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Fire and Arson Scene Evidence

A Guide for Public
Safety Personnel

Research Report

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Fire and Arson Scene Evidence: A Guide for Public Safety Personnel

Written and Approved by the Technical Working Group on
Fire/Arson Scene Investigation

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Opinions or points of view expressed in this document represent a consensus of the authors and do not necessarily reflect the official position of the U.S. Department of Justice.

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Message From the Attorney General

Actions taken at the outset of an investigation at a fire and arson scene can play a pivotal role in the resolution of a case. Careful, thorough investigation is key to ensuring that potential physical evidence is not tainted or destroyed or potential witnesses overlooked.

While many agencies have programs in fire and arson scene processing, the level of training and resources available varies from jurisdiction to jurisdiction, as does the opportunity to practice actual investigation. To assist these agencies, the National Institute of Justice convened a group of law enforcement and legal practitioners, as well as expert fire investigators, to develop improved procedures for the investigation and collection of evidence from fire and arson scenes.

I commend the hard work of the 31 members of the technical working group that created this *Guide*. They represent the law enforcement, prosecution, defense, and fire and arson investigation communities, and their collective expert knowledge, experience, and dedication made this effort a success.

This *Guide* is one method of promoting quality fire and arson scene investigation. The type and scope of an investigation will vary from case to case. Every jurisdiction should give careful consideration to the recommendations in this *Guide* and to its own unique local conditions and logistical circumstances. Although factors that vary among investigations may call for different approaches or even preclude the use of certain procedures described in the *Guide*, consideration of the *Guide*'s recommendations may be invaluable to a jurisdiction shaping its own protocols.

Janet Reno

Message From the President of the University of Central Florida

The University of Central Florida (UCF) is proud to take a leading role in the investigation of fire and explosion scenes through the establishment of the National Center for Forensic Science (NCFS). The work of the Center's faculty, staff, and students, in cooperation with the National Institute of Justice (NIJ), has helped produce the NIJ Research Report *Fire and Arson Scene Evidence: A Guide for Public Safety Personnel*.

More than 150 graduates of UCF's 25-year-old program in forensic science are now working in crime laboratories across the country. Our program enjoys an ongoing partnership with NIJ to increase knowledge and awareness of fire and explosion scene investigation. We anticipate that this type of mutually beneficial partnership between the university, the criminal justice system, and private industry will become even more prevalent in the future.

As the authors of the *Guide* indicate, the field of fire and explosion investigation lacks nationally coordinated investigative protocols. NCFS recognizes the need for this coordination. The Center maintains and updates its training criteria and tools so that it may serve as a national resource for public safety personnel who may encounter a fire or explosion scene in the line of duty.

I encourage interested and concerned public safety personnel to use *Fire and Arson Scene Evidence: A Guide for Public Safety Personnel*. The procedures recommended in the *Guide* can help to ensure that more investigations are successfully concluded through the proper identification, collection, and examination of all relevant forensic evidence.

Dr. John C. Hitt

Technical Working Group on Fire/Arson Scene Investigation

The Technical Working Group on Fire/Arson Scene Investigation (TWGFASI) is a multidisciplinary group of content area experts from across the United States and Canada, from both urban and rural jurisdictions, each representing his or her respective agency or practice. Each of these individuals is experienced in the investigation of fires, the analysis of evidence gathered, or the use in the criminal justice system of information produced by the investigation. They represent such entities as fire departments, law enforcement agencies, forensic laboratories, insurance companies, investigation firms, and government agencies. Many of the members of TWGFASI were selected from the Technical Working Group on Fires and Explosions (TWGFEX), which serves as an advisory panel to the National Center for Forensic Science (NCFS).

At the outset of the TWGFEX effort, the National Institute of Justice (NIJ) and NCFS created the National Fire/Arson Scene Planning Panel (the Panel), which evolved into TWGFASI—composed of distinguished law enforcement and research professionals—to define needs, develop initial strategies, and steer the larger group. Additional members of TWGFASI were then selected from recommendations solicited from the Panel, NIJ’s regional National Law Enforcement and Corrections Technology Centers, and national agencies and organizations, such as the National Fire Protection Association, the National Association of Fire Investigators, and the U.S. Fire Administration.

Collectively, over a 2-year period, the 31 members of TWGFASI listed on the following page worked together to develop this *Guide, Fire and Arson Scene Evidence: A Guide for Public Safety Personnel*.

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* These individuals served as editors during the document development process.

Preface

It is the intention of this *Guide* to acquaint a broad spectrum of public safety personnel with the fire investigation process, so they may understand their role in this important task and help identify, locate, and preserve evidence in its varied forms, to either assist a specialist investigator when one is needed or to adequately document and collect evidence when no assistance is needed or available. This *Guide* focuses on the documentation and collection of physical evidence at fire/arson scenes. Other issues of investigation—such as insurance inquiries, background information, fire deaths, the interpretation of fire dynamics and physical evidence, and case analysis and profiling—are not addressed in this document.

Not every portion of this document may be applicable to all fires. It is at the discretion of responding personnel (depending on their responsibilities, as well as the purpose and scope of their duties) to apply the procedures recommended in this *Guide* to a particular incident. Some of the procedures described in this *Guide* may not be performed in the sequence described or may be performed simultaneously.

Acknowledgments

The National Institute of Justice (NIJ) wishes to thank the members of the Technical Working Group on Fire/Arson Scene Investigation (TWGFASI) for their extensive efforts on this project and their dedication to improving the procedures for fire/arson scene investigation. Each of the 31 experts gave their time and expertise to draft and review this *Guide*, providing feedback and perspective from a variety of disciplines and from many areas of the Nation. The true strength of this *Guide* is derived from their commitment to produce procedures that could be implemented across the country, from rural townships to large cities. In addition, thanks are extended to the agencies and organizations that TWGFASI members represent for their flexibility and support, which enabled the participants to see this project to completion.

NIJ is immensely grateful to the National Center for Forensic Science (NCFS) at the University of Central Florida, particularly Director Carrie Whitcomb and Project Coordinator Joan Jarvis, for its coordination of the TWGFASI effort. NCFS's support in planning and hosting the Technical Working Group meetings, as well as the support of the staff in developing the *Guide*, made this work possible.

