt the victims/witnesses while they are telling the story for the first time
    - a) Take notes sparingly
  2. Repeat the victim's words or phrases verbatim
    - a) Helps to ensure accuracy
    - b) Jogs their memories for associated items and clues
  3. Treat witnesses' statements as if theirs are the only ones you have
    - a) Any hunches you may have or information from other witnesses can be reviewed at the end of the interview
  4. Use open-ended questions
    - a) "Tell me about the suspect's appearance"
    - b) "Tell me about his/her hair color"
    - c) "Tell me about his/her height/weight"
  5. Be very specific about suspect's description
    - a) Head size and shape
    - b) Eyes
    - c) Nose
    - d) Ears



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## PRESENTATION

## APPLICATION

**SLIDE: 5-2-28**

6. It may also be helpful to ask witnesses if the suspect reminded them of an actor, political figure, or other well-known person
7. Do not skip around
  - a) Follow up on information that triggers a question in your mind as soon as possible
  - b) Exhaust questioning one area at a time
8. Near the end of the interview
  - a) Review facts and details with the witnesses
  - b) Refer to your notes
  - c) Make sure they are correct
9. Use a notebook for note taking
  - a) Do not try to write the actual crime report while the witnesses are relating the story
10. Let the victims know you appreciate the information they have given you
  - a) Ask if they have any questions
  - b) "Who can I call for you?"
  - c) "Do you need a ride home?"

#### IV. FOLLOW-UP INTERVIEWING USING COGNITIVE INTERVIEW TECHNIQUE

- A. Developed by R. Edward Geiselman and R. P. Fisher during the 1980s



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>B. The technique helps police witnesses recall information without the use of hypnotism</li> <li>C. The interview should be conducted in a safe and comforting environment</li> <li>D. Before beginning the process, the investigator should build rapport with the witnesses               <ul style="list-style-type: none"> <li>1. To put witnesses at ease and gain their trust, spend some time talking about unrelated matters, such as work, family, hobbies, etc.</li> </ul> </li> <li>E. Tell witnesses that the reason for the interview is to gain information to arrest the suspect and to prevent the suspect from hurting someone else               <ul style="list-style-type: none"> <li>1. Emphasize that law enforcement needs the witnesses' help</li> </ul> </li> <li>F. Explain to witnesses that the Cognitive Interviewing Technique is a four-step interview process that will enhance memory</li> </ul>	<p><b>SLIDE: 5-2-29</b></p>
<ul style="list-style-type: none"> <li>1. Reconstruct circumstances               <ul style="list-style-type: none"> <li>a) Ask witnesses to reconstruct scenes just <u>prior</u> to the crime                   <ul style="list-style-type: none"> <li>1) Describing everything possible that happened prior to the crime</li> <li>2) The more specific witnesses can be the better</li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 5-2-30</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>b) Ask witnesses to recount all observations using all the five senses</p> <ol style="list-style-type: none"> <li>1) Heard</li> <li>2) Smelled           <ul style="list-style-type: none"> <li>• Sensory association enhances memory retrieval</li> </ul> </li> <li>3) Tasted</li> <li>4) Saw</li> <li>5) Felt</li> <li>6) Technique allows witnesses to be placed back into the locale and conditions of the crime</li> <li>7) Specific information may be recalled</li> </ol> <p>c) It is important to ask the witnesses how they were feeling at the time and their reactions to the incident</p> <p>2. Report everything</p> <ol style="list-style-type: none"> <li>a) Have witnesses report everything to you           <ol style="list-style-type: none"> <li>1) Witnesses tend to give information that they think is important</li> <li>2) They edit and delete information they think is not essential or relevant</li> </ol> </li> </ol>	<p><b>SLIDE: 5-2-31</b></p>





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<p>2) “If you had been on the other side of the room, you could have seen that”</p> <p>b) Helps witnesses retrieve information that they could not recall originally</p> <p>1) If they visualize looking at the events from a different location</p> <p>c) This works especially well with witnesses and victims who have had firearms pointed at them during the incidents</p> <p>1) They were so traumatized by the incidents, it is hard for them to recall all of the facts</p> <p>2) If they are out from under the barrel of the gun, they may recall additional facts</p> <p>d) Not everyone visualizes (see pictures in their minds) when remembering</p> <p>1) If the witnesses are nonvisualizers, they may feel guilty that they cannot do what you ask</p> <p>5. Additional techniques</p> <p>a) The Cognitive Interview Technique also uses a series of specific techniques to help an investigator elicit specific items of information from witnesses following the narrative phase of an interview</p> <p>1) Physical appearance</p> <ul style="list-style-type: none"> <li>• “Did the suspect remind you of anyone?”</li> </ul>	<p><b>SLIDE: 5-2-34</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>• “If you were reminded of someone, try to think of why?”</li> <li>• “Was there anything unusual about the suspect’s physical appearance or clothing?”</li> </ul> <p>2) Names</p> <ul style="list-style-type: none"> <li>• “If you think that a name was spoken but you cannot remember what it was, try to think of the first letter of the name by going through the alphabet”</li> <li>• “Then try to think of the number of syllables”</li> </ul> <p>3) Numbers</p> <ul style="list-style-type: none"> <li>• “Was a number involved?”</li> <li>• “Was it high or low?”</li> <li>• “How many digits were in the number?”</li> <li>• “Were there any letters in the sequence?”</li> </ul> <p>4) Speech characteristics</p> <ul style="list-style-type: none"> <li>• “Did the voice remind you of someone else’s voice?”</li> <li>• “If you were reminded of someone, try to think of why?”</li> <li>• “Was there anything unusual about the voice?”</li> </ul>	



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<p style="text-align: center;">5) Conversation</p> <ul style="list-style-type: none"> <li>• “Think about your reactions to what was said and the reactions of others.”</li> <li>• “Were there any unusual words or phrases used?”</li> </ul> <p>G. Closure</p> <ol style="list-style-type: none"> <li>1. At the end of the cognitive interview           <ol style="list-style-type: none"> <li>a) Compare information with other witnesses’ information               <ol style="list-style-type: none"> <li>1) Clarify information that is different in other witnesses’ statements</li> </ol> </li> </ol> </li> <li>2. Tell the witnesses that they probably will <u>remember additional details</u> when they are more relaxed”           <ol style="list-style-type: none"> <li>a) Ask them to give you a call no matter how unimportant or trivial the details may seem</li> </ol> </li> <li>3. Help witnesses to validate that their feelings are normal and not uncommon           <ol style="list-style-type: none"> <li>a) Inform them that if their feelings persist and give them difficulty, each county in California has a Victim/Witness Program that deals with traumatic cases</li> </ol> </li> </ol>	



## PRESENTATION

## APPLICATION

## V. INTERVIEW TECHNIQUES USED SPECIFICALLY FOR CHILDREN

### A. Interview preparation instructions

1. "There may be some questions that you do not know the answers to. That's okay. Nobody can remember everything. If you don't know the answer to a question, then tell me that you don't know. Do not guess or make anything up. It is very important to tell me only what you really remember. Only what really happened"
2. "If you do not want to answer some of the questions, you don't have to. That's okay. Tell me that you don't want to answer the question"
3. "If you don't know what something I ask you means, tell me and ask me to use different words to describe it"
4. "I may ask you some questions more than one time. Sometimes I may forget that I have already asked you that question. You don't have to change your answer, just tell me what you remember the best you can"

**SLIDE: 5-2-35**

### B. Reconstructing the circumstances

1. Tell witnesses to think out loud when reconstructing the circumstances which occurred before the crime

### C. Reporting everything phase

1. Avoid leading child witnesses when they are going through the process of reporting everything

**SLIDE: 5-2-36**



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>a) If you do not understand one of their statements, simply ask what they mean</p> <p>D. Telling the story in a different sequence</p> <ol style="list-style-type: none"> <li>1. Children have a poor sense of time spans and may have to be prompted regularly           <ol style="list-style-type: none"> <li>a) If they are not prompted, they tend to make giant leaps of time when telling things in reverse order</li> </ol> </li> </ol> <p>E. Misleading witnesses</p> <ol style="list-style-type: none"> <li>1. Eliminate phrases such as, "Imagine you were" or "Pretend you saw" when you are explaining the process of changing perspectives           <ol style="list-style-type: none"> <li>a) Those phrases tend to mislead the witness and will present problems for you in court</li> </ol> </li> <li>2. Instead it can be explained, "Now, view the events as you could see them if your were standing..."</li> </ol>	<p><b>SLIDE: 5-2-37</b></p>
<p>F. If children cannot recall information</p> <ol style="list-style-type: none"> <li>1. Change to easier topics if the child says "I don't remember" to three questions in a row</li> <li>2. Do not become overly persistent or verbally abusive in response to your frustration about the child's inability to remember certain facts</li> <li>3. Instead, change topics and return for the missing facts later in the interview</li> </ol>	<p><b>SLIDE: 5-2-38</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## PRESENTATION

## APPLICATION

**NOTE:** Play video "Interviewing and Interrogation Techniques, Part I", POST video broadcast 4-23-93.

### VI. INTRODUCTION TO INTERROGATION TECHNIQUES

- A. Review the crime scenario and the arrest of the suspects
- B. The techniques can be used by detectives in an intensive interrogation, and also in field interrogations in an abbreviated format
- C. Legal ramifications of interrogations
  - 1. Custodial versus noncustodial interrogations
  - 2. Miranda warnings
    - a) Be aware of your agency's policy on giving Miranda warnings
    - b) Miranda warnings need only be given to suspects who are in custody
    - c) Those you plan to interrogate about a crime they committed
    - d) Need not give Miranda warnings to a suspect that you are interrogating over the telephone
  - 3. Custody means a formal arrest
    - a) Detentions and traffic stops are not custody

**SLIDE: 5-2-39**

**SLIDE: 5-2-40**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>b) Even if the “investigation has focused on the suspect,” if not in custody and formally arrested, Miranda warnings are not necessary</p> <p>4. If a peace officer develops probable cause to make an arrest but never informs the suspect that he or she is under arrest, the officer may interrogate without giving Miranda warnings</p> <p>a) It depends on what is in the suspect’s mind</p> <p>b) If a reasonable person would not think he or she was in custody, Miranda warnings are not necessary</p> <p>5. The suspect should be audio-tape recorded</p> <p>D. Prior to the interrogation</p> <ol style="list-style-type: none"> <li>1. Review case files</li> <li>2. Background information on the suspect</li> <li>3. Prior arrest reports of the suspect</li> </ol> <p>E. Interrogation dramatization</p> <p><b>NOTE:</b> Play video “Interviewing and Interrogation Techniques, Part II”, POST video broadcast 4-23-93. An investigator interrogates one of the suspects from the crime scenario dramatized in Part I.</p>	



## PRESENTATION

## APPLICATION

## VII. THE CONFRONTATION INTERROGATION TECHNIQUE

- A. Proven successful in situations where the guilt of a suspect is fairly certain
  - 1. Operates on the principle that the interrogator knows that the suspects are guilty, but the interrogator would like to know the reason the suspects committed the crimes
  - 2. The interrogator will suggest a morally or socially acceptable reason the suspects committed the crimes
- B. Psychological domination
  - 1. After the Miranda warnings are given, suspects are left alone for a period of time
    - a) Heightens anxiety and stress
    - b) During this time, monitor the tape recording of the interrogation room
    - c) Suspect might audibly articulate their concern of being caught
  - 2. You may use props to assist you in psychologically dominating suspects
    - a) Including case files with the suspects' name prominently displayed
    - b) Real or improvised items of evidence
    - c) When you re-enter the interrogation room, inspect the case file

**SLIDE: 5-2-41**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>d) This may create a psychological dominance and advantage and will heighten the suspects' anxiety level</p> <p>C. Confrontation statement</p> <ol style="list-style-type: none"> <li>1. The confrontation statement assures suspects that there is no doubt in your mind of their guilt</li> <li>2. After you re-enter the interrogation room               <ol style="list-style-type: none"> <li>a) Address suspect by first name</li> <li>b) Make an actual or improvised fact synopsis                   <ol style="list-style-type: none"> <li>1) "Based on our extensive investigation, including many interviews and scientific analysis of evidence there is no doubt in our minds that you were the one who..."</li> </ol> </li> </ol> </li> <li>3. The personality of the suspect will determine if you use emotion-packed or legalistic words at this point, such as rape, molest, rob, burglarize, etc.               <ol style="list-style-type: none"> <li>a) Moral or legal words conjure moral degradation or legal consequences</li> <li>b) If you decide to use emotional words, only use them in the confrontation statement and not again until you get a confession</li> </ol> </li> </ol>	<p><b>SLIDE: 5-2-42</b></p>





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>b) Make qualified denials, such as, "On my mother's grave, I would never ..."</li> <li>c) Use delaying tactics or phony surprise, such as, "Who me?" or "What! I can't believe this is happening."</li> </ul>	
<p>E. Transitional phase</p> <ul style="list-style-type: none"> <li>1. The transitional phase lessens the shock of the confrontation statement           <ul style="list-style-type: none"> <li>a) Provides a fluid medium to introduce the themes that you plan to use</li> </ul> </li> <li>2. It avoids awkwardness but does not immediately soften the impact of the confrontation statement           <ul style="list-style-type: none"> <li>a) "I've investigated many of these cases and I know there's usually more than one side to the story"</li> <li>b) "As a matter of fact, I recently handled a case very similar to this. A young fellow..." (go into your first theme)</li> </ul> </li> </ul>	<p><b>SLIDE: 5-2-45</b></p>
<p>F. Theme development</p> <ul style="list-style-type: none"> <li>1. A theme is a psychological, social, or moral excuse for the crime but not a legal one</li> <li>2. It is designed to make it easier for the suspect to confess           <ul style="list-style-type: none"> <li>a) Justifies the crime in suspect's mind</li> <li>b) Allows suspect to save face</li> </ul> </li> </ul>	<p><b>SLIDE: 5-2-46</b></p>



PRESENTATION	APPLICATION
<p>3. Always end the theme with a close-ended leading question, such as, "That's why you did it isn't it, Sam?"</p> <p>4. Types of themes</p> <p>a) Sympathy</p> <p>1) "Life's been hard on you. You have a family to support. Anyone in your circumstances would have done the same thing; and that's why you did it isn't it, Sam?"</p> <p>b) Pride/flattery</p> <p>1) "I've never seen a slicker plan; you must have had a lot of guts to pull that off, didn't you, Bill?"</p> <p>c) Blame transference</p> <p>1) "She probably wanted sex; why else would she dress that way; that's why you had sex with her, because she wanted it, huh, Bob?"</p> <p>d) Less reprehensible motive</p> <p>1) "You didn't intend to shoot that guy in the video store; you just wanted the money; he shouldn't have jumped at you like he did; that's why you shot him, isn't it, John?"</p>	<p><b>SLIDE: 5-2-47</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>e) Minimize crime               <ul style="list-style-type: none"> <li>1) "A bank has plenty of money; it wasn't as if you took it from a poor family; that's why you took that money, isn't it, Bob?"</li> </ul> </li> <li>5. You should have developed themes before the interrogation               <ul style="list-style-type: none"> <li>a) The themes should fit the circumstances of the crime</li> <li>b) The personalities of the suspects</li> </ul> </li> <li>6. You should have three or four themes prepared to use on the suspects               <ul style="list-style-type: none"> <li>a) If you see that the suspects are not reacting to one theme, go on to the next theme</li> </ul> </li> <li>7. You can see when your themes are being accepted by the suspects               <ul style="list-style-type: none"> <li>a) Suspects' facial expressions</li> <li>b) Body language will give you the clues</li> </ul> </li> <li>G. Overcoming objections               <ul style="list-style-type: none"> <li>1. An objection does not deny the accusation but attempts to give an excuse why the accusation could not be true                   <ul style="list-style-type: none"> <li>a) When suspects start to object to, rather than deny the accusation, it is an indication that you have handled their denial phase correctly</li> </ul> </li> </ul> </li> </ul>	<p style="text-align: right;"><b>SLIDE: 5-2-48</b></p>