NIJ is grateful to the individuals from various national organizations who responded to the request for nominations of experts in the field of fire/arson scene investigation. TWGFASI members were selected from their recommendations. In particular, thanks go to the American Society of Crime Laboratory Directors, the National District Attorneys Association, the International Association of Arson Investigators, and the International Association of Bomb Technicians and Investigators. Additionally, thanks are extended to the individuals, agencies, and organizations across the country that participated in the review of this *Guide* and provided valuable comments and input. While all review comments

were given careful consideration by TWGFASI in developing the final document, the review by these organizations is not intended to imply their endorsement of the *Guide*.

NIJ would like to thank the co-manager for this project, Kathleen Higgins, for her advice and significant contributions to the development of the *Guide*.

Special thanks go to former NIJ Director Jeremy Travis for his support and guidance and to Lisa Forman, Lisa Kaas, and Anjali Swinton for their contributions to the Technical Working Group program. Thanks also go to Rita Premo of Aspen Systems Corporation, for her tireless work editing and re-editing the various drafts of the *Guide*.

Finally, NIJ would like to acknowledge Attorney General Janet Reno, whose support and commitment to the improvement of the criminal justice system made this work possible.

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Introduction

It is a capital mistake to theorize before one has data. Insensibly, one begins to twist facts to suit theories instead of theories to suit facts.

—Sherlock Holmes, *A Study in Scarlet*, by Sir Arthur Conan Doyle

As Sherlock Holmes pointed out, many types of investigations are susceptible to prejudgment, but few as often as fire scene investigations. Fires, by their destructive nature, consume the evidence of their initiation and progress as they grow. Investigations are compromised, and often scenes are further destroyed by the activities of the fire service, whose primary responsibilities are to save lives and protect property against further damage. Fire scenes often involve all manner of public entities: emergency medical, law enforcement, and fire services. Public utilities such as gas and electric companies may be involved. Passers-by, owners, tenants, customers, delivery agents all may have relevant information. The press and curious individuals attracted to large fire scenes can complicate investigations, as they make security a necessity. As has frequently been said, “A fire investigation is like a picture puzzle. Everyone involved with it has some of the pieces, but no one has the whole picture. It is up to the investigator to gather enough of these pieces together to solve the puzzle.”

Why Investigate Fires?

Since Roman times, civil authorities have recognized the threat that fire represents, not only to the well-being of individuals, but also, and perhaps more importantly, to the welfare and security of the community as a whole. In the days of wooden walls and roofs and straw-covered floors, any fire could ravage an entire city. So, it was in the interest of all concerned to investigate fires and establish how they began. Civil authorities attempted to control the fire risk by assessing penalties if an accidental fire was allowed to get out of control. Dangerous practices, such as leaving cooking fires unguarded, were identified and controlled.

William the Conqueror issued an edict that cooking fires be damped or covered after a particular time of evening so that unattended fires could not flare up. This policy of *couvre feu* (cover the fire) gave rise to the “curfew” of today. If authorities could determine the fire was deliberately set, the perpetrator could be identified and punished. Some of the oldest English common laws regarded arson to be the crime of burning the house or dwelling of another. The crime of arson was considered to be such a danger that it was punishable by death.

The same rationale applies today. Fires of accidental cause need to be identified, so that dangerous practices, such as filling kerosene room heaters with gasoline, can be eliminated by public education, or so that defective or dangerous products, such as instant-on televisions or room heaters with no overheating or tip-over protection, can be taken off the market or modified so they no longer pose a significant fire risk. Fires of incendiary (i.e., deliberate) cause must be detected, so that the firesetter can be intercepted before doing more harm and punished as necessary.

The Fire Problem in the United States

According to the National Fire Incident Reporting System (NFIRS) of the U.S. Fire Administration (USFA), Federal Emergency Management Agency, the United States has one of the highest per capita fire death rates among industrialized nations. In 1997, the U.S. fire death rate was 15.2 deaths per million. This was reflected in approximately 4,050 deaths and more than 23,000 injuries for that year alone. Nearly 2 million fires occurred in 1997, with a total estimated dollar loss of \$8.5 billion.

Thirty-one percent of these fires were in structures. Residential fires comprised 23 percent of all fires and 74 percent of all structure fires. Eighty-four percent of all fatalities occurred in homes. In addition to structure fires, each year hundreds of thousands of vehicle and outside fires occur. In 1997, vehicle fires accounted for nearly 400,000 incidents, resulting in approximately 450 civilian deaths and 1,700 civilian injuries. Outside fires were estimated at more than 700,000 occurrences, accounting for 40 percent of the total number of reported fires.

Arson fires (defined as incendiary/suspicious in NFIRS) comprised almost 16 percent of all reported fires in 1997 and accounted for more than \$554 million, or 15 percent, of the total estimated dollar loss. Since all fires are considered accidental until they can be proven to be intentionally set, the reported numbers are probably very conservative. There is also reluctance to report arson fires, as it is feared that it may cause a negative impact on the community or its economy.

While the general trend in numbers of fires and fire deaths has shown a steady gradual decline over the past decade, the overall costs are still significant. A continuing effort must be made to accurately identify the exact origin (where the fire started) and cause (the factors that brought the ignition source and first material ignited together) of all fires. This will assist in learning more about how to prevent fires in the future. Perhaps more important are preventive measures such as installing working smoke detectors and residential sprinklers in every home and using public education programs to effect behavior change.

The Problem of Fire Investigations

The advantages of accurate and thorough fire investigations are obvious. The United States is one of the few countries where public authorities have statutory responsibility to investigate all fires and determine their origins and causes. While this may appear to be a solution to the problem of fires and arsons, a number of major complications in fire investigations exist in the United States:

- ◆ A fire can be a complex event whose origin and cause are not obvious. Investigators may have to expend considerable time and effort before the cause can be identified. This is the area where Holmes' dictum is especially applicable. Without gathering data, the investigator can only guess at what might have caused the fire, based on circumstances alone. The training and preparation of qualified investigators are often costly and time-consuming, requiring dedication to the profession over many years.

- ◆ The destructive power of the fire itself compromises evidence from the outset. The larger a fire becomes and the longer it burns, the less evidence of causation will remain. In some fires, sufficient data to establish the origin and cause (i.e., evidence) do not survive, no matter how diligent the search or well prepared the searcher. This destruction may be exacerbated by the normal and necessary duties of fire personnel carrying out rescue, suppression, overhaul, and salvage tasks.
- ◆ The complexity of the threat a major fire presents to the health and welfare of the community means that representatives from law enforcement, fire, rescue, and emergency medical services; hazardous materials teams; utility company personnel; health and safety officers; and other public agency personnel may be on hand and may conduct some obligatory official duties. The presence of so many people, in addition to members of the press and the public who were attracted by the sights and sounds of a major fire, offers yet more chances for scene security to be compromised and critical evidence to be contaminated, moved, or destroyed.
- ◆ Responsibility for the investigation of fires is split. While the fire service has the primary civil responsibility to establish a fire's cause, if the cause is determined to be accidental, the scene is released to the owner or the owner's insurance company for further examination. If the conclusion is that the fire was purposely set, a crime has been committed and law enforcement authority is needed to investigate the crime. This often means releasing the scene and evidence to a local law enforcement agency. Where local law enforcement has inadequate resources or personnel, an outside agency such as a State fire marshal, or even a Federal agency (e.g., the Bureau of Alcohol, Tobacco and Firearms [ATF]) may be asked to investigate. Any such transfer may cause complications in establishing lines of authority. In some agencies, investigative teams are composed of individuals from both law enforcement agencies and fire departments so that the continuity of the investigation can be maintained through both civil and criminal phases. In a few cases, individuals have both law

enforcement and fire authority, thanks to extensive cross-training, so cases are handled from start to finish by a minimal number of trained, motivated investigators.

- ◆ A lack of commitment to conduct fire investigations exists on the part of some law enforcement and fire agencies. Because of the demand for rescue, hazardous materials, and emergency medical assistance, in addition to their traditional duties of fire suppression, fire departments often find themselves with fewer resources to stretch to cover all obligations. As a result, the less visible responsibilities of fire investigation and fire prevention are often scaled back. These cutbacks occur despite the advantages that aggressive programs in both areas could provide to the individual department and to the community it serves: Preventing a fire means there is no loss of life or property, no risk to personnel, and no equipment costs; investigating a fire means that potential accidental or criminal threats to the community may be averted in the future. Law enforcement agencies, facing similar overwhelming demands for their time, might prefer not to become involved in cases where the scene is destroyed or at the very least compromised, time-consuming scene examination and interviews are required, and the resulting evidence is often complex and circumstantial (meaning prosecutors may not want to use it even if it is properly and completely collected).

Then Who Investigates Fires?

As might be gathered from the preceding points, who actually will investigate a fire is not an easy question to answer. In addition to law enforcement and fire authorities, there may be prosecuting attorney investigators, forensic laboratory experts, engineering specialists (fire, chemical, mechanical, or electrical), and private investigators representing insurance companies, owners, tenants, and manufacturers of the myriad ignition sources found in a modern home or business.

Why This *Guide*?

Considering the wide spectrum of people involved in the investigation of fires, perhaps it is understandable why uniform guidelines for fire scene documentation and evidence collection have not been previously crafted for those public safety personnel who may not be trained in the specialized aspects of fire scene investigation but may be in the position of having to respond to a fire/arson scene. Whether from law enforcement or fire agencies, the public-sector individuals responsible for investigations have had access to specialized training programs through USFA's National Fire Academy, ATF, the Federal Bureau of Investigation (FBI), State fire marshal offices, professional organizations such as the International Association of Arson Investigators, and various private-sector groups. In 1992, the National Fire Protection Association (NFPA) issued *NFPA 921: Guide for Fire and Explosion Investigations*¹, a consensus document reflecting the knowledge and experience of fire, engineering, legal, and investigative experts across the United States. This document is continuously reviewed, public proposals and comments are solicited, and a revised edition is produced every 3 to 5 years. It has become a benchmark for the training and expertise of everyone who purports to be an expert in the origin and cause determination of fires. Unfortunately, not everyone involved in the process of scene examination and evidence documentation and collection will have the opportunity to master the entire contents of comprehensive manuals, such as *NFPA 921*. As previously discussed, fires are common occurrences that threaten lives and communities, so many people are involved in fire investigations, and many people hold pieces of the puzzle, often without knowing it.

1. *NFPA 921: Guide for Fire and Explosion Investigations*, Quincy, Massachusetts: National Fire Protection Association.

Training Criteria

With the completion of this *Guide*, the National Institute of Justice (NIJ) intends to support the creation of training resource materials, including publications and online interactive programs, through agencies such as the National Center for Forensic Science (NCFS). These resources will make it possible for all those involved in fire scenes to optimize the evidence recovered in investigations.

Background

National Fire/Arson Scene Planning Panel and Technical Working Group on Fire/Arson Scene Investigation

NCFS, which is located at the University of Central Florida (UCF) in Orlando and is an NIJ grantee, held a national needs symposium on arson and explosives in August 1997. The symposium's purpose was to identify problem areas associated with the collection and analysis of fire and bombing debris. One of the problem areas identified by this national panel of experts was the need for improved awareness of available procedures for the recognition, documentation, and collection of evidence at fire and arson scenes. In spring 1998, NIJ and NCFS, using NIJ's template, created a technical working group to develop guides for fire/arson and explosion/bombing scene investigations. The NIJ Director selected members for a planning group—the National Fire/Arson Scene Planning Panel (the Panel)—to draft a guide for fire/arson scene investigation, as well as members for an explosion/bombing scene planning panel that met separately. The 11 Panel members represented Federal, State, and local agencies involved in the investigation of both accidental fires and arsons, as well as national and international organizations that have been involved with the creation of professional guidelines (such as *NFPA 921*) for scene investigations. The selected members not only had extensive personal experience in the examination of fire scenes but also represented the diversity of disciplines involved with fire investigations—from the scene to the laboratory and courtroom.