PRESENTATION	APPLICATION
<p>b) You should be encouraged</p> <p>2. Forms of objections and ways to overcome them</p> <p>a) Objection: "I couldn't do that, I loved her."</p> <p>b) Answer: "I believe you loved her, John; that's why I think this was a spur of the moment thing. That's why you did it, isn't it, John?"</p> <p>c) Objection: "I wasn't brought up that way."</p> <p>d) Answer: "I know that, Bill; I've checked your background that's why I think you're a victim of circumstances here; it was Tom's idea, right, Bill?"</p> <p>e) Objection: "I don't have to force sex; I've got girls just asking for it."</p> <p>f) Answer: "I don't doubt it; you're a good looking guy, that's why I believe she was all for it and teased you along and then she panicked and shut you down. You couldn't help yourself, could you, Bill?"</p>	
<p>H. Using negative alternative questions</p> <p>1. Negative alternative questions are those that present two choices</p> <p>a) One that is socially or morally acceptable</p> <p>b) One that is socially acceptable</p> <p>c) The affirmative answer to either is equally incriminating</p>	<p><b>SLIDE: 5-2-49</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

## TECHNIQUES OF INTERVIEWING

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>d) Get the suspect to admit to the socially or morally acceptable choice</li> <li>2. Emphasize and suggest the face saver as the close ended, leading question               <ul style="list-style-type: none"> <li>a) An example would be                   <ul style="list-style-type: none"> <li>1) "Did you plan to shoot the video store owner?"</li> <li>2) "Did he force you to do it?"</li> <li>3) "He forced you into it, didn't he, Bill?"</li> </ul> </li> </ul> </li> <li>3. Negative alternative questions make it easier for a suspect to confess and admissions or confessions should follow</li> <li>I. Letter of apology               <ul style="list-style-type: none"> <li>1. To avoid confession</li> <li>2. Relieves guilt feelings                   <ul style="list-style-type: none"> <li>a) May express remorse</li> </ul> </li> <li>3. Includes admissions</li> </ul> </li> <li>J. Expanding and clarifying the confession               <ul style="list-style-type: none"> <li>1. Once the confession has been obtained, it is necessary to address intent, premeditation, and diminished capacity</li> <li>2. Now, it is time to dispel with the face savers and get all the facts</li> </ul> </li> </ul>	<p><b>SLIDE: 5-2-50</b></p> <p><b>SLIDE: 5-2-51</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>3. Use legal and realistic words rather than the soft words you used in developing your confrontation statement and themes</p> <p>K. Written confession</p> <ol style="list-style-type: none"> <li>1. A jury gives much weight to a written confession</li> <li>2. The best written confession is actually written by the suspect               <ol style="list-style-type: none"> <li>a) If that is not possible, the investigator may write it in quotes or paraphrase it</li> </ol> </li> <li>3. If the investigator writes the confession, he or she should make two intentional errors per page               <ol style="list-style-type: none"> <li>a) The suspect will be involved in initialing the corrections</li> <li>b) This will counter the defense's saying that the suspects signed blank pages</li> </ol> </li> <li>4. When reading the completed confession with suspect, have the suspect correct the errors and initial them</li> <li>5. Never ask suspects to sign confessions               <ol style="list-style-type: none"> <li>a) Instead said "Place your name here and date it."</li> </ol> </li> </ol>	<p><b>SLIDE: 5-2-52</b></p>



## PRESENTATION

## APPLICATION

**VIII. USING CONFRONTATION INTERROGATION IN THE FIELD**

- A. Field officers may use elements of the Confrontation Interrogation Technique for field interrogations
  - 1. Create an atmosphere of confidence and guilt
  - 2. Theme development
  - 3. Handling denials
  - 4. Posing negative alternative questions
- B. Handling suspects at the crime scene where the suspect may be susceptible to confession because of emotions
- C. The most important aspect of interrogating suspects in the field is not to argue with their alibis
  - 1. This causes the suspects to lock themselves into their alibis
    - a) Frustrates theme development and handling denials as listed above

**SLIDE: 5-2-53**

**SUMMARY:**

An interview involves a complex combination of skills possessed by the investigator. Knowledge of human behavior, motivation, and body language; and interview tactics and techniques all come together to result in a successful ending.

**EVALUATION:**

The student will complete the written quiz and student activities at a time determined by the instructor.

**ASSIGNMENT:**

Review your notes and read Chapter 5-2 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

## ACTIVITY SHEET 5-2-1

### PERSONAL SPACE AND STRESS

TIME FRAME: 0:15

MATERIALS NEEDED:

- None

INTRODUCTION:

This activity provides you with the opportunity to feel the discomfort an interviewer can cause when moving into the suspect's "space." This discomfort can then be used to the interviewer's advantage.

DIRECTIONS:

1. Stand back-to-back with another student.
2. Upon your command, will turn around, feet almost touching, and look the other student in the eye. Try to remain solemn and **not** speak.
3. Once either of you laughs or steps away, your team is finished and should return to your seats.
4. Be prepared to briefly discuss the feelings you experienced.



## ACTIVITY SHEET 5-2-2

### CONDUCTING AN INTERVIEW



TIME FRAME: 0:30

MATERIALS NEEDED:

- Writing paper
- Pencil or pen

INTRODUCTION:

This activity provides you with the opportunity to conduct an interview and determine specific activities and observations of your suspect.

DIRECTIONS:

1. Pair up with a student you didn't share a ride to or from class. One of you is the "suspect" and the other is the "interviewer."
2. The "interviewer" will question the "suspect" about his or her activities and observations between the time the suspect left home or work and arrived at class **yesterday** (or the last time the class met). You could also use the timeframe between the time the last class was dismissed and the suspect arrived home or at work.
3. The interviewer will write down relevant information acquired during the interview.
4. The interviewer will give a brief verbal summary of his or her written report to the class.

## **INTRODUCTION TO TAPED INTERVIEWS**

- The following interview is being recorded with your permission, is that correct?
- It is very important that you wait until I am completely finished with a question before you answer. This will allow you to hear the entire question before you answer it. Also, we will not be speaking at the same time.
- Do you understand?
- When you do answer my questions be sure to give a verbal response instead of shaking your head. Use the words yes or no instead of “uh huh” or “unh unh” and do not use your hands to describe something as the recorder can not distinguish or pick up these responses.
- Do you understand that?
- If a question seems confusing or you don't understand it please say so and I will clarify it for you.
- I may ask you a question that requires you to estimate such as time or distance. Please do not guess at the answer if you do not know. The difference between a guess and an estimate is if I asked you what time you got up today you may not know but you could estimate because you know when you had to be at work so you could estimate backwards and provide an answer. However, if I asked you what time I went to work today, you would have to guess since you do not know when I get up or go to work.
- Do you understand this?
- Please state your full name and spell your last name.
- What is your address?
- What are your home and work telephone numbers?
- What is your date birth?
- Are you giving this statement voluntarily?
- Have I made you any promises or reward for your statement?
- Is there any reason why you would not have good recall or memory today?
- Are you under the influence of any alcohol, narcotics or medication?

### WITNESS INTERVIEWING FORMAT

1. Case #99-328-4
2. Interview of: John Wilson, FFI
3. Monte Vista Fire Station  
2249 Jamacha Road  
El Cajon, CA 92019
4. (619) 555-0364
5. 9-4-99
6. 1150 hours
7. I interviewed firefighter Wilson at the Monte Vista Fire Station. He related the following:
8. He said he observed Dan Beck give Captain Snow pills approximately five times last year (1993) and that it did not appear that anything was wrong or that they were trying to hide anything. He said the first complaints he heard from Beck were late last fire season. He said that Beck and Smith said they were having a problem with Captain Snow this fire season and they didn't want to be around him. He said he told Beck that if he didn't like Captain Snow's actions that he should tell someone to get it stopped.  
  
Fire fighter Wilson said he had never witnessed Captain Snow ingest any pills.
9. 

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Jack M. Armstrong, Division Chief, #864
10. Attachment No. 12
11. 1 of 2

#### LEGEND

1. Case Number
2. Name of interviewee
3. Address of interviewee
4. Telephone of interviewee
5. Date interviewed
6. Time interviewed
7. Location of interview
8. Body of interview (synopsis, quotes, questions/answers)
9. Signature of interviewer (printed/typed name, badge #)
- 10 Attachment number
- 11 Page number (if more than one page, show as 2 of 5, etc.)

**TOPIC:** INTRODUCTION TO JUVENILE LAW

**TIME FRAME:** 1:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz and student activity

*Behavior:* The student will confirm a knowledge of differences between juvenile law and adult law by completing the written quiz and student activity

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 5-3, pages 169-178

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- Activity Sheet 5-3-1

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- California Welfare and Institutions Code
- California Legal Source Book

**PREPARATION:**

Under the law, juveniles are handled differently than adults. Fire investigators must be aware of these differences so they can treat juveniles accordingly.





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>2) Courts are in disagreement over whether it is “clearproof” or “proof beyond a reasonable doubt”</p> <ul style="list-style-type: none"> <li>• Francisco N. (1986) 186 Cal. App. 3d 175)</li> </ul> <p>c) Gladys R. questionnaire</p> <p>1) Some jurisdictions require this questionnaire to be completed</p> <p>2. Ages 14-17</p> <p>a) Considered responsible for their actions</p> <p>b) Still within juvenile court system</p> <p>3. Ages 16-17</p> <p>a) Can be found unfit for treatment under juvenile law</p> <p>b) Superior court judge can determine to have juvenile tried as an adult</p> <p>1) W&amp;I Code §606</p> <p>D. Youthful firesetters and intent</p> <p>1. Most juveniles can be expected to understand the wrongfulness of the act of arson by age 8</p>	<p>Complete Activity Sheet 5-3-1.</p> <p><b>SLIDE: 5-3-3</b></p>

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2. A small child who, while playing with matches, accidentally sets a building afire, is negligent but not guilty of arson               <ul style="list-style-type: none"> <li>a) Curiosity is not criminal intent and, therefore, not arson</li> </ul> </li> <li>3. With young children, proving the intent to start the fire is necessary, along with proving they were the cause of the fire</li> <li>4. Youthful firesetters and intent</li> <li>5. Investigating the child-set fire               <ul style="list-style-type: none"> <li>a) Location of the fire may aid in identifying a child or young person as the firesetter</li> </ul> </li> </ul>	
<p>E. Dependency – W&amp;I Code §300</p> <ul style="list-style-type: none"> <li>1. No parental care or control</li> <li>2. Destitute or no suitable home</li> <li>3. Dangerous through mental or physical abnormality</li> <li>4. Victim of neglect or abuse</li> </ul>	<p><b>SLIDE: 5-3-4</b></p>
<p>F. Status Offenders – W&amp;I Code §601</p> <ul style="list-style-type: none"> <li>1. Ward of the court               <ul style="list-style-type: none"> <li>a) Known as a “601”</li> </ul> </li> <li>2. Habitually disobedient or truant</li> </ul>	<p><b>SLIDE: 5-3-5</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>3. Refuses to obey reasonable, proper orders of parent, guardian, or custodian</li> <li>4. Beyond control of same</li> <li>5. A minor because of age alone violates a city or county curfew law</li> </ul> <p>G. Law offenders/violators – W&amp;I Code §602</p> <ul style="list-style-type: none"> <li>1. Can also end up as a ward of the court               <ul style="list-style-type: none"> <li>a) Known as a “602”</li> </ul> </li> <li>2. Any minor that has broken the law               <ul style="list-style-type: none"> <li>a) United States</li> <li>b) California</li> <li>c) City or county ordinance that defines a crime other than a curfew</li> </ul> </li> </ul>	<p><b>SLIDE: 5-3-6</b></p>
<p><b>II. TEMPORARY CUSTODY</b></p> <p>A. Detention</p> <ul style="list-style-type: none"> <li>1. Must be released within 48 hours               <ul style="list-style-type: none"> <li>a) Unless petition filed</li> <li>b) Excludes nonjudicial days</li> </ul> </li> <li>2. Written explanation if held for six hours               <ul style="list-style-type: none"> <li>a) Prepared within 72 hours</li> <li>b) Copy to case record</li> </ul> </li> </ul>	<p><b>SLIDE: 5-3-7</b></p>

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>c) Copy to parent, guardian, or custodian</li> <li>d) Detention over 24 hours requires probation supervisor review</li> </ul> <p>3. Status offender (601) or law offender (602)</p> <ul style="list-style-type: none"> <li>a) Do not detain in facility with adult offenders               <ul style="list-style-type: none"> <li>1) Jail</li> <li>2) Police lock-up</li> </ul> </li> <li>b) Exception is Driving Under the Influence               <ul style="list-style-type: none"> <li>1) Breath or chemical test at jail</li> <li>2) Do not lock in cell or room</li> <li>3) Continuous supervision by peace officer or facility employee</li> <li>4) No contact with adult offenders</li> <li>5) No longer than two hours</li> </ul> </li> </ul>	<p><b>SLIDE: 5-3-8</b></p>
<p><b>III. CONSTITUTIONAL RIGHTS</b></p> <ul style="list-style-type: none"> <li>A. Miranda – W&amp;I Code §625           <ul style="list-style-type: none"> <li>1. Custody               <ul style="list-style-type: none"> <li>a) Must be warned of their Miranda rights whether or not you are going to question them                   <ul style="list-style-type: none"> <li>1) Record date and time of admonishment</li> </ul> </li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 5-3-9</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>2. Interrogation</p> <ul style="list-style-type: none"> <li>a) No difference in requirements from adults</li> <li>b) Questioning must stop if the juvenile requests to call or see parents, probation officer, grandparents, or attorney               <ul style="list-style-type: none"> <li>1) Under California law, an assertion of constitutional rights has been initiated</li> <li>2) There is no obligation to advise the juvenile about contacting parents, prior to questioning</li> <li>3) Under federal law, a juvenile requesting to see a probation officer is not an assertion of rights</li> </ul> </li> </ul> <p>B. Telephone calls</p> <ul style="list-style-type: none"> <li>1. Officers need not advise juveniles of any more rights than an adult</li> <li>2. Officers do not need to advise juveniles that they have a right to speak to their parents before an interrogation</li> <li>3. W&amp;I Code §627(a) requires an officer to notify the parents if a juvenile is taken to juvenile hall               <ul style="list-style-type: none"> <li>a) This section does not require that the parents be notified when the juvenile is taken to the police station in temporary custody</li> </ul> </li> </ul>	



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>4. W&amp;I Code §627(b) states that a juvenile has the right to make two phone calls after being placed into custody</p> <ul style="list-style-type: none"> <li>a) This section does not require the juvenile to be advised of this right</li> <li>b) Phone calls must be allowed within 1 hour of the request</li> <li>c) Made in the presence of a law enforcement officer</li> </ul> <p><b>NOTE:</b> The case that discusses the above points, as well as other points of juvenile law, is in re: <u>Michael J.</u> 110 CA3d 835 (1980).</p> <p>5. All arrested persons have the right to make three telephone calls (PC 851.5)</p> <ul style="list-style-type: none"> <li>a) It is a misdemeanor to willfully deprive a juvenile the right to make these calls</li> <li>b) Parents must be notified if juvenile is in custody at juvenile hall <ul style="list-style-type: none"> <li>1) This does not apply to a temporary custody at a police station</li> </ul> </li> </ul> <p>C. Interviewing</p> <ul style="list-style-type: none"> <li>1. Educational facility <ul style="list-style-type: none"> <li>a) Peace officer has right</li> </ul> </li> </ul>	



## PRESENTATION

## APPLICATION

## IV. OTHER LAWS

## A. Child abuse

1. Required to report "reasonable suspicion" of abuse
  - a) Burns
  - b) Scars
  - c) Cuts
  - d) Other injuries

**NOTE:** See report form.

2. Must be reported immediately
  - a) Telephone
  - b) Radio
3. Followed by written report
  - a) Within 36 hours
4. Past incidents must be reported even beyond statute of limitations

**SLIDE: 5-3-10**

What might constitute "reasonable suspicion?"

**SUMMARY:**

The juvenile justice system has the health and welfare of juveniles as a primary objective. The investigating officer must be aware of the differences in the law regarding the treatment of juveniles.

**EVALUATION:**

The student will complete the written quiz at and student activity a time determined by the instructor.

**ASSIGNMENT:**

Review your notes and read Chapter 5-3 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

## ACTIVITY SHEET 5-3-1

### GLADYS R. QUESTIONNAIRE



TIME FRAME: 0:30

MATERIALS NEEDED:

- Gladys R. questionnaire
- Pen or pencil

INTRODUCTION:

This activity provides you with the opportunity to use the Gladys R. questionnaire to determine if a juvenile knows the difference between right and wrong

DIRECTIONS:

1. Pair up with another student.
2. Select one of you to be the "interviewer."
3. Interview the suspect using the Gladys R. questionnaire on the following two pages.
4. Be prepared to briefly discuss the results of your interview with the class.