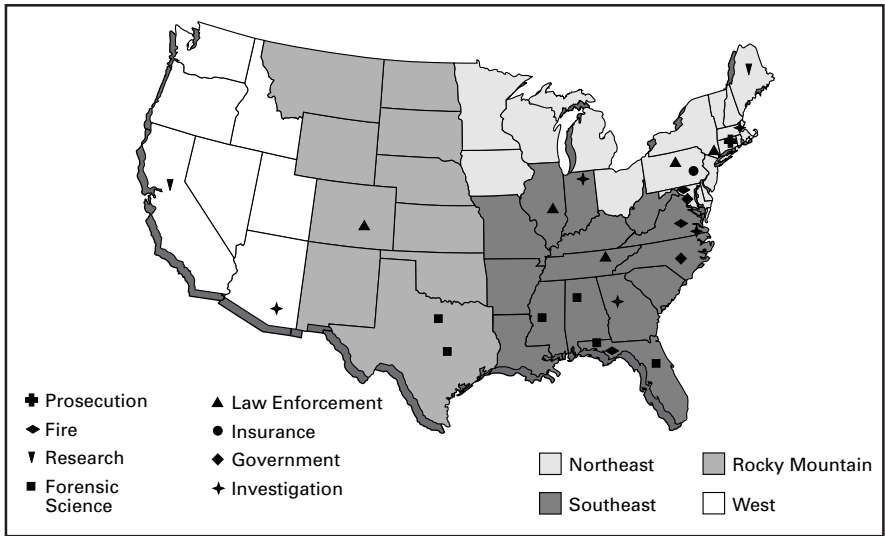
The Panel was charged with developing an outline for a national guide for fire/arson scene evidence collection, using the format in the NIJ publication *Death Investigation: A Guide for the Scene Investigator*² as a template.

The Panel met in April 1998 at the Office of Law Enforcement Standards (OLES) at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland, under the sponsorship of NCFCS and NIJ, to begin the document development process. Because many aspects of fire/arson scene investigation are complex and involve extensive specialist training and knowledge, the Panel was careful to focus on the evidence that should be collected and documented at all fire scenes and to emphasize the need to evaluate the limitations of the investigator's knowledge and request specialized expertise when the complexities of the scene exceeds those limitations. Documents already in place, such as *NFPA 921* and standards E1188 and E860 from the American Society for Testing and Materials, cover the collection and interpretation of complex evidence from fire/arson scenes. The Panel determined that this *Guide* should not attempt to supplant those widely accepted consensus documents but should supplement them for those public safety personnel who may not be trained in the specialized aspects of fire scene investigation but may be in the position of having to respond to a fire/arson scene.

In August 1998, the Technical Working Group on Fire/Arson Scene Investigation (TWGFASI), which was led by Panel members, met at UCF to expand, develop, and revise the document drafted by the Panel. In other meetings, TWGFASI established a long-term commitment to a separate group within it focusing on at-the-scene issues that will bring together laboratory and onsite workers.

In September 1998, the draft of the document was circulated to TWGFASI for review and comment. The comments generated by that review were collated by the OLES Director.

2. *Death Investigation: A Guide for the Scene Investigator*, Research Report, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, December 1997, NCJ 167568.



TWGFASI Representation

Discipline	Northeast	Southeast	Rocky Mountain	West	Canada
Law enforcement	2	2	1		
Prosecution	1				1
Forensic science		6	2		
Research	1			1	
Investigation	1	2		1	
Fire		1			
Insurance	1				
Government	6	1			1

National Reviewer Network

After the initial review by TWGFASI members, editors selected from the Panel by NIJ met in Washington, D.C., in February 1999 to create a draft document for wide review. The comments elicited in the broad review were then incorporated into the final document by the editorial board at a meeting in July 1999, prior to its submission for acceptance by TWGFASI in October 1999.

The 132 organizations and individuals whose comments were solicited during the national review included all levels of law enforcement, regional and national organizations, attorneys, judges, and forensic scientists from across the United States and Canada. A complete list of organizations that received the document for review can be found in appendix E.

Fire and Arson Scene Evidence: A Guide for Public Safety Personnel

Section A Establishing the Role of
First Responders

Section B Evaluating the Scene

Section C Documenting the Scene

Section D Processing Evidence at the Scene

Section E Completing the Scene Investigation

This handbook is intended as a guide to recommended practices for the collection and preservation of evidence at fire/arson scenes. Jurisdictional, logistical, or legal conditions may preclude the use of particular procedures contained herein.

Actions taken pursuant to this *Guide* shall be performed in accordance with department policies and procedures and Federal and State laws.

Not every portion of this document may be applicable to all fires. It is at the discretion of responding personnel (depending on their responsibilities, as well as the purpose and scope of their duties) to apply the procedures recommended in this *Guide* to a particular incident. Some of the procedures described in this *Guide* may not be performed in the sequence described or may be performed simultaneously.

Section A. Establishing the Role of First Responders

Note: The actions of public safety personnel providing emergency services at a fire scene are critical not only to lifesaving and fire suppression efforts but also to any subsequent investigation of the incident.

A

1. Observe the Fire and Scene Conditions

Principle: Public safety personnel responding to a fire should observe conditions and activities at or near the scene so they can give investigators arriving later an accurate and complete description. *First responders*³ can gain information valuable to the fire investigation during their approach to and arrival at the scene.

Procedure: While approaching a fire scene, first responders should observe and mentally note the following conditions and activities and, as soon as conditions permit, initiate permanent documentation of the information (e.g., written notes, voice recordings, videotapes):

- A. The presence, location, and condition of victims and witnesses.
- B. Vehicles leaving the scene, bystanders, or unusual activities near the scene.
- C. Flame and smoke conditions (e.g., the volume of flames and smoke; the color, height, and location of the flames; the direction in which the flames and smoke are moving).

3. The first public safety personnel to arrive on the scene, whether they are law enforcement professionals, firefighters, or emergency medical services (EMS) personnel.