**GLADYS R. QUESTIONNAIRE**

To be used for all arrestees under 14 years of age. To be given after Miranda rights have been waived. If subject refuses to waive his rights, parent's answer below is adequate.

*From Minor*

1. Do you know the difference between doing what's right and what's wrong?

---

2. Give me an example of something that is right to do.

---

3. Give me an example of something that is wrong to do.

---

4. Do you go to school?

---

5. What have they taught you in school about it being wrong to

---

6. What has your mother or father taught you about it being wrong to

---

7. Does your mother or father punish you for doing something they have told you is wrong?

---

---

*From Minor's Parents*

1. Have you taught your child the difference between right and wrong?

---

---

2. Have you taught him/her that it is wrong to

---

---

3. Do you send your child to school?

---

---

4. Can he/she read and write?

---

---

5. Do you think your child knows it is wrong to

---

---

Note: Extra care should be taken in advising your subjects of Miranda rights. Determine that he or she knows the meaning of lawyer, judge, court, silent, appointed, etc. Indicate these explanations in their waiver.

**TOPIC:** SCENE INVESTIGATION

**TIME FRAME:** 2:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz

*Behavior:* The student will confirm a knowledge of the procedures for properly conducting an investigation at the scene of a fire fatality by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 6-1, pages 179-210

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan
- "Burning Evidence-the New Detectives video, Discovery (recommended)

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Fire Investigation 1A Student Manual, SFT, 1996
- Kirks Fire Investigation, John DeHaan, Brady Prentice Hall, 4<sup>th</sup> Edition, 1997
- Post Mortem Protocol, Foundation for Fire Safety, 1983
- The Investigation & Prosecution of Arson, CDA & SFM, Second Edition, 1995
- Guide for Investigation of a Line-of-Duty Death, IAFC
- Fire Fighter Line-of-Duty Death and Injury Investigations, IAFF, 1997

**PREPARATION:**

There are a number of different individuals as well as professional disciplines that are involved with investigating fire fatalities. It is important that the investigator understands the roles of the other professionals. The overall investigation must be coordinated so that it results in an effective operation.

**PRESENTATION**

**APPLICATION**

**I. FIRE DEATH OR INJURY**

- A. Death or injury discovered at fire scene
- B. Death or injury as a result of escaping or fleeing fire
- C. Death or injury as a result of involvement in fire suppression
- D. Death or injury may occur at a structure, vehicle, or outdoor fire scene
- E. Regardless of type or scene of fire, investigation must be systematic

**SLIDE: 6-1-1**

- F. Person involved
  - 1. Civilian
    - a) Potential criminal act
    - b) Possible civil action/law suit
  - 2. Fire fighter
    - a) Occupational injury investigation
    - b) National Institute for Occupational Safety and Health Investigation (NIOSH)
    - c) Departmental investigation
      - 1) Resource available from International Association of Fire Chiefs, "Guide for Investigation of a Line-of-Duty Death"

**SLIDE: 6-1-2**







# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

2. Exposed to fire by-products
    - a) Fatalities
    - b) Serious injuries
  3. Relationship to fire spread
  4. Secure scene and document
- D. Treat as crime scene
1. Proper approach to prevent destruction of evidence
  2. Secure scene
    - a) Interior perimeter
    - b) Exterior perimeter
  3. Limit access
    - a) Crime scene log
  4. Evaluate prefire access points
    - a) Forced entry

**SLIDE: 6-1-7**

### III. INVESTIGATIVE CONSIDERATIONS

- A. Are the remains human?
1. Assume that they are human
  2. Consider multiple bodies
    - a) Child protected by parent
  3. Possible large animal



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

## B. Identity of the victim?

1. Determine identity of the victim
2. Fingerprints
3. Dental records
4. Surgical scars
5. History of orthopedic injuries or procedures
6. Heart valves, pacemakers
7. Personal effects or jewelry
  - a) Near or on body
  - b) Not the most reliable
8. Caution - body switched
  - a) Insurance fraud
  - b) Homicide

## C. Cause of death

1. Immediate medical event
  - a) Brought cessation of life
2. Province of medical examiner or coroner
  - a) Required by law
  - b) Violent deaths
  - c) Fire deaths

**SLIDE: 6-1-8**

PRESENTATION

APPLICATION

D. Manner of death

1. Circumstances in which the cause of death occurred
2. Determined by pathological and toxicological findings
3. Supported by reconstruction of fire scene
4. Supported by reconstruction of victim's activities
5. Five accepted manners of death
  - a) Natural
  - b) Accidental
  - c) Homicide
  - d) Suicide
  - e) Undetermined

**SLIDE: 6-1-9**

E. Was person alive and conscious at time of fire?

1. Indications of asphyxiation
2. Carbon monoxide levels, carboxyhemoglobin (COHb)
3. Degree of inhalation injuries
4. Combustion products in blood

**SLIDE: 6-1-10**



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

5. Soot in airways
  - a) Inhaled
  - b) Merely deposits on mouth, lips, and nasal openings
6. Clothing evaluation – indicates activities engaged in
7. Position found
  - a) Near ignition source (stove, furnace, water heater)
  - b) Fleeing
  - c) Sleeping
  - d) Near exit
  - e) Attempting to extinguish

**SLIDE: 6-1-11**

F. Was death due to the fire or only associated with the fire?

1. The most critical question
2. Comprehensive investigation team approach
3. Multiple investigative disciplines involved
4. Death caused by fire
5. Victim dead before the fire
  - a) Homicide

**SLIDE: 6-1-12****SLIDE: 6-1-13**

PRESENTATION

APPLICATION

- b) Suicide
- c) Natural
- d) Accidental

**IV. CAUSE OF FIRE, CAUSE AND MANNER OF DEATH**

**SLIDE: 6-1-14**

A. Cause of fire

- 1. Determine area of origin
- 2. Determine point of origin
- 3. Determine ignition source
- 4. Determine cause of fire
  - a) Natural
  - b) Accidental
  - c) Incendiary
  - d) Undetermined

**SLIDE: 6-1-15**

B. Cause of death

- 1. The immediate medical event that brought cessation of life
- 2. Determined by medical examiner, coroner or equivalent public official
- 3. Mandated by law
- 4. Examples
  - a) Asphyxiation



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

- b) Myocardial infarction
- c) Kidney failure
- d) Respiratory failure
- e) Toxemia

**SLIDE: 6-1-16**

### 5. Time frames - mode involved

- a) Death ensues rapidly (seconds, minutes, or hours)
  - 1) Heat
  - 2) Smoke
  - 3) Carbon monoxide
- b) Death in the first day or two after the incident
  - 1) Shock
  - 2) Fluid loss
  - 3) Electrolyte imbalance
- c) Death days or weeks after fire
  - 1) Infections
  - 2) Organ failure

**SLIDE: 6-1-17**

### C. Manner of death

- 1. Circumstances in which the cause of death occurred



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

2. Determined by fire investigator in cooperation with other investigation team members
3. Five generally accepted manners of death
  - a) Accidental
    - 1) Accidental death prior to fire
    - 2) Death from an accidentally occurring fire
  - b) Natural
    - 1) Natural death prior to fire
    - 2) Death due to pre-existing condition exacerbated by fire environment
  - c) Homicide
    - 1) Intentionally killed prior to fire
    - 2) Fire used as an instrument to cause the death
  - d) Suicide
    - 1) Suicide prior to fire
    - 2) Fire used as an instrument to effect suicide
  - e) Undetermined
    - 1) Unable to determine manner of death
    - 2) Based on existing information

**SLIDE: 6-1-18**

**SLIDE: 6-1-19**

PRESENTATION	APPLICATION
<p style="text-align: center;">3) Potential to reopen investigation if new or additional information is uncovered or revealed</p> <p>D. Linkage of fire cause, cause of death, and manner of death</p> <ol style="list-style-type: none"> <li>1. Cannot be separated in fire scene investigation</li> <li>2. Interrelated</li> <li>3. The deceased or injured                             <ol style="list-style-type: none"> <li>a) A fire scene indicator</li> <li>b) Part of the fuel load</li> <li>c) Burn patterns on body and clothing evaluated</li> <li>d) Determine if deceased or injured activities contributed to fire ignition or fire spread</li> <li>e) Exceptions                                     <ol style="list-style-type: none"> <li>1) Large fires with many deaths remote from area of origin   <ul style="list-style-type: none"> <li>• Asphyxiation deaths in noninvolved upper floors of a high rise structure</li> </ul> </li> <li>2) Multiple deaths in conflagration   <ul style="list-style-type: none"> <li>• Oakland Hills – October 1991</li> <li>• 25 deaths (1 fire fighter, 1 police officer)</li> <li>• 3,000 structures</li> </ul> </li> </ol> </li> </ol> </li> </ol>	<p style="text-align: center;"><b>SLIDE: 6-1-20</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

## V. TEAM INVESTIGATIVE EFFORT

A. Many disciplines and professionals involved in the investigation

1. Coordination is essential

- a) Logistics
- b) Time commitments and restraints
- c) Support personnel and equipment
  - 1) Personal protective equipment
  - 2) Lighting equipment and generators
  - 3) Shoring equipment to stabilize structure
  - 4) Video camera
  - 5) Photography equipment
  - 6) Communications equipment
  - 7) Evidence containers
  - 8) Excavation equipment and operators
  - 9) Sifting screens for fire debris
  - 10) Hand tools for scene examination and overhaul
  - 11) Secure area to store seized evidence (chain of custody)

**SLIDE: 6-1-21**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

- d) Incident command system should be used
    - 1) Assign tasks to qualified personnel
  - e) Multiple jurisdictions
    - 1) City, county, state or federal
  - f) Multiple departments
    - 1) Sheriff, police, fire, medical
2. Primary investigator
- a) Normally the individual that is mandated to prepare or is responsible for the final report
  - b) May be a fire investigator or law enforcement personnel
  - c) Responsible for delegation of activities at scene
  - d) Usually the fire investigator assumes lead of investigation
    - 1) Fire is assumed to be of accidental or natural causes until those causes have been eliminated (negative corpus)
    - 2) Fire investigator is most appropriately trained individual to process fire scene, document and process fire scene evidence

**SLIDE: 6-1-22**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

- 3) Fire scene must be treated as crime scene so that evidence is properly preserved, collected, and documented
  - 4) Evidence may still be on the scene only its form or characteristics have been changed by fire process
  - 5) Evidence may have been contaminated during fire suppression process
  - 6) Fire investigator trained to recognize those changes (tool marks, condition of glass)
  - 7) Some evidence may be covered by fire debris and needs to be recovered systematically and appropriately
3. Investigative team members
- a) Fire investigator
    - 1) Statutory responsibility to prepare fire investigation report
    - 2) Normally assumes lead position with due regard for jurisdictional responsibilities of other team members
  - b) Homicide investigator
    - 1) Normally appropriately trained to process homicide scene

**SLIDE: 6-1-23**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2) Fire scene is a very hostile crime scene environment</li> <li>3) Smoke, heat, toxic gases, and structure collapse potential</li> <li>4) In the absence of an obvious homicide, the homicide investigator must defer until cause of fire is determined                             <ul style="list-style-type: none"> <li>• Remains a fire investigation</li> </ul> </li> <li>5) Until cause of fire is determined or manner of death is established (sometimes several days) actual commission of crime is not verified</li> <li>c) Deputy District Attorney                             <ul style="list-style-type: none"> <li>1) Assist with search and seizure issues</li> <li>2) Early involvement with investigation in the event that there is future action in criminal justice system</li> </ul> </li> <li>d) Pathologist                             <ul style="list-style-type: none"> <li>1) Assist medical examiner</li> </ul> </li> <li>e) Radiologist                             <ul style="list-style-type: none"> <li>1) X-rays to assist with identification (old injuries)</li> </ul> </li> <li>f) Toxicologist                             <ul style="list-style-type: none"> <li>1) Assist medical examiner</li> </ul> </li> </ul>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>g) Forensic odontologist               <ul style="list-style-type: none"> <li>1) Assist with dental record identification</li> </ul> </li> <li>h) Forensic anthropologist               <ul style="list-style-type: none"> <li>1) Assist with fire damaged remains identification</li> </ul> </li> <li>i) Medical examiner/coroner               <ul style="list-style-type: none"> <li>1) Post mortem examination</li> <li>2) Autopsy</li> <li>3) May respond to the scene</li> </ul> </li> <li>j) Medical examiner investigator               <ul style="list-style-type: none"> <li>1) Responds to the scene</li> <li>2) Takes responsibility for personal effects</li> <li>3) Transportation of the body</li> </ul> </li> <li>k) Crime scene investigators/technicians               <ul style="list-style-type: none"> <li>1) Photographers</li> <li>2) Video camera operators</li> <li>3) Crime scene sketch</li> <li>4) Fingerprints</li> </ul> </li> <li>l) Evidence technicians               <ul style="list-style-type: none"> <li>1) Process, document, and transport evidence</li> </ul> </li> </ul>	



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

- m) Flammable/combustible liquid detecting canine and handler
  
- n) Police personnel
  - 1) Assist with perimeter control
  - 2) Interview witnesses
  - 3) Assist with crowd and traffic control
  
- o) Fire department personnel
  - 1) Overhaul activities
  - 2) Structure safety
  - 3) Interview first responders
  
- p) Public Information Officer
  - 1) Liaison with media and press
  
- q) Emergency medical personnel
  - 1) Emergency medical technician, paramedic
  - 2) Treatment of injured or predeath treatment
  - 3) Interview for statements by injured or spontaneous comments
  - 4) Observations of burn damage to clothing and body
  - 5) Maintain possession or identify location of clothing

**SLIDE: 6-1-24**

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>r) Hospital emergency room personnel               <ul style="list-style-type: none"> <li>1) Interview for statements made by injured</li> <li>2) Observations of burn damage to clothing and body</li> <li>3) Blood gases analyzed</li> </ul> </li>   <li>B. Location of body               <ul style="list-style-type: none"> <li>1. Body remote from fire or area of origin                   <ul style="list-style-type: none"> <li>a) If cause or manner of death not apparent                       <ul style="list-style-type: none"> <li>1) Whether or not fire damaged</li> <li>2) Assume criminal action</li> <li>3) Treat as crime scene</li> <li>4) All appropriate precautions</li> <li>5) Coordinated by lead investigator</li> </ul> </li> <li>b) If cause or manner of death is obviously result of homicide                       <ul style="list-style-type: none"> <li>1) Area is deemed to be safe by fire department</li> <li>2) No obvious involvement with fire activity</li> <li>3) Investigation may bifurcate</li> <li>4) Homicide investigator assumes normal functions and duties of the homicide crime scene</li> </ul> </li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 6-1-25</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

2. Body located at area of origin or impacted by fire spread, including fire by products (heat, smoke, soot, and gases)
  - a) Body left in place
  - b) Protect from further destruction
  - c) Investigation coordinated by lead investigator
  - d) Coordinate activities specifically with homicide investigator
  - e) Fire death investigation is different from a typical homicide investigation
  - f) Body can actually be part of the fuel load

**SLIDE: 6-1-26**

### C. Preliminary assignment of tasks

1. Perimeter security
  - a) Exterior of building or incident scene (vehicle, outdoors)
  - b) Police, law enforcement
2. Crime scene log
  - a) Record who enters secured area
  - b) Police, law enforcement function
3. Area of origin, cause of fire determination
  - a) Fire investigator having statutory responsibility



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

4. Area where body found or where serious injury occurred
  - a) Fire investigator, homicide investigator, medical examiner's investigator
5. Photography assignments
6. Video tape operator assignments
7. Sketch and diagram assignments
8. Evidence technician assignments

## VI. SCENE INVESTIGATION – BODY LOCATION

### A. Initial actions

1. Conference with incident commander
  - a) Confirmation of injuries or fatalities (location/moved)
  - b) Actions of first arriving fire or police personnel
  - c) What suppression or overhaul activities still being conducted
  - d) Coordinate activities
  - e) Direct cessation of all unnecessary suppression or overhaul activities
  - f) Direct fire personnel to maintain integrity of secure area
  - g) Inform fire personnel that fire incident is now being treated as a crime scene



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

PRESENTATION	APPLICATION
<ol style="list-style-type: none"> <li>2. Confirm that scene is safe               <ol style="list-style-type: none"> <li>a) Building stable</li> <li>b) Utilities hazard mitigated (electricity and gas)</li> <li>c) Adequate ventilation</li> <li>d) Hazardous materials identified and mitigated</li> <li>e) Use proper and appropriate safety equipment</li> </ol> </li> <li>3. Overhaul of scene will be done by the investigation team               <ol style="list-style-type: none"> <li>a) Hand tools</li> <li>b) Beware of contamination to scene if gas powered tools used</li> </ol> </li> <li>4. Leave the body in position found               <ol style="list-style-type: none"> <li>a) Protect from additional damage</li> <li>b) Fire suppression activities may be ongoing</li> <li>c) Fire byproducts such as heat, steam, and gases may damage body</li> </ol> </li> <li>5. If body has been moved prior to initiation of investigation               <ol style="list-style-type: none"> <li>a) Serious injury of what was assumed to be viable patient</li> <li>b) To protect from additional damage due to fire spread or building collapse</li> </ol> </li> </ol>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

- c) Determine who moved injured party or fatality (fire, police, paramedics, civilians, or ambulatory injured victim)
  - d) Statement from personnel involving condition prior to movement
  - e) Sketch of area from personnel involved in the movement
  - f) Determine if any additional injury or damage was incurred as a result of the movement
6. If body moved from original location but still at incident site
- a) Protect body
  - b) Protect from public view
  - c) Search for evidence that may have been moved with body
  - d) Retrace route that body was moved to search for evidence that may have fallen off body
  - e) Establish perimeter around body
  - f) Examine with homicide investigator and medical examiner's investigator prior to transport from scene
  - g) Photographs of body prior to transport
- B. Area around the body still at original scene
- 1. Preliminary examination of area around body must be done prior to removal

**SLIDE: 6-1-27**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>a) Photographs of area</li> <li>b) Videotape</li> <li>c) Sketch</li> <li>d) Hand search three feet out from body</li> <li>e) Be alert for flammable/combustible liquid indications</li> <li>f) Flammable/combustible liquid containers and caps</li> <li>g) Extra fuel placed on or near body (ordinary combustibles)</li> <li>h) Jewelry, personal belongings, teeth or glasses near body               <ul style="list-style-type: none"> <li>1) Victim's</li> <li>2) Suspects</li> <li>3) Used for identification</li> </ul> </li> <li>i) Clothing near body               <ul style="list-style-type: none"> <li>1) Victim's</li> <li>2) Suspects</li> </ul> </li> <li>j) Weapons</li> <li>2. Detailed examination of area will be conducted once body has been removed               <ul style="list-style-type: none"> <li>a) Evidence may be under body</li> <li>b) Overhaul can not be completed with body in area</li> </ul> </li> </ul>	

PRESENTATION

APPLICATION

C. Examine body in place

1. Parts of body missing

- a) Due to prefire trauma
- b) Caused by fire
- c) Caused by building collapse
- d) Damaged by fire suppression crews

**SLIDE: 6-1-28**

2. Damage on body

- a) Consistent with other damage in area
- b) Amount of burning, charring
- c) Defensive wounds to hands or arms
- d) Blunt trauma
- e) Penetrating trauma

**SLIDE: 6-1-29**

3. Fire patterns on body and clothing

- a) Consistent with fire spread in room

**SLIDE: 6-1-30**

4. Obvious fractures of bones

- a) Caused by body response to heat
- b) Due to building collapse
- c) Prefire injury
- d) Defensive injury



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

5. Shrinkage of bone
  - a) Caused by fire behavior
  - b) Exposure to caustic agents
6. Tightening of skin
  - a) Normal reaction to heat exposure
7. Damage to skull
  - a) Due to external trauma
  - b) Prefire or structure collapse
  - c) Fire caused fractures along suture lines
  - d) Penetrating or blunt trauma
8. Reduction of body weight
  - a) Weight loss due to destruction of body parts
  - b) Loss of fluid
  - c) Body fat - fuel load
9. Skin blistering
  - a) Exposure to heat
  - b) Moisture in epidermis can facilitate post mortem blistering
  - c) Exposure to caustic chemicals
10. Discoloration of exposed internal tissue
  - a) Normally turn gray or pale color



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

11. Skin color
  - a) Carbon monoxide (carboxyhemoglobin COHb)
  - b) Reddish color
  - c) Difficult to differentiate at fire scene
  
12. Blood on body
  - a) Prefire wounds
  - b) Consult with medical examiner's investigator
  
13. Teeth
  - a) Present
  - b) Trauma
  - c) Dentures
  - d) Used to assist with identification
  
14. Change of hair color
  - a) Identification purposes
  - b) May change due to exposure to heat and fire
  
15. Damage patterns on body
  - a) Is damage to body consistent with fuel load
  - b) More severely damaged than surrounding fuels

**SLIDE: 6-1-31**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

- c) Less severely damaged than expected due to fuel load

### 16. Clothing

- a) Examine for penetration by foreign objects
- b) Clothing consistent with reported activities of victim

### 17. Weapons

- a) Firearms
- b) Right or left side of body
- c) Used for defense
- d) Mechanism for suicide
- e) Knife present

### 18. Airways

- a) Soot or carbon in visible airways

## D. Removal of body

### 1. Confirm

- a) Photographs of body and surrounding area
- b) Videotape of body and surrounding area
- c) Preliminary sketch and diagram

- 2. Once body is moved it can never be accurately repositioned

**SLIDE: 6-1-32**



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

3. Body removal coordinated with
    - a) Medical examiner's investigator or coroner (whoever will be transporting body from scene)
    - b) Homicide investigator
  4. Proper body fluid precautions (gloves)
  5. Examine previously protected side of body
    - a) Photograph and videotape
    - b) Blunt or penetrating trauma
  6. Examine protected area that was underneath body
    - a) Look for trace evidence
    - b) Weapons
    - c) Clothing
    - d) Smoking material (matches, cigarettes)
    - e) Drug paraphernalia
    - f) Prescription medication
    - g) Photograph and videotape formerly protected area
- E. After body is removed
1. Process scene for determination of area of origin

**SLIDE: 6-1-33**

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2. Grid area               <ul style="list-style-type: none"> <li>a) Divide into manageable sectors</li> </ul> </li> <li>3. Sift debris               <ul style="list-style-type: none"> <li>a) Missing body parts and fragments may be mixed in debris</li> <li>b) Sifting through screens most reliable recovery method</li> </ul> </li> <li>4. Evidence               <ul style="list-style-type: none"> <li>a) Photographed in place prior to seizure</li> </ul> </li> <li>5. Recover or secure evidence that has inadvertently been taken from scene               <ul style="list-style-type: none"> <li>a) Clothing or personal belongings transported to hospital</li> </ul> </li> <li>6. Before leaving scene               <ul style="list-style-type: none"> <li>a) Determine if scene security is still required</li> <li>b) Debrief all investigative team members</li> <li>c) Obtain consent for re-entry if appropriate</li> </ul> </li> </ul>	
<p><b>VII. POST MORTEM EXAMINATION OF FIRE VICTIMS</b></p> <ul style="list-style-type: none"> <li>A. Medical examiner or coroner's involvement           <ul style="list-style-type: none"> <li>1. Early notification in the process               <ul style="list-style-type: none"> <li>a) Some post mortem tests need to be conducted as soon as possible</li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 6-1-34</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>b) Some blood tests are time sensitive</li> <li>2. Photographs to medical examiner               <ul style="list-style-type: none"> <li>a) Polaroid are acceptable</li> <li>b) Fire scene</li> <li>c) Location of body</li> <li>d) Position of body</li> <li>e) Body in context of entire scene</li> <li>f) Photographs assist medical examiner understand the physical environment involved</li> </ul> </li> <li>3. Preliminary investigation information to medical examiner               <ul style="list-style-type: none"> <li>a) Source and nature of fire</li> <li>b) Ordinary combustibles</li> <li>c) Chemicals, hazardous materials</li> <li>d) Type of occupancy (residential, commercial)</li> <li>e) Victim at area of origin</li> <li>f) Victim remote from area of origin</li> <li>g) Activities of victim prior to fire, if known</li> <li>h) Indications of drug use or medication</li> <li>i) Indications of alcohol use</li> <li>j) Indications of physical impairment                   <ul style="list-style-type: none"> <li>1) Wheel chair</li> </ul> </li> </ul> </li> </ul>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2) Walker</li> <li>3) Crutches or cane</li> </ul> <p>B. Medical examiner's procedures</p> <ul style="list-style-type: none"> <li>1. Photographs of victim               <ul style="list-style-type: none"> <li>a) Before and during examination</li> </ul> </li> <li>2. Record and observe burns               <ul style="list-style-type: none"> <li>a) Face</li> <li>b) Nasal hair and passages</li> <li>c) Degree of burns and body surface affected</li> <li>d) Blistering and charring</li> </ul> </li> <li>3. Soot in airways               <ul style="list-style-type: none"> <li>a) Nasal</li> <li>b) Mouth</li> <li>c) Trachea</li> </ul> </li> <li>4. Arterial blood samples               <ul style="list-style-type: none"> <li>a) COHb</li> <li>b) Blood cyanide</li> <li>c) Six vacuutainers of 10ml each (red cap)</li> <li>d) Six vacuutainers of 10ml each (gray cap)</li> </ul> </li> <li>5. Eyes for corneal burns               <ul style="list-style-type: none"> <li>a) Acid byproducts from burning synthetic material</li> </ul> </li> </ul>	



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>b) Hydrogen chloride (HCl) (source-vinyls) – also produces pulmonary edema</li> <li>c) Hydrogen bromide (HBr)</li> <li>d) Hydrogen fluoride (HF)</li> </ul> <p>6. Skin color</p> <ul style="list-style-type: none"> <li>a) Face</li> <li>b) Hands</li> <li>c) Exposed skin surfaces</li> </ul> <p>7. Tissue samples</p> <ul style="list-style-type: none"> <li>a) Respiratory tract <ul style="list-style-type: none"> <li>1) Trachea (2 inches)</li> <li>2) Bronchi</li> <li>3) Lungs</li> <li>4) Evidence of pulmonary edema</li> <li>5) Evidence of hemorrhaged lung</li> <li>6) Light microscopy</li> <li>7) Pathology</li> <li>8) Lung weight</li> </ul> </li> <li>b) Central nervous system <ul style="list-style-type: none"> <li>1) Section of brain</li> <li>2) Pathology</li> </ul> </li> </ul>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

- c) Cardiovascular system
    - 1) Section of heart
    - 2) Degree of heart disease
  - 8. Toxicology measurements
    - a) Blood samples
      - 1) Carboxyhemoglobin (COHb)
      - 2) Blood gas oxygen (PO<sub>2</sub>)
      - 3) Blood alcohol (ETOH)
      - 4) Drug screen
      - 5) THB
      - 6) Hydrogen Cyanide (HCN)
        - Should be done within six hours of death
      - 7) Benzene
    - b) Soot from respiratory tract – trachea and bronchi
      - 1) X-ray fluorescence for qualitative analysis of elements
        - Antimony (Sb), Antimony oxide (Sb<sub>2</sub>O<sub>3</sub>) in vinyl material, lead (Pb), Bromine (Br), Titanium (Ti)
- C. Conference with medical examiner

**SLIDE: 6-1-35**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

1. Discuss results of post mortem examination
2. Does medical examiner need additional information from investigator
3. What was cause of death
4. Significance of post mortem examination results
  - a) COHb elevated levels
    - 1) Victim was alive and inhaling products of combustion from the fire
  - b) Nonelevated levels of COHb
    - 1) Victim may not have been alive at time of fire
    - 2) Victim may have been alive at time of fire but spasm of airway due to inhalation of heated air and gases restricted inhalation process
    - 3) Impairment of respiratory process or obstructed airway
5. Consistent with manner of death determination

## VIII. HOSPITALIZED VICTIMS PROCEDURES

- A. Emergency room personnel obligations
  1. Contact medical examiner, coroner, or appropriate public official in the event of death

**SLIDE: 6-1-36**

PRESENTATION	APPLICATION
<p>2. Observations for investigator</p> <ul style="list-style-type: none"> <li>a) Burns                             <ul style="list-style-type: none"> <li>1) Face</li> <li>2) Degree and body surfaces affected</li> </ul> </li> <li>b) Airway                             <ul style="list-style-type: none"> <li>1) Soot in upper airway</li> <li>2) Presence of rhonchus or stridor</li> <li>3) Respiratory rate and depth</li> </ul> </li> <li>c) Skin color                             <ul style="list-style-type: none"> <li>1) Red (burns, COHb)</li> <li>2) Cyanosis (oxygen deprivation)                                     <ul style="list-style-type: none"> <li>• Blue in color</li> </ul> </li> </ul> </li> <li>d) Sputum                             <ul style="list-style-type: none"> <li>1) Examination for carbonaceous materials</li> </ul> </li> </ul> <p>3. Samples of analysis</p> <ul style="list-style-type: none"> <li>a) Arterial blood gases                             <ul style="list-style-type: none"> <li>1) PCO<sub>2</sub>, PO<sub>2</sub>, COHb</li> </ul> </li> <li>b) Blood Ph</li> <li>c) Sputum for soot analysis</li> <li>d) Urine                             <ul style="list-style-type: none"> <li>1) Lead (Pb), Antimony (Sb), Zinc (Zn)</li> </ul> </li> </ul>	





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

SCENE INVESTIGATION

## PRESENTATION

## APPLICATION

- c) Shoes
  - 1) Match shoe print impressions at scene
  - 2) Flammable/combustible liquids present
- d) Use proper body fluid precautions
- 2. Personal effects
  - a) Missing items from scene may be with victim
- 3. Weapons
  - a) Firearm may have been on person
  - b) Knife
- 4. Follow proper chain of custody procedures
  - a) District attorney (search warrant issues)
  - b) Appropriate containers

***SUMMARY:***

Death by fire is determined by a specific set of criteria. Many professional disciplines are involved in the investigative process. The investigator must maintain control of the scene and ensure that the incident is processed systematically. The activities of all the professionals must be coordinated to reach a proper determination concerning not only the cause of fire, but also the cause and manner of death.

***EVALUATION:***

The student will complete a written quiz at a time determined by the instructor.

***ASSIGNMENT:***

Review your notes and read Chapter 6-1 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

**TOPIC:** MECHANISM OF INJURY

**TIME FRAME:** 2:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz

*Behavior:* The student will confirm a knowledge of how people are injured or killed in fires by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 6-1, pages 179-210

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan

**REFERENCES:**

- Fire Investigation 1A Student Manual, SFT, 1996
- Fire Investigation 1B Student Manual, SFT, 2000
- Kirk's Fire Investigation, John DeHaan, Brady Prentice Hall, 4<sup>th</sup> Edition, 1997
- Post Mortem Protocol, Foundation for Fire Safety, 1983
- The Investigation & Prosecution of Arson, CDAA & SFM, Second Edition, 1995

**PREPARATION:**

The cause of fire and the cause of death cannot be separated in the investigation of the fatal fire. The deceased is as much a fire cause indicator as everything else in the fire area or the area of origin. Investigators need to understand how people are injured and killed in fires and what happens to the human body as a result of exposure to the fire environment.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

**PRESENTATION**

**APPLICATION**

**I. ENVIRONMENT – HAZARDOUS AND HOSTILE OVERVIEW**

A. Structure failure

1. Collapse – crushing injuries

- a) Walls
- b) Ceiling
- c) Roof

B. Falls

- 1. Escaping
- 2. Structure failure
- 3. Multi-system trauma

C. Heat

- 1. Thermal damage to skin
- 2. Muscle contraction
- 3. Skull fracture

D. Soot and smoke

- 1. Inhalation injuries
- 2. Damage to respiratory tract
  - a) Reflexive constriction
  - b) Rapid edema
  - c) Soot and smoke deposit

**SLIDE: 6-2-1**



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<p>E. Low oxygen environment</p> <ol style="list-style-type: none"> <li>1. Hypoxia               <ol style="list-style-type: none"> <li>a) Low oxygen</li> </ol> </li> <li>2. Anoxia               <ol style="list-style-type: none"> <li>a) No oxygen</li> </ol> </li> </ol> <p>F. Toxic environment</p> <ol style="list-style-type: none"> <li>1. Lung damage               <ol style="list-style-type: none"> <li>a) Impair function</li> </ol> </li> <li>2. Gases pass through lungs into blood stream               <ol style="list-style-type: none"> <li>a) Impair function</li> </ol> </li> <li>3. Carbon monoxide               <ol style="list-style-type: none"> <li>a) Carbon monoxide asphyxiation</li> </ol> </li> <li>4. Hydrogen chloride (HCl)</li> <li>5. Hydrogen cyanide (HCN)</li> <li>6. Carbon dioxide (CO<sub>2</sub>)</li> <li>7. Nitrogen oxides               <ol style="list-style-type: none"> <li>a) Nitrogen dioxide (NO<sub>2</sub>)</li> <li>b) Nitrogen oxide (NO)</li> </ol> </li> <li>8. Phosgene (COCl<sub>2</sub>)</li> </ol>	<p><b>SLIDE: 6-2-2</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