- D. The type of occupancy and use of the structure (e.g., a residential occupancy being used as a business).
- E. Conditions of the structure (e.g., lights turned on; fire through the roof; walls standing; open, closed, or broken windows and doors).
- F. Conditions surrounding the scene (e.g., blocked driveways, debris, damage to other structures).
- G. Weather conditions.
- H. Unusual characteristics of the scene (e.g., the presence of containers, exterior burning or charring on the building, the absence of normal contents, unusual odors, fire trailers⁴).
- I. The fire suppression techniques used, including ventilation, forcible entry, and utility shutoff measures.
- J. The status of fire alarms, security alarms, and sprinklers.

Summary: First responders' initial observations provide investigators with information pertinent to the investigation. As the investigation unfolds, these observations may provide the starting point for evidence collection and preservation efforts.

2. Exercise Scene Safety

Principle: Safety overrides all other concerns: Ensuring the safety of victims, bystanders, and public safety personnel is the first responders' foremost concern at a fire scene. First responders must take steps to identify and remove or mitigate safety hazards that may further threaten victims, bystanders, and public safety personnel. They must exercise due caution to avoid injuries to themselves and others.

4. Physical trails of fuel and the burn patterns caused by those trails.

Procedure: Upon arrival at the scene, first responders should:

- A. Evaluate the scene for safety hazards (e.g., structural collapse of the building; smoke; electrical, chemical, or biological hazards; other health risks).
- B. Establish safety/hazard zones.
- C. Communicate hazards to other personnel arriving at the scene.
- D. Use tools and personal protective equipment appropriate to the task during all operations.

DANGER:

Beware of incendiary or explosive devices!

The scene may contain devices specifically designed to kill or maim public safety responders. Do not touch any suspected incendiary or explosive device. Evacuate the area, and request the services of personnel trained in the removal of such items.

Summary: Safety is the overriding concern during emergency operations and the subsequent investigation. To ensure the safety of civilians and public safety personnel, first responders should take steps to identify, evaluate, and mitigate scene hazards, and they should communicate those hazards to other public safety personnel arriving at the scene. Necessary safety zones should be established to receive victims as they are evacuated. Personal protective equipment and other measures should be used to ensure the safety of all persons at the scene. The scene should continually be reassessed to evaluate safety hazards that may change due to fire conditions or suppression efforts.

3. Preserve the Fire Scene

Principle: Evidence at a fire scene takes many different forms, some of which are transient (i.e., they are not permanent and may disappear quickly, such as impressions in snow or evaporating liquids). First responders must understand how rescue, medical, fire suppression, overhaul,⁵ and salvage⁶ efforts can adversely affect different forms of evidence and take steps to preserve evidence accordingly. First responders should assess the fire scene to identify potential evidence, take preliminary steps to preserve it, and notify appropriate authorities about its existence.

Procedure: To preserve evidence, first responders should:

- A. Observe and mentally note evidence that may be present at the scene, such as:
 - ◆ Fire patterns (including multiple fire locations).
 - ◆ Burn injuries to victims and fire patterns on clothing.
 - ◆ Trailers, ignitable liquids, or other unusual fuel distribution (e.g., piles of newspapers, furniture pushed together).
 - ◆ Incendiary/ignition/explosive devices (e.g., lighters, matches, timing devices).
 - ◆ Shoe prints and tire impressions.
 - ◆ Broken windows and doors.
 - ◆ Distribution of broken glass and debris.
 - ◆ Indications of forced entry (tools and tool marks).

5. The process of opening concealed spaces to find pockets of fire and removing smoldering materials.

6. The process of protecting, moving, or removing items.

- ◆ Containers.
 - ◆ Discarded clothing.
 - ◆ Trace evidence (e.g., hairs, fibers, fingerprints, blood, other body fluids).
 - ◆ Evidence of crimes in addition to the possible arson (e.g., weapons, bodies, drugs, clandestine drug laboratory equipment).
 - ◆ Witnesses, bystanders, and victims.
 - ◆ Any other unusual items or the absence of normal contents or structural components.
- B. Recognize threats to evidence (i.e., its movement, removal, contamination, or destruction) from any of the following sources:
- ◆ Fire suppression activities, such as a straight stream applied at the point of origin or deluge applications that may wash away or dilute potential evidence.
 - ◆ Overhaul activities that destroy fire patterns.
 - ◆ Salvage activities that involve moving or removing potential physical evidence.
 - ◆ Use of a tool in any manner that causes destruction of evidence.
 - ◆ Movement of knobs, switches, and controls on appliances and utilities.
 - ◆ Weather conditions that affect transient evidence (i.e., wind, precipitation, or temperature changes).
 - ◆ Personnel walking through the scene.
 - ◆ Witnesses and victims leaving the scene.
 - ◆ Medical intervention and treatment of victims (e.g., by damaging evidence at the scene or destroying victims' clothing).
 - ◆ Premature removal or movement of bodies.

- ◆ Vehicles at the scene (e.g., that introduce fluid to the scene through vehicle leaks or destroy other evidence, including shoe prints and tire impressions).
- ◆ Contamination from external sources, such as fuel-powered tools or equipment.

C. Protect evidence by:

- ◆ Limiting excessive fire suppression, overhaul, and salvage.
- ◆ Avoiding needless destruction of property.
- ◆ Leaving bodies undisturbed.
- ◆ Flagging items of evidence with cones or markers.
- ◆ Recording observations through written notes or voice recordings.
- ◆ Covering items or areas containing evidence with objects that will not contaminate the evidence (e.g., clean boxes or tarpaulins).
- ◆ Isolating items or areas containing evidence with rope, barrier tape, barricades, or sentries.
- ◆ Retaining and securing clothing items removed from victims and suspects.
- ◆ Obtaining information about victims and witnesses (i.e., their names, addresses, and telephone numbers).
- ◆ Preserving transient evidence (e.g., trace evidence, shoe prints, tire impressions).
- ◆ Removing evidence at risk of imminent destruction by the fire or the structural collapse of the damaged building.
- ◆ Ensuring that later arriving investigators are fully apprised of the evidence discovered.

Summary: First responders should recognize items that may have evidentiary value in a subsequent investigation and take steps to protect them from damage that could result from the fire, fire suppression, or rescue efforts.