## PRESENTATION

## APPLICATION

## II. STRUCTURE FAILURE

### A. Collapse

1. Walls
2. Ceiling
3. Roof

### B. Crushing Injuries

1. Musculoskeletal system
2. Compromise respiratory function
  - a) Lungs unable to inflate
  - b) Flail chest
  - c) Rib fracture
3. Compromise circulatory function
  - a) Damage to heart, aorta
  - b) Hypovolemic shock
    - 1) Blood loss

**SLIDE: 6-2-3**

**SLIDE: 6-2-4**

## III. FALLS

### A. Escaping

1. Jumping
2. Thrown from building
3. Pushed?

PRESENTATION	APPLICATION
<p>B. Multi-system trauma</p> <ol style="list-style-type: none"> <li>1. Function of height</li> <li>2. Impact zone                             <ol style="list-style-type: none"> <li>a) Material to cushion landing</li> </ol> </li> <li>3. Compression injuries to skeletal system</li> <li>4. Cervical spine injuries                             <ol style="list-style-type: none"> <li>a) Paralysis</li> </ol> </li> </ol> <p><b>IV. HEAT</b></p> <p>A. Destruction of body</p> <ol style="list-style-type: none"> <li>1. Rare to encounter heat of sufficient intensity or duration that destroys all anatomical features</li> <li>2. Cremation – legal incineration                             <ol style="list-style-type: none"> <li>a) 950°C to 1000°C (1800°F to 2100°F)</li> <li>b) Within 1 to 2 hours for complete destruction</li> </ol> </li> <li>3. Under most circumstances in a frame dwelling fire, it is a combination of                             <ol style="list-style-type: none"> <li>a) Temperature at floor level not sufficient</li> <li>b) Duration                                     <ol style="list-style-type: none"> <li>1) Not sustained for two hours</li> </ol> </li> <li>c) Not sufficient to destroy all skeletal remains of an adult</li> <li>d) Due to water in tissue and large mass</li> </ol> </li> </ol>	<p><b>SLIDE: 6-2-5</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<p>4. Identifiable portion that survives</p> <ul style="list-style-type: none"> <li>a) Skull</li> <li>b) Pelvic bones</li> <li>c) Dental</li> </ul> <p>5. Skeletal remains of children</p> <ul style="list-style-type: none"> <li>a) More readily destroyed</li> <li>b) Smaller size</li> <li>c) Lower mass</li> <li>d) Less complete calcification</li> </ul> <p>6. Body supported on metal furniture or seat springs</p> <ul style="list-style-type: none"> <li>a) Provides better exposure to surrounding flames</li> <li>b) Consumed to a larger degree than expected</li> <li>c) Accounts for extensive consumption of bodies in vehicle fires</li> </ul> <p>7. Substantial incineration of body</p> <ul style="list-style-type: none"> <li>a) Without destruction of dwelling or other fuels in the vicinity</li> <li>b) Torso consumed where fire has not extended beyond fuels in immediate contact with the body</li> </ul>	<p><b>SLIDE: 6-2-6</b></p> <p><b>SLIDE: 6-2-7</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<p>c) Erroneously identified as "<u>spontaneous human combustion</u>"</p> <p>d) Certain common elements</p> <ol style="list-style-type: none"> <li>1) Elderly</li> <li>2) Partial incapacitation <ul style="list-style-type: none"> <li>• Alcohol</li> <li>• Medication</li> <li>• Infirmary</li> </ul> </li> <li>3) Many victims overweight <ul style="list-style-type: none"> <li>• Fat rendered from body serves as fuel</li> </ul> </li> <li>4) Ignition source nearby <ul style="list-style-type: none"> <li>• Room heater</li> <li>• Fireplace</li> <li>• Stove</li> <li>• Smoking materials</li> </ul> </li> <li>5) Long time frame</li> <li>6) Clothing, bedding, or carpet act as wick <ul style="list-style-type: none"> <li>• Promote slow smoldering fire</li> </ul> </li> <li>7) Little open flame</li> </ol>	<p><b>SLIDE: 6-2-8</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<p>8) Insufficient heat to encourage fire growth</p> <p>9) Candle effect</p> <p>10) Unburned pyrolysis products condense</p> <ul style="list-style-type: none"> <li>• On nearby surfaces</li> <li>• Brown or black oily soot</li> </ul> <p>8. Industrial fires</p> <p>a) Fuels involving</p> <ol style="list-style-type: none"> <li>1) Magnesium</li> <li>2) Thermite</li> </ol> <p>b) Higher temperature fires</p> <ol style="list-style-type: none"> <li>1) Complete reduction of body</li> <li>2) To calcium</li> <li>3) To silicon salts</li> </ol> <p>c) Accidental, homicidal and suicidal incidents – total body destruction involving</p> <ol style="list-style-type: none"> <li>1) Steel smelting</li> <li>2) Cast metal foundries</li> <li>3) Cement making</li> </ol>	







# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<p>4) 9% for front of each leg</p> <p>5) 9% for back of each leg</p> <p>6) 18% for front of the torso</p> <p>7) 18% for back of the torso</p> <p>8) 1% for genitalia</p> <p>b) Infants and children have different numbers</p> <p>1) Different body proportions</p> <p>2) Head assigned a larger value</p> <p>c) Classification of burns</p> <p>1) Critical</p> <p>2) Moderate</p> <p>3) Minor</p> <p>4) Classification dependent upon</p> <ul style="list-style-type: none"> <li>• Depth of burn</li> <li>• Percent of body surface</li> <li>• Face, hands, feet, upper airway, genitalia involvement</li> </ul> <p>6. Muscle contraction</p> <p>a) Fire causes muscles to contract</p> <p>1) Flexing the joints</p> <p>2) Particularly extremities/limbs</p>	<p><b>SLIDE: 6-2-13</b></p>

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>3) "Pugilistic pose" – fighter's stance</li> <li>4) Flexion can cause fracturing of bones               <ul style="list-style-type: none"> <li>• Can be mistaken for antemortem injury</li> </ul> </li> <li>7. Skull fractures               <ul style="list-style-type: none"> <li>a) Fire can cause fractures of the skull                   <ul style="list-style-type: none"> <li>1) Expansion of tissues, steam, or gases</li> <li>2) Creates pressure in skull</li> <li>3) Usually along suture lines</li> <li>4) Tissue exudes from skull</li> <li>5) Can be mistaken for antemortem injury</li> </ul> </li> </ul> </li> </ul>	
<p><b>V. INHALATION INJURIES</b></p> <ul style="list-style-type: none"> <li>A. Inhalation of extremely hot gases           <ul style="list-style-type: none"> <li>1. Reflexive constriction of the pharynx</li> <li>2. Cessation of breathing</li> <li>3. Pathological signs consistent with strangulation</li> </ul> </li> <li>B. Inhalation of flame or very hot gases           <ul style="list-style-type: none"> <li>1. Can also produce rapidly developing edema</li> <li>2. Swelling of pharynx or tongue</li> <li>3. Produce some symptoms as asphyxiation</li> </ul> </li> </ul>	





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

## PRESENTATION

## APPLICATION

3. Found in lungs and larynx during postmortem

a) Strong indication victim alive at time of fire

G. Soot found just inside mouth and nose

1. Could be result of soot settling on exposed surface

2. Victim lying face up in room

3. May **not** be indication of victim alive and breathing at time of fire

## VI. LOW OXYGEN ENVIRONMENT

A. Oxygen consumed during fire process

1. Anoxia – no oxygen

2. Hypoxia – low oxygen

a) 21% oxygen normal conditions

b) 17% oxygen

1) Some impairment of muscular coordination

2) Increased respiratory rate

c) 12% oxygen

1) Dizziness

2) Headache

3) Rapid fatigue

**SLIDE: 6-2-16**



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<p>d) 9% oxygen</p> <p>1) Unconsciousness</p> <p>e) 6% oxygen</p> <p>1) Death within a few minutes</p> <p>2) Respiratory failure</p> <p><b>VII. TOXIC ENVIRONMENT – TOXIC GASES</b></p> <p>A. Lung damage – some gases</p> <p>1. Direct damage to lung tissue</p> <p>2. Impair lung function</p> <p>B. Other gases – no direct lung damage</p> <p>1. Pass into bloodstream</p> <p>2. To other parts of the body</p> <p>3. Impair oxygen carrying capacity of red blood cells</p> <p>C. Carbon monoxide asphyxiation</p> <p>1. Carbon monoxide (CO)</p> <p>a) Not toxic in usual sense of interfering with metabolism</p> <p>b) Colorless</p> <p>c) Odorless</p> <p>d) Causes more fire deaths than any other product of combustion</p>	<p><b>SLIDE: 6-2-17</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<p>e) Combines with hemoglobin in the blood</p> <p>1) Like oxygen</p> <p>f) Product of incomplete combustion</p> <p>2. Blood hemoglobin</p> <p>a) Transports oxygen to tissues of the body</p> <p>b) CO combines with hemoglobin</p> <p>1) Forms carboxyhemoglobin (COHb)</p> <p>2) 200 times the avidity or stability of the oxygen-hemoglobin complex (oxyhemoglobin)</p> <p>c) Intrusion of COHb</p> <p>1) Starves cells of needed oxygen</p> <p>2) Organs with high oxygen use (heart, brain)</p> <ul style="list-style-type: none"> <li>• Damaged early</li> </ul> <p>3) Reversible</p> <ul style="list-style-type: none"> <li>• With oxygen (O<sub>2</sub>)</li> <li>• Fresh air</li> </ul> <p>3. Signs and symptoms – physiological effects of carbon monoxide saturation in blood (COHb)</p> <p>a) 0% - 10%</p> <p>1) Slight loss of mental acuity</p>	<p><b>SLIDE: 6-2-18</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>b) 11% - 20%               <ul style="list-style-type: none"> <li>1) Slight headache</li> <li>2) Dilation of skin vessels</li> </ul> </li> <li>c) 21% - 30%               <ul style="list-style-type: none"> <li>1) Severe, throbbing headache</li> </ul> </li> <li>d) 31% - 40%               <ul style="list-style-type: none"> <li>1) Severe headache</li> <li>2) Weakness</li> <li>3) Dizziness</li> <li>4) Confusion</li> <li>5) Nausea, vomiting</li> <li>6) Collapse</li> </ul> </li> <li>e) 41% - 50%               <ul style="list-style-type: none"> <li>1) Fainting</li> <li>2) Rapid heartbeat</li> <li>3) Collapse</li> <li>4) Death in some individuals</li> </ul> </li> <li>f) 51% - 60%               <ul style="list-style-type: none"> <li>1) Fainting</li> <li>2) Rapid breathing</li> <li>3) Possible coma</li> </ul> </li> </ul>	<p style="text-align: center;"><b>SLIDE: 6-2-19</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<p>4) Convulsions</p> <p>5) Respiratory irregularity</p> <p>g) 61% - 70%</p> <p>1) Convulsions</p> <p>2) Depressed heart action</p> <p>3) Death</p> <p>h) 71% - 80% and higher</p> <p>1) Weak pulse</p> <p>2) Respiratory failure</p> <p>3) Death</p> <p>4. Everyone is exposed to carbon monoxide in the air that is breathed</p> <p>a) 5% COHb in urban areas</p> <p>1) Traffic officers</p> <p>2) Mechanics</p> <ul style="list-style-type: none"> <li>• Exposed to vehicle exhaust</li> </ul> <p>b) 3% - 5% COHb nonsmoker sitting in smoke filled room</p> <p>c) 5% - 10% COHb smoker</p> <p>5. Rate of absorption</p> <p>a) Different tolerances and absorption</p>	<p><b>SLIDE: 6-2-20</b></p>

PRESENTATION	APPLICATION
<p>1) Rate of inhalation</p> <ul style="list-style-type: none"> <li>• Low concentration – long period of time</li> <li>• High concentration – short period of time</li> <li>• Both can be fatal</li> </ul> <p>b) Activity or lack of activity</p> <p>1) Changes individual's requirements for oxygen</p> <p>2) Slow shallow breathing</p> <ul style="list-style-type: none"> <li>• CO in air – less effect</li> </ul> <p>3) Deep rapid breathing</p> <ul style="list-style-type: none"> <li>• CO in air – more effect</li> <li>• Fire fighters</li> </ul> <p>c) Individual variations in susceptibility</p> <p>1) Elderly</p> <ul style="list-style-type: none"> <li>• Lung function impaired</li> </ul> <p>2) Infants</p> <ul style="list-style-type: none"> <li>• Faster respiratory rate</li> <li>• CO uptake may be faster</li> </ul> <p>D. Hydrogen chloride (HCl)</p> <p>1. Commonly present in fires</p> <p>a) Involving plastics</p>	





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2) Nylon</li> <li>3) Polyurethane foam</li> <li>4) Rubber</li> <li>5) Paper</li> <li>b) High concentrations of HCN at fires               <ul style="list-style-type: none"> <li>1) Clothing stores</li> <li>2) Rug stores</li> <li>3) Aircraft cabins</li> </ul> </li> <li>2. Gas               <ul style="list-style-type: none"> <li>a) Colorless</li> <li>b) Almond odor</li> <li>c) Can be absorbed through skin</li> <li>d) Classified as chemical asphyxiant</li> <li>e) Inhibits the enzymes by which the tissues take up and use oxygen</li> </ul> </li> <li>3. Signs and symptoms               <ul style="list-style-type: none"> <li>a) Gasping respiration</li> <li>b) Muscle spasms</li> <li>c) Increased heart rate</li> <li>d) Sudden collapse</li> </ul> </li> <li>F. Carbon dioxide (CO<sub>2</sub>)               <ul style="list-style-type: none"> <li>1. Commonly considered as an extinguishing agent</li> </ul> </li> </ul>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>a) Product of complete combustion               <ul style="list-style-type: none"> <li>1) Of carboniferous materials</li> </ul> </li> <li>b) Free-burning fires               <ul style="list-style-type: none"> <li>1) More (CO<sub>2</sub>) than smoldering fires</li> </ul> </li> <li>c) Expect with carbon dioxide total flooding extinguishing systems</li> </ul> <p>2. Gas</p> <ul style="list-style-type: none"> <li>a) Colorless</li> <li>b) Odorless</li> <li>c) Nonflammable</li> <li>d) Air normally contains 0.03% (CO<sub>2</sub>)</li> </ul> <p>3. Signs and symptoms</p> <ul style="list-style-type: none"> <li>a) Concentrations of 5% carbon dioxide in air               <ul style="list-style-type: none"> <li>1) Increased respiration</li> <li>2) Headaches</li> <li>3) Dizziness</li> <li>4) Sweating</li> </ul> </li> <li>b) Concentrations of 10% - 20% carbon dioxide in air               <ul style="list-style-type: none"> <li>1) Original stimulated respiratory rate becomes depressed</li> </ul> </li> </ul>	<p><b>SLIDE: 6-2-23</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

MECHANISM OF INJURY

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2) Paralysis of brain's respiratory center</li> <li>3) Collapse</li> <li>4) Death</li> </ul> <p>G. Nitrogen oxides – nitrogen dioxide (NO<sub>2</sub>) and nitric oxide (NO)</p> <ul style="list-style-type: none"> <li>1. Nitrogen dioxide (NO<sub>2</sub>)           <ul style="list-style-type: none"> <li>a) Formed when nitric oxide (NO) converts to nitrogen dioxide (NO<sub>2</sub>) in the presence of               <ul style="list-style-type: none"> <li>1) Oxygen</li> <li>2) Moisture</li> </ul> </li> <li>b) Nitrogen dioxide liberated when               <ul style="list-style-type: none"> <li>1) Pyroxylin plastics decompose</li> </ul> </li> <li>c) Commonly found in office supply store fires</li> <li>d) Soluble in water and react in the presence of oxygen               <ul style="list-style-type: none"> <li>1) To form nitric and nitrous acids</li> <li>2) Acids neutralized by alkalies in body tissues</li> <li>3) Form nitrites and nitrates</li> </ul> </li> </ul> </li> <li>2. Gas (NO<sub>2</sub>)           <ul style="list-style-type: none"> <li>a) Pulmonary irritant</li> <li>b) Reddish brown</li> </ul> </li> </ul>	

PRESENTATION	APPLICATION
<p>3. Signs and symptoms</p> <ul style="list-style-type: none"> <li>a) Pulmonary edema           <ul style="list-style-type: none"> <li>1) Blocks body's respiratory process</li> <li>2) Death from suffocation</li> </ul> </li> <li>b) Nitrates and nitrites cause           <ul style="list-style-type: none"> <li>1) Arterial dilation</li> <li>2) Variation in blood pressure</li> <li>3) Headaches</li> <li>4) Dizziness</li> </ul> </li> </ul> <p>H. Phosgene (COCl<sub>2</sub>)</p> <ul style="list-style-type: none"> <li>1. Produced when refrigerants such as freon contact flame           <ul style="list-style-type: none"> <li>a) Strong lung irritant</li> <li>b) Phosgene contacts water               <ul style="list-style-type: none"> <li>1) Decomposes into hydrochloric acid</li> </ul> </li> <li>c) Lungs and bronchial tubes are moist               <ul style="list-style-type: none"> <li>1) Hydrochloric acid forms in lungs</li> </ul> </li> </ul> </li> <li>2. Gas           <ul style="list-style-type: none"> <li>a) Colorless</li> <li>b) Tasteless</li> <li>c) Disagreeable odor – musty hay</li> </ul> </li> </ul>	<p><b>SLIDE: 6-2-24</b></p>



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	MECHANISM OF INJURY APPLICATION
<p>3. Signs and symptoms</p> <ul style="list-style-type: none"><li>a) Coughing</li><li>b) Eye irritation</li><li>c) Full poisonous effect not evident<ul style="list-style-type: none"><li>1) Until several hours after exposure</li></ul></li></ul>	

**SUMMARY:**

Death by fire is determined by a specific set of criteria. The investigator must understand these conditions and be able to apply this information to their evaluation of the fire scene. They must be able to determine the relationship between the fire cause and the cause of death.