4. Establish Security and Control

Principle: Fire suppression and rescue efforts can be performed more efficiently and effectively if only essential authorized personnel are permitted access to the area. Restricting access also ensures the safety of civilians and helps to preserve the scene for subsequent investigation. First responders should immediately establish control of the scene. Then, as soon as conditions permit, first responders should initiate documentation of the scene to aid in the investigation.

Procedure: To establish security and control, first responders should:

- A. Set up a security perimeter (e.g., using barrier tape, fire line, sentry).
- B. Control access into the scene through the security perimeter.
- C. Initiate documentation of the scene. (See “Section C: Documenting the Scene.”)

Summary: The actions of first responders at a fire scene are not only critical to saving lives and suppressing fires; they also set the stage for the investigators arriving to process the scene by establishing a controlled security perimeter and initiating documentation of the scene.

5. Coordinate Activities

Principle: Emergency operations at the fire scene may involve many different agencies and organizations, each having a different focus and performing different activities. These activities must be well coordinated to accomplish emergency operations efficiently and to preserve the integrity of the scene. Upon arrival at the scene, first

responders must establish an incident command system, which allows for a systematic flow and transfer of critical scene information.

Procedure: To coordinate activities at the scene, first responders should:

- A. Establish a command post and implement an incident command system (i.e., a point of contact and line of communication and authority for public safety personnel).
- B. Establish staging areas to ensure that emergency and support vehicles have access into the area.
- C. Request additional personnel resources, such as firefighters, EMS personnel, law enforcement officers, investigators, and representatives of utility companies.
- D. Inform authorities about the status of the incident, hazards, injuries, witnesses, the location of evidence, and other pertinent facts.

Summary: First responders must establish an incident command system to coordinate activities at the scene and communicate information to responsible authorities.

Section B. Evaluating the Scene

Note: This and subsequent sections of this Guide are intended for the individual responsible for the investigation of a fire incident. At the time the scene is determined to involve an arson or other crime, the investigator must address legal requirements for scene access, search, and evidence seizure.

1. Introduce Yourself and Your Role as the Investigator

B

Principle: Introductions at the scene allow the *investigator*⁷ to establish formal contact with other official agency representatives. The investigator should meet with the *incident commander*⁸ and first responders to assess previous events and the current status of the fire scene, introduce himself or herself, identify essential personnel, and determine what the scene safety and integrity issues are.

Procedure: Upon arrival at the scene, and prior to entering the scene, the investigator should:

- A. Identify and contact the current incident commander and present identification.
- B. Conduct a briefing with the incident commander to determine who has jurisdiction and authorization (legal right of entry) and to

7. The individual responsible for the investigation, whether a qualified fire investigator or any member of the authorized agency given investigative responsibility.

8. The supervisor/officer in control of the scene.

identify other personnel at the scene (e.g., law enforcement, firefighting, EMS, hazardous materials, and utility services personnel).

- C. Determine the level of assistance required and whether additional personnel are needed.
- D. Determine initial scene safety prior to entry through observations and discussions with first responders. Consider environmental as well as personnel safety concerns. Assess changes in safety conditions resulting from suppression efforts.

Summary: Onscene introductions establish formal contact with the incident commander and other official agency representatives and promote a collaborative investigative effort. Preliminary scene safety concerns are addressed and continually reevaluated due to the effects of changing fire conditions, suppression efforts, and scene reconstruction.

2. Define the Extent of the Scene

Principle: To provide for the safety and security of personnel and to protect the evidence, the investigator should perform a preliminary scene assessment. The investigator should determine the area in which the site examination will be conducted and establish or adjust the scene perimeter.

Procedure: To determine the boundaries of the scene, the investigator should:

- A. Make a preliminary scene assessment (an overall tour of the fire scene to determine the extent of the damage, proceeding from areas of least damage to areas of greater damage) to identify areas that warrant further examination, being careful not to disturb evidence.

- B. Inspect and protect adjacent areas—even areas with little or no damage—that may include nonfire evidence (e.g., bodies, blood stains, latent prints, tool marks) or additional fire-related evidence (e.g., unsuccessful ignition sources, fuel containers, ignitable liquids).
- C. Mark or reevaluate the perimeter and establish or reassess the procedures for controlling access.

Summary: Procedures focusing on the perimeter and on control of access to the fire scene protect the integrity of the scene.

3. Identify and Interview Witnesses at the Scene

Principle: Persons with information about the scene, activities prior to the fire, the fire, and its suppression are valuable witnesses. The investigator should determine the identities and locations of witnesses and make arrangements to conduct interviews.

Procedure: To develop a witness list, the investigator should:

- A. Contact the incident commander, identify first responders and first-in firefighters, and arrange to document their observations either in writing or through recorded interviews.
- B. Determine who reported the fire. (Secure a tape or transcript of the report if available.)
- C. Identify the owner of the building/scene, any occupants, and the person responsible for property management.
- D. Identify who was last to leave the building/scene and what occurred immediately before they left.
- E. Identify and interview other witnesses (e.g., neighbors, bystanders, people injured during the fire, later arriving public agency personnel) and record their statements.

Summary: Developing a list of persons who have information about the scene, activities prior to the fire, the fire, and its suppression assists investigators with the subsequent investigation.

4. Assess Scene Security at the Time of the Fire

Principle: The investigator should determine whether the building or vehicle was intact and secure and if intrusion alarms or fire detection and suppression systems were operational at the time of the fire. This information helps to establish factors such as ventilation conditions, possible fire development timelines and scenarios, and whether vandalism of the property or systems occurred prior to the fire.

Procedure: To determine the status of security at the time of the fire, the investigator should:

- A. Ask first responders where entry was made, what steps were taken to gain entry, and whether any systems had been activated when they arrived at the scene.
- B. Observe and document the condition of doors, windows, other openings, and fire separations (e.g., fire doors). Attempt to determine whether they were open, closed, or compromised at the time of the fire.
- C. Observe and document the position of timers, switches, valves, and control units for utilities, detection systems, and suppression systems, as well as any alterations to those positions by first responders.
- D. Contact security and suppression system monitoring agencies to obtain information and available documentation about the design and functioning of the systems.

Summary: Determining and documenting system operations and scene security at the time of the fire establishes existing conditions of the scene. Data from detection and suppression systems can provide information about the fire's origin and spread.