**EVALUATION:**

The student will complete a written quiz at a time determined by the instructor.

**ASSIGNMENT:**

Review your notes and read Chapter 6-2 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

**TOPIC:** INTRODUCTION TO CASE REPORTS

**TIME FRAME:** 1:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* A written quiz

*Behavior:* The student will confirm a knowledge of the techniques and procedures for documenting a fire scene and a fire investigation by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 7-1, pages 211-252

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- The Investigation & Prosecution of Arson, CDAA & SFM, Second Edition, 1995

**PREPARATION:** Accurate and professional documentation is of prime importance for investigation reporting. Reports must contain all pertinent information, utilizing written, sketched, and photographic mediums. The accuracy and completeness of a report often results in a successful conviction.





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>3. Later used in writing reports</li> </ul> <p>E. Purposes and uses of field notes</p> <ul style="list-style-type: none"> <li>1. Primarily, notes help to recall incidents, situations, circumstances, or statements</li> <li>2. Secondary purposes and uses               <ul style="list-style-type: none"> <li>a) Allow study, analysis, or evaluation of scene without a revisit</li> <li>b) Aid with interviews</li> <li>c) Resolve points of conflict</li> <li>d) Outline report writing</li> <li>e) Bring other investigators up-to-date</li> </ul> </li> <li>F. Content of notes               <ul style="list-style-type: none"> <li>1. Facts concerning the incident as well as those seemingly insignificant pieces which might later become important</li> </ul> </li> </ul>	<p><b>SLIDE: 7-1-3</b></p> <p><b>SLIDE: 7-1-4</b></p>
<p><b>III. WRITTEN INVESTIGATION REPORTS</b></p> <p>A. Preliminary reports</p> <ul style="list-style-type: none"> <li>1. Usually the first report generated</li> <li>2. Basic information about the incident</li> <li>3. Usually on a preprinted form</li> <li>4. Used as a guide for the investigation</li> </ul>	<p><b>SLIDE: 7-1-5</b></p>





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>e) BUILDING CONSTRUCTION OF INVOLVED STRUCTURE</li> <li>f) EXTERIOR EXAMINATION</li> <li>g) INTERIOR EXAMINATION</li> <li>h) EVIDENCE</li> <li>i) INTERVIEWS</li> <li>j) DOCUMENT INDEX</li> <li>k) OPINIONS AND CONCLUSION</li> </ul> <p>2. Report is written as a continuous narrative</p> <p>3. Section headings</p> <ul style="list-style-type: none"> <li>a) All section headings are uppercase letters, bold type, and underlined</li> <li>b) The headings will be placed at the left hand margin</li> </ul> <p>B. Category report format</p> <p>1. Divided into ten basic categories to organize material</p> <ul style="list-style-type: none"> <li>a) VIOLATIONS/POLICY (ACCUSATIONS)</li> <li>b) SUMMARY</li> <li>c) SUSPECT(S) OR SUBJECT(S)</li> <li>d) VICTIM(S) OR WITNESS(ES)</li> <li>e) EVIDENCE</li> </ul>	<p><b>SLIDE: 7-1-8</b></p>







## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>e) Date of birth (DOB)</li> <li>f) Drivers license</li> <li>g) Social security number</li> <li>h) Height, weight, build</li> <li>i) Hair               <ul style="list-style-type: none"> <li>1) Color</li> <li>2) Type</li> <li>3) Style</li> </ul> </li> </ul> <p>D. CATEGORY FOUR – VICTIM(S) AND WITNESS(ES)</p> <ul style="list-style-type: none"> <li>1. Listed in left-hand margin as <u>4-VICTIM(S)/WITNESS(ES)</u></li> <li>2. Each individual will be identified as completely as possible               <ul style="list-style-type: none"> <li>a) Full name with last name first                   <ul style="list-style-type: none"> <li>1) Jones, John James</li> <li>2) Include Also Known As (AKAs)</li> </ul> </li> <li>b) Sex</li> <li>c) Age</li> <li>d) Date of birth (DOB)</li> <li>e) Drivers license</li> <li>f) Social security number</li> </ul> </li> </ul>	<p><b>SLIDE: 7-1-14</b></p>

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>g) Home address and telephone number</li> <li>h) Business address and telephone number</li> <li>i) Give brief statement of what each victim and witness can testify to               <ul style="list-style-type: none"> <li>1) The complete statement obtained from victims and witnesses shall be placed in the attachment category</li> </ul> </li> </ul>	<p><b>SLIDE: 7-1-15</b></p>
<p>E. CATEGORY FIVE – EVIDENCE</p> <ul style="list-style-type: none"> <li>1. Listed in left-hand margin as <u>5-EVIDENCE</u></li> <li>2. If “Evidence and Photographic Reports” were used, state “See attached evidence and photographic report” and show attachment number</li> </ul>	<p><b>SLIDE: 7-1-16</b></p>
<p>F. CATEGORY SIX – PHYSICAL CONDITION OR CONDITIONS</p> <ul style="list-style-type: none"> <li>1. Listed in left-hand margin as <u>6-PHYSICAL CONDITION OR CONDITIONS</u></li> <li>2. Use whichever is most appropriate for the case you are investigating</li> <li>3. Where pertinent, describe the conditions of victims, witnesses, and suspects</li> </ul>	<p><b>SLIDE: 7-1-17</b></p>
<p>G. CATEGORY SEVEN – VEHICLES OR EQUIPMENT</p> <ul style="list-style-type: none"> <li>1. Listed in left-hand margin as <u>7-VEHICLE(S) OR EQUIPMENT</u></li> </ul>	





# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<p>4. Investigator's signature appears at end of narrative</p> <p>J. CATEGORY TEN – ATTACHMENTS</p> <p>1. Listed in left-hand margin as <u>10-ATTACHMENTS</u></p> <p>2. Attachments shall include when appropriate</p> <ul style="list-style-type: none"> <li>a) Chronological log</li> <li>b) Photograph and evidence logs</li> <li>c) Property forms from search warrants</li> <li>d) Statements – waiver forms</li> <li>e) Consent forms</li> <li>f) Sketches</li> <li>g) Photographs</li> <li>h) Maps</li> <li>i) Contracts</li> <li>j) Assessor/ownership information</li> <li>k) DMV, CII, NCIC, and FBI information</li> <li>l) Insurance information</li> </ul>	<p><b>SLIDE: 7-1-20</b></p>
<p><b>VI. GENERAL PROVISIONS</b></p> <p>A. Investigator's name, badge number, and signature</p> <p>1. Investigator must sign report at end</p>	<p><b>SLIDE: 7-1-21</b></p>



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2. Signature shall be placed on the right-hand side of the page at the conclusion of the narrative section</li> <li>3. Investigator's name shall be printed or typewritten and signed</li> <li>4. The minimum acceptable signature shall be the initials and last name followed by badge or employee number</li> <li>B. Investigator's title or rank               <ul style="list-style-type: none"> <li>1. On the next line beneath signature</li> </ul> </li> <li>C. Date               <ul style="list-style-type: none"> <li>1. Date report was written shall be typed or printed underneath title or rank</li> </ul> </li> <li>D. Cover page               <ul style="list-style-type: none"> <li>1. A cover page may also accompany the report with the investigating officer's signature</li> </ul> </li> <li>E. All case reports should have a table of contents</li> <li>F. Final copy               <ul style="list-style-type: none"> <li>1. Read and check each copy                   <ul style="list-style-type: none"> <li>a) Make sure meanings are clear and understandable to someone without prior knowledge of the case</li> <li>b) Correct spelling and grammar</li> </ul> </li> <li>2. Sign all copies</li> <li>3. Have the report reviewed before submitted</li> </ul> </li> </ul>	<p style="text-align: center;"><b>SLIDE: 7-1-22</b></p>



**PRESENTATION**

**APPLICATION**

**VII. SUPPLEMENTAL REPORTS**

- A. Follow-up or supplemental reports
  - 1. When writing these reports, the heading is always required
  - 2. The category number and title, date, and time shall be listed

**SUMMARY:**

Issuing Deputy District Attorneys have a limited amount of time to devote to the review of cases submitted. A case report that appears well organized and easily read will have a greater chance of being “issued” than those that do not follow a standard format.

**EVALUATION:**

The student will complete a written quiz at a time determined by the instructor.

**ASSIGNMENT:**

Review your notes and read Chapter 7-1 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

**TOPIC:** INSURANCE INFORMATION FOR THE FIRE INVESTIGATOR

**TIME FRAME:** 1:00

**LEVEL of INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz

*Behavior:* The student will confirm a knowledge of the roles and responsibilities of the insurance industry by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 7-2, pages 253-262

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Fire Investigation 1A Student Manual, SFT, 1996
- California Insurance Code

**PREPARATION:** There are three different types of insurance adjusters that play a number of roles in a fire investigation including hiring special consultants, estimating loss, and examining under oath. Understanding their responsibilities in the claim handling process can benefit the investigator in a criminal case. Likewise, insurance personnel can benefit from the public investigator in the conduct of the civil investigation.



PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>2) How much is the insured entitled to collect</li> <li>3) If claim should be referred to special investigation unit (SIU) or contract investigator</li> </ul> <p>2. Independent adjusters</p> <ul style="list-style-type: none"> <li>a) Adjust loss on behalf of insurance company</li> <li>b) Hired by the insurance company on a case-to-case basis</li> </ul> <p>3. Public adjusters</p> <ul style="list-style-type: none"> <li>a) Independent contractor</li> <li>b) Employed by and represents interests of the insured</li> <li>c) Deals with the insurance company on behalf of the insured               <ul style="list-style-type: none"> <li>1) Insured is usually charged 10% of the claim amount for adjuster's services</li> </ul> </li> </ul> <p><b>NOTE:</b> Important to distinguish between these three different types of adjusters.</p>	<p><b>SLIDE: 7-2-2</b></p> <p><b>SLIDE: 7-2-3</b></p>

**PRESENTATION**

**APPLICATION**

**III. RESPONSIBILITIES OF THE INSURED AFTER LOSS OCCURS**

- A. Anatomy of a claim
  - 1. Report loss to the insurance company
- B. File "proof of loss" with the company within sixty (60) days
  - 1. Includes a complete list of damaged, destroyed, and undamaged property
- C. Company responds to proof of loss within thirty (30) days
  - 1. Either accepted or rejected
  - 2. May take exception to the proof if it is incomplete

**SLIDE: 7-2-4**

**IV. RESPONSIBILITIES OF THE ADJUSTER**

- A. Investigates the claim and ensures it is settled fairly and within established time lines
- B. Requests further investigation of claim if warranted
  - 1. Conducts origin and cause investigation
  - 2. Financial background
  - 3. Follow-up private investigation
  - 4. Examination under oath (EUO)
    - a) Insurance company has the right to request the EUO during the claim handling process



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

INSURANCE INFORMATION  
FOR THE FIRE INVESTIGATOR

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>b) An attorney, hired by the insurer, conducts the examination</li> <li>c) The EUO differs from a deposition because the insurance company's attorney can ask unlimited questions</li> <li>d) Insurer can void the claim if the insured intentionally conceals or misrepresents material facts related to their report of loss</li> </ul> <p>C. Proper and timely claim handling so insurance company's rights under the contract are not waived</p> <ul style="list-style-type: none"> <li>1. Inspect damaged property               <ul style="list-style-type: none"> <li>a) Goal is within 24 hours</li> </ul> </li> <li>2. Determine origin and cause               <ul style="list-style-type: none"> <li>a) Private investigators, fire cause consultants, or other experts can be called in at any time by the insurance company</li> </ul> </li> <li>3. Investigate motive               <ul style="list-style-type: none"> <li>a) EUO may be required any time after the insured files a proof of loss</li> </ul> </li> <li>4. Estimate entire loss               <ul style="list-style-type: none"> <li>a) Accountant may be used to assist in evaluating business records</li> </ul> </li> <li>5. Inspect property after repairs are completed</li> <li>6. Pay covered claim</li> </ul>	



PRESENTATION	APPLICATION
<p>11. Bankruptcies</p> <ul style="list-style-type: none"><li>a) Blaming failure on fire</li></ul> <p>C. "Red flags" for household fires</p> <ul style="list-style-type: none"><li>1. Missing irreplaceable items<ul style="list-style-type: none"><li>a) Family photos</li><li>b) Collections</li><li>c) Pets</li></ul></li></ul> <p><b>VI. ESTABLISHING FIRE LOSS</b></p> <p>A. Building values are established in one of five ways</p> <ul style="list-style-type: none"><li>1. Unit costs<ul style="list-style-type: none"><li>a) Unit costs are based on prior experiences to do a job for projected or known cost</li></ul></li><li>2. Work days<ul style="list-style-type: none"><li>a) Work days are used to determine costs in labor based on increments of work days</li></ul></li><li>3. Bids<ul style="list-style-type: none"><li>a) Bids are competitive estimates from two or more contractors/vendors</li></ul></li><li>4. Time and material<ul style="list-style-type: none"><li>a) Time and material refers to adding up all incurred hours and materials costs plus profit (profit and overhead is usually 20%)</li></ul></li></ul>	<p><b>SLIDE: 7-2-7</b></p>

PRESENTATION	APPLICATION
<p>B. Content values are established in one of two ways</p> <ol style="list-style-type: none"> <li>1. Appraisers hired to accurately establish loss               <ol style="list-style-type: none"> <li>a) The appraiser is expensive and time consuming                   <ol style="list-style-type: none"> <li>1) Usually reserved for commercial losses</li> </ol> </li> </ol> </li> <li>2. Inventory of the property at the scene and research will give an approximate loss amount               <ol style="list-style-type: none"> <li>a) Inventories based on the insured's memory and research of value is quite accurate</li> </ol> </li> </ol>	
<p><b>VII. REPORTING AGENCIES</b></p> <p>A. Property Insurance Loss Register</p> <ol style="list-style-type: none"> <li>1. Used by member insurance companies to report all theft and fire losses in excess of \$1,000.00</li> </ol> <p>B. Department of Insurance</p> <ol style="list-style-type: none"> <li>1. State agency headed by the Insurance Commissioner</li> <li>2. Bureau of Fraudulent Claims               <ol style="list-style-type: none"> <li>a) Investigates fraud matters required to be reported by insurers to this agency</li> </ol> </li> </ol> <p>C. National Insurance Crime Bureau (NICB)</p> <ol style="list-style-type: none"> <li>1. Funded by the insurance industry</li> <li>2. Cases referred by insurance company</li> </ol>	<p><b>SLIDE: 7-2-8</b></p>

<b>PRESENTATION</b>	<b>APPLICATION</b>
<p>3. Is autonomous in their investigations</p> <p>4. Auto and fire claims make up the bulk of investigations</p> <p><b>VIII. RELEASE OF INFORMATION TO AUTHORIZED AGENCY - INSURANCE CODE, SECTION 1875.1</b></p> <p>A. The arson immunity reporting statute requires an insurer to notify an “authorized” agency when there has been an arson or suspected arson</p> <ol style="list-style-type: none"> <li>1. The insurance company file may contain information helpful in the area of motive, opportunity or even the corpus</li> <li>2. The statute also allows the authorized agency to give the insurer information helpful to them in the civil case, if the criminal case is not jeopardized</li> </ol> <p>B. Notice to Insurer, Release of Information 1875.3</p> <ol style="list-style-type: none"> <li>1. An authorized agency shall notify the insurer, if known, and at the expense of the insurer, whenever it has reason to believe that a fire loss was not accidentally caused</li> <li>2. The agency shall also release to the claimants’ insurer specific information regarding the fire loss at the earliest time possible unless it determines that an ongoing investigation would be jeopardized</li> </ol>	<p><b>SLIDE: 7-2-9</b></p>

***SUMMARY:***

There are three types of insurance adjusters. Adjusters have a number of important roles in fire investigation including hiring of specialists, estimating the loss, and scheduling the examination under oath.

The insurance industry can be an important source of information to the investigator. Investigators need to be patient and continually check with insurance representatives to obtain up-to-date files on a fire incident.

***EVALUATION:***

The student will complete a written quiz at a time determined by the instructor.

***ASSIGNMENT:***

Review your notes and read Chapter 7-2 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

**TOPIC:** RESOURCES

**TIME FRAME:** 1:00

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* A written quiz

*Behavior:* The student will confirm a knowledge of the different sources of information available to an investigator by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B, Student Manual, SFT, 2000, Chapter 7-3, pages 263-276

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Peace Officer Background Investigation, POST, 1991

**PREPARATION:**

A thorough fire investigation includes interviewing, research, and the analysis of sources of information. These sources complement the scene investigation. The investigator must understand what background information is needed to complete the investigation and what resources are available.



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

RESOURCES

## PRESENTATION

## APPLICATION

### I. CRIMINAL INVESTIGATION

- A. There are literally hundreds of sources that will provide information about persons or entities
1. Some agency names may vary from county to county
  2. Law enforcement associations/networking
    - a) Arson task forces
    - b) Fraud and check association
    - c) County investigator association
    - d) Ritual crime investigators
    - e) Gang investigator association
    - f) Regional intelligence groups
- B. Identification
1. Subject's full name
  2. Aliases
  3. Date of birth
  4. Social security number
  5. Physical description
    - a) Height
    - b) Weight
    - c) Color: eyes, hair

**SLIDE: 7-3-1**

**SLIDE: 7-3-2**



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

RESOURCES

## PRESENTATION

## APPLICATION

- d) Race/nationality
- 6. Present and past residences
- 7. Driver's license number
- C. Employment
  - 1. Present
  - 2. Past
  - 3. Position
  - 4. Income
  - 5. Union affiliation
  - 6. Association memberships
- D. Relatives' background
  - 1. Spouse
  - 2. Parents
  - 3. Children
  - 4. Other relatives
- E. Activities
  - 1. Hangouts
    - a) Bars and restaurants
    - b) Bowling alley
    - c) Racing
    - d) Fire stations

**SLIDE: 7-3-3**



## FIRE INVESTIGATION 1B

Techniques of Fire Investigation

RESOURCES

PRESENTATION	APPLICATION
<p>2. Sports</p> <p>3. Hobbies</p> <p>4. Associates</p> <p>F. Transportation</p> <p>1. Vehicles</p> <p>a) Automobiles and trucks</p> <p>b) Motorcycles and bicycles</p> <p>c) RVs and boats</p> <p>d) Aircraft</p> <p>e) Registration information</p> <p>1) Legal owner</p> <p>2) Registered owner</p> <p>3) Vehicle description</p> <ul style="list-style-type: none"> <li>• Color</li> <li>• Damage, unique markings</li> </ul> <p>G. Education</p> <p>1. High school</p> <p>2. College</p> <p>3. Trade school</p> <p>H. Criminal activity</p> <p>1. Summary</p> <p>a) Factual</p>	



# FIRE INVESTIGATION 1B

Techniques of Fire Investigation

RESOURCES

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>b) Suspected</li> <li>c) Reputation</li> </ul> <p>I. Miscellaneous</p> <ul style="list-style-type: none"> <li>1. Narrative of other related or important information</li> </ul> <p><b>II. CRIMINAL HISTORY</b></p> <p>A. Records</p> <ul style="list-style-type: none"> <li>1. National Crime Information Center (NCIC)</li> <li>2. California Department of Justice (DOJ) <ul style="list-style-type: none"> <li>a) California Law Enforcement Teletype System (CLETS)</li> <li>b) Arson Information Reporting System (AIRS)</li> </ul> </li> <li>3. Local <ul style="list-style-type: none"> <li>a) Task forces</li> <li>b) Police/sheriff departments</li> <li>c) Fire departments</li> <li>d) District attorney <ul style="list-style-type: none"> <li>1) Investigation unit</li> <li>2) Fraud unit</li> <li>3) Family support</li> </ul> </li> </ul> </li> </ul>	<p><b>SLIDE: 7-3-4</b></p> <p><b>SLIDE: 7-3-5</b></p>





## PRESENTATION

## APPLICATION

**III. INFORMATION SERVICES**

## A. Computer on line

1. Information Professional Bulletin Board
2. Private Investigators Bulletin Board System
3. Contract services
  - a) Courts
  - b) Records clerk

**SLIDE: 7-3-9**

## B. Insurance industry

1. National Insurance Crime Bureau (NICB)
2. Property Insurance Loss Register System (PILR)
3. Insurance investigator, adjuster, and agent

**SLIDE: 7-3-10**

## C. County agency records

## D. State agency records

**SLIDE: 7-3-11****SLIDE: 7-3-12****SLIDE: 7-3-13****SLIDE: 7-3-14****SLIDE: 7-3-15****SLIDE: 7-3-16****SLIDE: 7-3-17**

**SUMMARY:**

Complete an in depth background investigations may have to be conducted to reveal the motive and the subject of some arson fires.

**EVALUATION:**

The student will complete a written quiz at a time determined by the instructor.

**ASSIGNMENT:**

Review your notes and read Chapter 7-3 in your Fire Investigation 1B, Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.

**TOPIC:** BUILDING CONSTRUCTION AND TERMINOLOGY

**TIME FRAME:** 1:00

**LEVEL OF INSTRUCTION:** Level I

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a written quiz

*Behavior:* The student will confirm a knowledge of the various parts of a building, the construction of building, and their application to fire investigation by completing the written quiz

*Standard:* With a minimum 80% accuracy according to the information contained in the Fire Investigation 1B Student Manual, SFT, 2000, Chapter 7-4, pages 277-290

**MATERIALS NEEDED:**

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides/overhead transparencies for this lesson plan

**REFERENCES:**

- Fire Investigation 1B Student Manual, SFT, 2000
- Building Construction, IFSTA, Second Edition
- Building Construction for the Fire Service, F. L. Brannigan, NFPA, Third Edition
- Fire Protection Handbook, NFPA, 18<sup>th</sup> Edition
- Kirk's Fire Investigation, John DeHaan, Brady Prentice Hall, 4<sup>th</sup> Edition, 1997

**PREPARATION:**

The fire investigator must be aware of the effects of building components and systems on fire growth and spread, and the value of construction drawings in reconstruction of the fire investigation scene. Construction drawings can assist the investigator in explaining fire spread throughout the structure. A working knowledge of construction terminology is essential for investigation reporting and courtroom presentation.

**PRESENTATION**

**APPLICATION**

**I. CONSTRUCTION DRAWINGS**

- A. The importance of reviewing construction drawings by the fire investigator
  - 1. An aid in reconstructing the scene of a severely fire-damaged building
  - 2. Determine the location of firewalls, exits, electrical, heating ventilation systems, etc.
  - 3. An aid in preparing a schematic drawing of the building for the investigative report
  - 4. An aid in helping to determine and understand fire spread characteristics

**SLIDE: 7-4-1**

**II. CONSTRUCTION DRAWING VIEWS**

- A. Plan view
  - 1. Site plan
    - a) Overall review of the layout of a building as it relates to the street and property lines
      - 1) Most site plans have the type of construction, occupancy, and total square footage printed on them
      - 2) Also called plot plan
  - 2. Floor plan
    - a) Identifying the basic layout of the building to include

**SLIDE: 7-4-2**

PRESENTATION	APPLICATION
<p>1) Location of walls, doors, windows, hallways, floor openings, stairwells, etc.</p> <p>B. Elevation view</p> <ol style="list-style-type: none"> <li>1. A two-dimensional exterior view of the building               <ol style="list-style-type: none"> <li>a) Labeled according to direction the wall faces</li> </ol> </li> <li>2. Contain information about location and size of doors, walls, and exterior finish materials</li> </ol> <p>C. Sectional view</p> <ol style="list-style-type: none"> <li>1. Vertical view of sectional cut-away of the building               <ol style="list-style-type: none"> <li>a) Complete cross section</li> <li>b) Construction feature cross-section</li> <li>c) Detail cross-section</li> </ol> </li> </ol> <p>D. Detail view</p> <ol style="list-style-type: none"> <li>1. Shows feature in a larger scale</li> <li>2. Allows larger drawing so a feature such as installation of fire door assembly is clearly visible</li> </ol> <p>E. Electrical drawings</p> <ol style="list-style-type: none"> <li>1. Location and type of electrical services, circuits, and conduits and what they serve</li> </ol> <p><b>NOTE:</b> Show an example of a set of construction drawings specifically showing the type of construction, occupancy, and total square footage.</p>	



<b>PRESENTATION</b>	<b>APPLICATION</b>
<p>4. Specialized drawings</p> <ul style="list-style-type: none"> <li>a) Drawings that show the design and installation of specialized equipment</li> <li>b) Drawings that show the layout of stock and merchandise for warehousing or sale</li> </ul> <p>K. Building department</p> <ul style="list-style-type: none"> <li>1. Be sure to check with building department for remodeling permits/plans <ul style="list-style-type: none"> <li>a) Ask about “as built” drawings for more accurate information</li> </ul> </li> </ul> <p>L. Fire department</p> <ul style="list-style-type: none"> <li>1. Prefire plans for special information and sketches</li> </ul> <p><b>III. BUILDING CONSTRUCTION CLASSIFICATIONS</b></p> <p>A. Type I</p> <ul style="list-style-type: none"> <li>1. Fire resistive</li> <li>2. Concrete, steel, iron, masonry</li> </ul> <p>B. Type II</p> <ul style="list-style-type: none"> <li>1. Noncombustible</li> <li>2. Concrete, steel, iron, masonry</li> </ul> <p>C. Type III</p> <ul style="list-style-type: none"> <li>1. Ordinary construction</li> <li>2. Noncombustible exterior walls</li> </ul>	<p><b>SLIDE: 7-4-5</b></p>

PRESENTATION	APPLICATION
<p>3. Brick and joist</p> <p>D. Type IV</p> <ol style="list-style-type: none"> <li>1. Heavy timber</li> <li>2. 4"x6" structural members is the minimum</li> </ol> <p>E. Type V</p> <ol style="list-style-type: none"> <li>1. All building materials allowed by code</li> <li>2. Also known as wood frame</li> </ol> <p>F. Construction classification by type may not be possible without the investigator referencing the construction drawings</p> <p><b>IV. BUILDING CONSTRUCTION FEATURES THAT AFFECT FIRE SPREAD</b></p> <p>A. Interior finishes</p> <ol style="list-style-type: none"> <li>1. Wall coverings</li> <li>2. Floor coverings</li> <li>3. Furnishings</li> <li>4. Decorations</li> </ol> <p>B. Concealed spaces</p> <ol style="list-style-type: none"> <li>1. Ceiling</li> <li>2. Between floors</li> <li>3. Within walls</li> <li>4. Created by remodel</li> </ol>	<p><b>SLIDE: 7-4-6</b></p>

PRESENTATION	APPLICATION
<ul style="list-style-type: none"> <li>C. Breaches in walls, floors, and ceilings</li> <li>D. High-rise               <ul style="list-style-type: none"> <li>1. Stack effect</li> <li>2. Pressurized stairwell</li> <li>3. Auto-exposure</li> </ul> </li> </ul> <p><b>V. THE EFFECTS OF BUILDING SYSTEMS ON THE SPREAD OF FIRE</b></p> <ul style="list-style-type: none"> <li>A. Heating, ventilation, and air conditioning systems (HVAC)               <ul style="list-style-type: none"> <li>1. Multiple systems servicing a single building</li> <li>2. High-rise buildings</li> <li>3. Fire/smoke protection</li> </ul> </li> <li>B. Electrical systems               <ul style="list-style-type: none"> <li>1. Sub-panels</li> </ul> </li> <li>C. Plumbing</li> <li>D. Heating equipment</li> <li>E. Fire protection systems               <ul style="list-style-type: none"> <li>1. Operation and system controls</li> <li>2. Common methods used to defeat fire protection systems</li> <li>3. The expected effects of fire protection systems on fire spread</li> </ul> </li> </ul>	<p><b>SLIDE: 7-4-7</b></p>

**PRESENTATION**

**APPLICATION**

**VI. METHODS USED TO IDENTIFY THE NEED FOR EXPERT RESOURCES**

- A. Electrical or mechanical system that is more complicated than you are trained to examine
  - 1. Local electric utility personnel are experts available to the public fire investigator
  - 2. Electrical engineers are available on a fee basis
- B. Fire protection systems
  - 1. Department personnel may have expertise and can assist in the system examination
- C. Building systems or components not familiar to the investigator should be reviewed by subject matter expert
  - 1. Review by subject matter expert may not be necessary if the system or component did not cause or contribute to the fire

**SLIDE: 7-4-8**

***SUMMARY:***

Fire investigators should be able to read and interpret a set of construction drawings. Plans can be very helpful in reconstructing post-fire scenes and in interpreting fire spread throughout a building.

***EVALUATION:***

The student will complete the written quiz and student activity at a time determined by the instructor.

***ASSIGNMENT:***

Review your notes and read Chapter 7-4 in your Fire Investigation 1B Student Manual, SFT, 2000 in order to prepare yourself for the upcoming quiz. Study for the next session.



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

**INSTRUCTIONS:** This is a short answer test. For each of the following questions or statements, enter the correct answer in the corresponding numbered space provided.

**EXAMPLE:** Fire Investigation 1B is required for \_\_\_\_\_ certification. Fire Investigator I

- |   |   |
|---|---|
| 1. Motive is the _____ for setting the fire.<br><i>Student Manual, page 5</i>   | 1. <i>reason</i>  |
| 2. Intent is the _____ of setting the fire.<br><i>Student Manual, page 5</i>  | 2. <i>deliberateness</i>  |
| 3. The six general arson motives for setting fires are _____, _____, _____, _____, _____, and _____.<br><i>Student Manual, page 5</i> | 3. <i>fraud</i><br><i>revenge/spite</i><br><i>crime concealment</i><br><i>civil disorder</i><br><i>vanity</i><br><i>maliciousness</i> |
| 4. The most deadly of the arson motives is _____.<br><i>Student Manual, page 6</i>  | 4. <i>revenge</i>   |
| 5. A history of business failure leads the investigator to suspect that the arson was for _____.<br><i>Student Manual, page 10</i>    | 5. <i>insurance fraud</i>   |
| 6. Pyromania is not a motive, but is considered a _____ by the mental health industry.<br><i>Student Manual, page 5</i>               | 6. <i>mental state</i>  |



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #1

MOTIVES AND SCENE EXAMINATION MODULES

---

7. Structural steel that is not \_\_\_\_\_ or \_\_\_\_\_ might fail when exposed to heat at the fire scene.  
*Student Manual, page 19*
8. Telephone wires and television cables can become \_\_\_\_\_ through direct contact with damaged electrical wires.  
*Student Manual, page 20*
9. Electrical service into a structure should be disconnected at the \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ by power utility personnel.  
*Student Manual, page 30*
10. If an investigator is on the scene alone, the \_\_\_\_\_ and the investigator's supervisor should be informed about their location and activities.  
*Student Manual, page 30*
7. *protected*  
*treated*
8. *energized*
9. *pole*  
*vault*  
*street service*
10. *communications center*



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #2  
EVIDENCE MODULE

**INSTRUCTIONS:** This is a short answer test. For each of the following questions or statements, enter the correct answer in the corresponding numbered space provided.