5. Identify Resources Required to Process the Scene

Principle: The investigator should recognize limitations of his or her own expertise and knowledge and determine what personnel may be required to process the scene according to *NFPA 921* and other recognized national guidelines. Except in the most obvious cases, the determination of a fire's origin and cause may be a complex and difficult undertaking that requires specialized training and experience as well as knowledge of generally accepted scientific methods⁹ of fire investigation. The investigator must either have appropriate expertise or call upon the assistance of someone with that knowledge. This is especially true in cases involving deaths, major injuries, or large property losses.

Procedure: Based on the preliminary scene assessment and analysis of fire patterns and damage at the scene, the investigator should:

- A. Identify a distinct origin (location where the fire started) and an obvious fire cause (ignition source, first fuel ignited, and

9. As stated in *NFPA 921*, the scientific method consists of defining the problem, collecting data, analyzing the data, developing hypotheses (e.g., what could have caused the fire), testing the hypotheses, and considering alternative hypotheses.

circumstances of the event that brought the two together). If neither the origin nor the cause is immediately obvious, or if there is clear evidence of an incendiary cause, the investigator should conduct a scene examination in accordance with *NFPA 921* and other recognized national guidelines or seek someone with the expertise required.

Note: At the time the scene is determined to involve an arson or other crime, the investigator must address legal requirements for scene access, search, and evidence seizure.

- B. Know when to contact or request the assistance of specialized personnel and to obtain specialized equipment as required to assist with the investigation. For a comprehensive discussion of suggested equipment and tools, see *NFPA 921*. Standard equipment should include the following:
- ◆ Barrier tape.
 - ◆ Clean, unused evidence containers (e.g., cans, glass jars, nylon or polyester bags).
 - ◆ Compass.
 - ◆ Decontamination equipment (e.g., buckets, pans, detergent).
 - ◆ Evidence tags, labels, and tape.
 - ◆ Gloves (disposable gloves and work gloves).
 - ◆ Handtools (e.g., hammers, screwdrivers, knives, crowbars).
 - ◆ Lights (e.g., flashlights, spotlights).
 - ◆ Marker cones or flags.
 - ◆ Personal protective equipment.
 - ◆ Photographic equipment.
 - ◆ Rakes, brooms, spades, etc.
 - ◆ Tape measures.
 - ◆ Writing equipment (e.g., notebooks, pens, pencils, permanent markers).

- C. Recognize and consider the interests of parties that may be affected by the outcome of the investigation and, to the extent possible, avoid jeopardizing those interests by taking steps to protect evidence. These issues include spoliation,¹⁰ subrogation,¹¹ and third-party claims.

Summary: Identifying the required resources ensures that the scene is processed by qualified individuals and that evidence necessary for both criminal and civil litigation will be preserved.

10. Damage or loss of evidence that would compromise a legal case.

11. Recovering damages by a finding of fault; finding that the cause of the fire was the failure of some product or system.

Section C. Documenting the Scene

1. Photograph/Videotape the Scene

Principle: Photographic documentation creates a permanent record of the scene and supplements the written incident report(s), witness statements, or reports on the position of evidence. The investigator should create and preserve an accurate visual record of the scene and the evidence prior to disturbing the scene. Additional photography or videography should occur as the investigation progresses.

Procedure: The scene should be photographed prior to the disturbance or removal of any evidence and throughout the scene investigation. The investigator (or other individual responsible for evidence) should:

- A. Photograph and/or videotape the assembled crowd and the fire in progress.
- B. Remove all nonessential personnel from the background when photographing the scene and evidence.
- C. Photograph the exterior and interior of the fire scene (consider walls, doors, windows, ceilings, floors) in a systematic and consistent manner. (Videotaping may serve as an additional record but not as a replacement for still photography.)
- D. Photograph any points or areas of origin, ignition sources, and first material ignited.
- E. Photograph any physical reconstruction of the scene.
- F. Maintain photo and video logs. Record the date, the name of the photographer, and the subject. (See appendix A for examples.)

- G. Determine whether additional photographic resources are necessary (e.g., aerial photography, infrared photography, stereo photography, photogrammetry).

Summary: Photographic documentation provides a permanent record of the scene.

2. Describe and Document the Scene

Principle: Written documentation of the scene provides a permanent record of the investigator's observations that may be used to refresh recollections, support the investigator's opinions and conclusions, and support photographic documentation.

Procedure: The investigator should:

- A. Prepare narrative, written descriptions and observations, including assessments of possible fire causes. (See appendix A for samples.)
- B. Sketch an accurate representation of the scene and its dimensions, including significant features such as the ceiling height, fuel packages (e.g., combustible contents of the room), doors, windows, and any areas of origin.
- C. Prepare a detailed diagram using the scene sketch(es), preexisting diagrams, drawings, floor plans, or architectural or engineering drawings of the scene. This may be done at a later date.
- D. Determine whether additional documentation resources are necessary.

Summary: Written descriptions of the scene, along with accurate sketches and measurements, are invaluable for focusing the investigation. Written scene documentation recreates the scene for investigative, scientific analysis, and judicial purposes and correlates with photographic evidence.

Section D. Processing Evidence at the Scene

Note: At the time the scene is determined to involve an arson or other crime, the investigator must address legal requirements for scene access, search, and evidence seizure.

1. Identify, Collect, and Preserve Evidence

Principle: Collecting evidence at a fire scene requires attention to documenting and maintaining the integrity of the evidence. The investigator should ensure that evidence collectors identify and properly document, collect, and preserve evidence for laboratory analyses, further investigations, and court proceedings, in accordance with *NFPA 921* and other recognized national guidelines, including American Society for Testing and Materials standards E860, E1188, and E1459. This will ensure that critical evidence is not contaminated or lost prior to analysis and that the chain of custody is maintained.

Procedure: To optimize the recovery and evaluation of physical evidence, evidence collectors should:

- A. Take precautions to prevent contamination. (See “Prevent Contamination.”)
- B. Document the location of evidence using written notes, sketches, photographs, photo and video logs, the evidence recovery log, evidence tags, and container labels. (See appendix A.) When evidence is excavated, additional photographs may be of value.
- C. Take special care to collect evidence in any areas of origin (such as the first fuel ignited and ignition source) in cases where the fire is not accidental.