**EXAMPLE:** Fire Investigation 1B is required for \_\_\_\_\_ certification. Fire Investigator I

- 
- |  |  |
|--|--|
| 1. Bloodstain evidence should be allowed to completely _____ and be placed in a _____.<br><i>Student Manual, page 81</i>   | 1. <i>dry</i><br><i>paper bag</i>              |
| 2. The chain of custody proves that the exhibit offered as evidence is in fact _____.<br><i>Student Manual, page 52</i>  | 2. <i>the same evidence found at the scene</i> |
| 3. Evidence that is based on interpretation and analysis is called _____ evidence.<br><i>Student Manual, page 49</i>   | 3. <i>circumstantial</i>                       |
| 4. A tangible item of evidence (gas, liquid, or solid) that is subject to scientific inspection is called _____ evidence.<br><i>Student Manual, page 49</i>                  | 4. <i>physical</i>                             |
| 5. Physical evidence, after being examined in a laboratory and connects the suspect to the crime scene, plays a/an _____ role as evidence.<br><i>Student Manual, page 49</i> | 5. <i>associative</i>                          |
| 6. A _____ evidence container is <i>not</i> used to collect flammable liquids.<br><i>Student Manual, page 51</i>   | 6. <i>plastic</i>                              |
| 7. All evidence must be _____ to the fact offered before it will be accepted in court.<br><i>Student Manual, page 50</i>   | 7. <i>relevant</i>                             |



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

8. Evidence that tends to eliminate the suspect is called \_\_\_\_\_.  
*Student Manual, page 50*
9. Once an object has been recognized as evidence, it must be properly \_\_\_\_\_ and \_\_\_\_\_.  
*Student Manual, page 49*
10. A comparison sample is used to \_\_\_\_\_.  
*Student Manual, page 72*
11. Evidence tags and labels should contain the following basic information \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.  
*Student Manual, page A34*
12. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ are the four basic evidence containers an investigator should always have available.  
*Student Manual, page 61*
8. *exclusionary*
9. *documented*  
*preserved*
10. *compare to the sample of evidence collected*
11. *incident number*  
*date collected*  
*identity of finder*  
*location where found*  
*description*  
*identity of person receiving*
12. *Metal cans*  
*paper bags*  
*paper envelopes*  
*plastic (or cellophane) envelopes*



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #3  
INTERVIEWING MODULE

**INSTRUCTIONS:** This is a short answer test. For each of the following questions or statements, enter the correct answer in the corresponding numbered space provided.

**EXAMPLE:** Fire Investigation 1B is required for \_\_\_\_\_ certification. Fire Investigator I

- 
- 
- |  |   |
|--|---|
| 1. When a suspect offers to make restitution, this is a sign of _____.   | 1. <i>guilt</i>   |
| <i>Student Manual, page A51</i>  |   |
| 2. Investigators should not make _____ or _____ to obtain confessions.   | 2. <i>promises</i><br><i>threats</i>  |
| <i>Student Manual, page 149</i>  |   |
| 3. The purpose of an interview is to gather _____.   | 3. <i>new information</i>   |
| <i>Student Manual, page 141</i>  |   |
| 4. When conducting interviews, the sense of _____ is most important.   | 4. <i>listening with your eyes</i>  |
| <i>Student Manual, page 141</i>  |   |
| 5. During the interview, if the suspect states _____, _____, or _____, it indicates the suspect committed the crime. | 5. <i>I'll pay for the damage.</i><br><i>You want me to lie? OK, I did it.</i><br><i>What would happen to someone if...</i> |
| <i>Student Manual, page 149</i>  |   |



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #3  
INTERVIEWING MODULE

6. The Cognitive Interview Technique consists of \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

*Student Manual, page 152-153*

6. *reconstructing circumstances*

*reporting everything*

*recounting in a different order*

*using different perspective*

*let's pretend*

INSTRUCTIONS: This is a true-false test. If the statement is true, draw a circle around the "T." If the statement is false, draw a circle around the "F."

EXAMPLE:  T  F Fire Investigation 1B is required for Fire Investigator I certification.

T  F 7. A finding of true in a juvenile proceeding is considered to be a criminal conviction.

*Student Manual, page 169*

T  F 8. A juvenile under the age of 14 cannot be found responsible for a criminal act.

*Student Manual, page 169*

T  F 9. After a hearing, a juvenile can be determined to be tried as an adult if the juvenile is at least 16.

*Student Manual, page 169*

T  F 10. W&I §602 violations can be when a juvenile violates an ordinance that establishes curfew.

*Student Manual, page 169*

T  F 11. A juvenile must be Mirandized at time of arrest whether or not you intend to interview.

*Student Manual, page 169*



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

**INSTRUCTIONS:** This is a short answer test. For each of the following questions or statements, enter the correct answer in the corresponding numbered space provided.

**EXAMPLE:** Fire Investigation 1B is required for \_\_\_\_\_ certification. Fire Investigator I

- |   |   |
|---|---|
| 1. All fire death investigations should be conducted as _____ investigations.<br><i>Student Manual, page 179</i>                      | 1. <i><b>homicide</b></i>   |
| 2. A skull that is fractured or exploded outward is a sign of _____ within the skull.<br><i>Student Manual, page 203</i>              | 2. <i><b>pressure</b></i>   |
| 3. After the victim is removed, the area should be _____.<br><i>Student Manual, page 192</i>  | 3. <i><b>sectioned</b></i>  |
| 4. _____ percent carbon monoxide in the blood may be lethal.<br><i>Student Manual, page 202</i>                                       | 4. <i><b>60</b></i>   |
| 5. Three of the five manners of death include _____, _____, and _____.<br><i>Student Manual, page 198</i>                             | 5. <i><b>natural</b></i><br><i><b>accidental</b></i><br><i><b>homicide</b></i><br><i><b>suicide</b></i><br><i><b>undetermined</b></i> |
| 6. The coroner's office or medical examiner's office is responsible for the _____ of the deceased.<br><i>Student Manual, page 183</i> | 6. <i><b>property</b></i>   |



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #4  
FATALITIES AND INJURIES

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7. The \_\_\_\_\_ does *not* determine the cause of death.  
*Student Manual, page 182*
8. Logistical considerations in a fire death investigation include scene security and \_\_\_\_\_.  
*Student Manual, page 180*
9. \_\_\_\_\_ and \_\_\_\_\_ investigations are *not* separate or independent of each other.  
*Student Manual, page 193*
10. \_\_\_\_\_ should be conducted only by the \_\_\_\_\_ while conducting the scene examination.  
*Student Manual, page 180*
7. *fire investigator*
8. *time commitment*
9. *Fire death*  
*fire scene*
10. *Overhaul*  
*investigation team*



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #5  
INFORMATION RESOURCES MODULE

**INSTRUCTIONS:** This is a true-false test. If the statement is true, draw a circle around the "T."  
If the statement is false, draw a circle around the "F."

**EXAMPLE:**  T F Fire Investigation 1B is required for Fire Investigator I certification.

- 
- ♦T F 1. The prosecuting attorney's decision to prosecute an arson case is often determined, in part, by the documentation of the investigator.  
*Student Manual, page 212*
- T ♦F 2. There are twelve (12) categories in the case report format.  
*Student Manual, page 228*
- ♦T F 3. Field notes are frequently identified as the most important tool used by the investigator.  
*Student Manual, page 211*
- T ♦F 4. 3"x5" index cards are a useful and convenient medium for note taking.  
*Student Manual, page 213*
- ♦T F 5. The case report is the official record of the activity and findings of the investigator.  
*Student Manual, page 211*
- T ♦F 6. The investigation report is confidential.  
*Student Manual, page 215*
- ♦T F 7. In category two (2) SUMMARY, the objective is to give a brief synopsis of the case in usually one or two paragraphs.  
*Student Manual, page 228*



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #5  
INFORMATION RESOURCES MODULE

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- ♦T F 8. If Evidence or Photographic Logs were used in a case report, it would be placed in category ten (10) ATTACHMENTS.  
*Student Manual, page 228*
- ♦T F 9. The opinion and conclusion of the fire investigator is in the last section of the narrative report.  
*Student Manual, page 219*
- ♦T F 10. An itemization of loss will always include items that can be determined to be at the location during the initial cause and origin investigation.  
*Student Manual, page 254*



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #1

MOTIVES AND SCENE EXAMINATION MODULES

---

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**INSTRUCTIONS:** This is a short answer test. For each of the following questions or statements, enter the correct answer in the corresponding numbered space provided.

**EXAMPLE:** Fire Investigation 1B is required for \_\_\_\_\_ certification. Fire Investigator I

---

1. Motive is the \_\_\_\_\_ for setting the fire. 1. \_\_\_\_\_

2. Intent is the \_\_\_\_\_ of setting the fire. 2. \_\_\_\_\_

3. The six general arson motives for setting fires are 3. \_\_\_\_\_  
\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,  
\_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

4. The most deadly of the arson motives is \_\_\_\_\_. 4. \_\_\_\_\_

5. A history of business failure leads the investigator to suspect 5. \_\_\_\_\_  
that the arson was for \_\_\_\_\_.

6. Pyromania is not a motive, but is considered a \_\_\_\_\_ 6. \_\_\_\_\_  
by the mental health industry.



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #1

MOTIVES AND SCENE EXAMINATION MODULES

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7. Structural steel that is not \_\_\_\_\_ or \_\_\_\_\_ might fail when exposed to heat at the fire scene. 7. \_\_\_\_\_  
\_\_\_\_\_
8. Telephone wires and television cables can become \_\_\_\_\_ through direct contact with damaged electrical wires. 8. \_\_\_\_\_
9. Electrical service into a structure should be disconnected at the \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ by power utility personnel. 9. \_\_\_\_\_  
\_\_\_\_\_
10. If an investigator is on the scene alone, the \_\_\_\_\_ and the investigator's supervisor should be informed about their location and activities. 10. \_\_\_\_\_



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #2  
EVIDENCE MODULE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**INSTRUCTIONS:** This is a short answer test. For each of the following questions or statements, enter the correct answer in the corresponding numbered space provided.

**EXAMPLE:** Fire Investigation 1B is required for \_\_\_\_\_ certification. Fire Investigator I

- 
1. Bloodstain evidence should be allowed to completely \_\_\_\_\_ and be placed in a \_\_\_\_\_. 1. \_\_\_\_\_  
\_\_\_\_\_
  2. The chain of custody proves that the exhibit offered as evidence is in fact \_\_\_\_\_. 2. \_\_\_\_\_
  3. Evidence that is based on interpretation and analysis is called \_\_\_\_\_ evidence. 3. \_\_\_\_\_
  4. A tangible item of evidence (gas, liquid, or solid) that is subject to scientific inspection is called \_\_\_\_\_ evidence. 4. \_\_\_\_\_
  5. Physical evidence, after being examined in a laboratory and connects the suspect to the crime scene, plays a/an \_\_\_\_\_ role as evidence. 5. \_\_\_\_\_
  6. A \_\_\_\_\_ evidence container is *not* used to collect flammable liquids. 6. \_\_\_\_\_



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

7. All evidence must be \_\_\_\_\_ to the fact offered before it will be accepted in court. 7. \_\_\_\_\_
8. Evidence that tends to eliminate the suspect is called \_\_\_\_\_. 8. \_\_\_\_\_
9. Once an object has been recognized as evidence, it must be properly \_\_\_\_\_ and \_\_\_\_\_. 9. \_\_\_\_\_  
\_\_\_\_\_
10. A comparison sample is used to \_\_\_\_\_. 10. \_\_\_\_\_
11. Evidence tags and labels should contain the following basic information \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_. 11. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
12. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ are the four basic evidence containers an investigator should always have available. 12. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #3  
INTERVIEWING MODULE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**INSTRUCTIONS:** This is a short answer test. For each of the following questions or statements, enter the correct answer in the corresponding numbered space provided.

**EXAMPLE:** Fire Investigation 1B is required for \_\_\_\_\_ certification. Fire Investigator I

1. When a suspect offers to make restitution, this is a sign of \_\_\_\_\_ . 1. \_\_\_\_\_

2. Investigators should not make \_\_\_\_\_ or \_\_\_\_\_ to obtain confessions. 2. \_\_\_\_\_

3. The purpose of an interview is to gather \_\_\_\_\_. 3. \_\_\_\_\_

4. When conducting interviews, the sense of \_\_\_\_\_ is most important. 4. \_\_\_\_\_

5. During the interview, if the suspect states \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_, it indicates the suspect committed the crime. 5. \_\_\_\_\_



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #3  
INTERVIEWING MODULE

6. The Cognitive Interview Technique consists of \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
6. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**INSTRUCTIONS:** This is a true-false test. If the statement is true, draw a circle around the "T." If the statement is false, draw a circle around the "F."

**EXAMPLE:**  T  F Fire Investigation 1B is required for Fire Investigator I certification.

- T  F 7. A finding of true in a juvenile proceeding is considered to be a criminal conviction.
- T  F 8. A juvenile under the age of 14 cannot be found responsible for a criminal act.
- T  F 9. After a hearing, a juvenile can be determined to be tried as an adult if the juvenile is at least 16.
- T  F 10. W&I §602 violations can be when a juvenile violates an ordinance that establishes curfew.
- T  F 11. A juvenile must be Mirandized at time of arrest whether or not you intend to interview.



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #4  
FATALITIES AND INJURIES

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**INSTRUCTIONS:** This is a short answer test. For each of the following questions or statements, enter the correct answer in the corresponding numbered space provided.

**EXAMPLE:** Fire Investigation 1B is required for \_\_\_\_\_ certification. Fire Investigator I

- 
1. All fire death investigations should be conducted as \_\_\_\_\_ investigations. 1. \_\_\_\_\_
  
  2. A skull that is fractured or exploded outward is a sign of \_\_\_\_\_ within the skull. 2. \_\_\_\_\_
  
  3. After the victim is removed, the area should be \_\_\_\_\_. 3. \_\_\_\_\_
  
  4. \_\_\_\_\_ percent carbon monoxide in the blood may be lethal. 4. \_\_\_\_\_
  
  5. Three of the five manners of death include \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. 5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
  6. The coroner's office or medical examiner's office is responsible for the \_\_\_\_\_ of the deceased. 6. \_\_\_\_\_



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #4  
FATALITIES AND INJURIES

---

7. The \_\_\_\_\_ does *not* determine the cause of death. 7. \_\_\_\_\_
8. Logistical considerations in a fire death investigation include scene security and \_\_\_\_\_. 8. \_\_\_\_\_
9. \_\_\_\_\_ and \_\_\_\_\_ investigations are *not* separate or independent of each other. 9. \_\_\_\_\_  
\_\_\_\_\_
10. \_\_\_\_\_ should be conducted only by the \_\_\_\_\_ while conducting the scene examination. 10. \_\_\_\_\_  
\_\_\_\_\_



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #5  
INFORMATION RESOURCES MODULE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**INSTRUCTIONS:** This is a true-false test. If the statement is true, draw a circle around the "T."  
If the statement is false, draw a circle around the "F."

**EXAMPLE:**  F Fire Investigation 1B is required for Fire Investigator I certification.

- 
- T F 1. The prosecuting attorney's decision to prosecute an arson case is often determined, in part, by the documentation of the investigator.
- T F 2. There are twelve (12) categories in the case report format.
- T F 3. Field notes are frequently identified as the most important tool used by the investigator.
- T F 4. 3"x5" index cards are a useful and convenient medium for note taking.
- T F 5. The case report is the official record of the activity and findings of the investigator.
- T F 6. The investigation report is confidential.
- T F 7. In category two (2) SUMMARY, the objective is to give a brief synopsis of the case in usually one or two paragraphs.



# FIRE INVESTIGATION 1B

Techniques for Fire Investigation

QUIZ #5  
INFORMATION RESOURCES MODULE

---

- T F 8. If Evidence or Photographic Logs were used in a case report, it would be placed in category ten (10) ATTACHMENTS.
- T F 9. The opinion and conclusion of the fire investigator is in the last section of the narrative report.
- T F 10. An itemization of loss will always include items that can be determined to be at the location during the initial cause and origin investigation.