Note: In cases where the fire appears to be accidental, evidence should not be needlessly disturbed, but the property owner or insurer should be notified to avoid issues of spoliation.

- D. Place evidence in labeled containers for transportation and preservation. Evidence collected for laboratory identification of ignitable liquids must be immediately placed in clean, unused, vaportight containers (e.g., clean, unused paint cans; glass jars; laboratory-approved nylon or polyester bags) and then sealed.
- E. Label each container so that it is uniquely identified. Labeling may include the name of the investigator, date and time of collection, case number, sample number, description, and location of recovery.
- F. Collect and preserve suitable comparison samples but recognize that such samples may be unavailable.
- G. Package evidence in accordance with their laboratories' policies and procedures.
- H. Recognize the presence of other physical evidence, such as blood stains, shoe prints, latent prints, and trace evidence, and use proper preservation and collection methods or seek qualified assistance.

Summary: Proper collection and packaging preserve the value of physical evidence.

2. Prevent Contamination

Principle: Preventing contamination during evidence collection protects the integrity of the fire scene and evidence. The investigator should ensure that access to the fire scene after fire suppression is controlled and that evidence is collected, stored, and transported in such a manner that it will not be contaminated.

Procedure: To prevent contamination, personnel (e.g., evidence collectors) should:

- A. Establish and maintain strict control of access to the scene.
- B. Recognize that fuel-powered tools and equipment present potential contamination sources and should be avoided. When it is necessary to use these tools and equipment, the investigator should document their use.
- C. Wear clean, protective outer garments, including footwear.
- D. Use clean disposable gloves for collecting items of evidence. (To avoid cross-contamination, gloves should be changed between collection of unrelated items of evidence or when visibly soiled.)
- E. Use clean tools for collecting items of evidence from different locations within a scene. (Disposable tools also can be used.)
- F. Place evidence in clean, unused containers and seal immediately.
- G. Store and ship fire debris evidence containers of evidence collected from different scenes in separate packages.
- H. Package liquid samples to prevent leakage and ship them separately from other evidence.
- I. Store and ship fire debris evidence separately from other evidence.
- J. Follow any specific laboratory requests, such as submitting an unused sample container or absorbent medium for detection of any contaminants.

Summary: Attention to scene control and evidence collection and packaging helps to prevent contamination and ensures the integrity of the evidence.

3. Package and Transport Evidence

Principle: Preventing changes in the condition of a sample after it has been collected ensures the integrity of the evidence and requires controlled packaging and transportation. The investigator should ensure that packaging, transportation, and storage procedures are followed to prevent any destructive changes in the condition of samples.

Procedure: To minimize changes in the condition of samples, the personnel responsible for packaging and transport should:

- A. Take precautions to prevent contamination. (See “Prevent Contamination.”)
- B. Package fragile items carefully.
- C. Freeze or immediately transport items containing soil to the laboratory.
- D. Transport all volatile samples to the laboratory in a timely manner.
- E. Comply with shipping regulations.

Summary: Adherence to approved packaging and transportation procedures safeguards the condition of the evidence and ensures its continued integrity.

4. Establish and Maintain the Chain of Custody

Principle: Establishing and maintaining a chain of custody verifies the integrity of the evidence. The investigator should ensure that the chain of custody is maintained.

Procedure: Personnel responsible for the chain of custody should:

- A. Maintain written records documenting the sample number, description of the evidence, date and location where it was found, collector’s name, and miscellaneous comments.
- B. Document all transfers of custody, including the name of the recipient and the date and manner of transfer.
- C. Document the final disposition of the evidence.

Summary: Maintaining the chain of custody for evidence, from collection through final disposition, ensures its integrity.

Section E. Completing the Scene Investigation

1. Release the Scene

Principle: The investigator should ensure that the scene is not released until reasonable efforts have been made to identify, collect, and remove all evidence from the scene for further examination and that all physical characteristics of the scene have been documented. In addition, prior to releasing the scene, associated legal, health, and safety issues must be articulated to the party receiving the scene and reported to public safety agencies if necessary. Doing so minimizes the risk of a further incident or injury and the potential liability of the authority releasing the scene.

Procedure: The investigator should ensure that the following tasks are completed before releasing the scene:

A. Perform a final critical review:

- ◆ Ensure that all evidence is inventoried and in custody.
- ◆ Discuss preliminary scene findings with team members.
- ◆ Discuss postscene issues, including forensic testing, insurance inquiries, interview results, and criminal histories.
- ◆ Assign postscene responsibilities to law enforcement personnel and other investigators.¹²
- ◆ Address legal considerations.

12. Remember that this *Guide* focuses on the documentation and collection of physical evidence at fire/arson scenes. Other issues of investigation, such as insurance inquiries, background information, fire deaths, the interpretation of physical evidence, and case analysis and profiling, are not addressed in this document.

- B. Verify that all scene documentation has been completed. (This can be accomplished using an incident documentation checklist or closure form; see appendix A.)
- C. Address structural, environmental, health, and safety issues.
- D. Remove all investigative equipment and materials.
 - ◆ Recover and inventory equipment.
 - ◆ Decontaminate equipment and personnel.
- E. Document the following information:
 - ◆ Time and date of release.
 - ◆ Receiving party.
 - ◆ Authority releasing the scene.
 - ◆ Condition of the scene at the time of release (e.g., structural, environmental, health, and safety issues). Consider photographing and/or videotaping the final condition of the scene.
 - ◆ Cautions given to the receiving party upon release (e.g., safety concerns, conditions, evidence, legal issues).

Summary: Responsibility for the scene should be transferred to an authority having jurisdiction or to the party with the legal right to the scene, after the scene examination, the condition of the scene, and any cautions supplied have been documented.

2. Submit Reports to the Appropriate Databases

Principle: Detailed fire information is collected, integrated, and disseminated through national and State databases. These data help authorities identify fire trends and

develop innovative procedures and equipment. The responsible agencies must file incident reports with the appropriate databases.

Procedure: The investigator should collect sufficient information to facilitate reporting to the following databases as appropriate:

- A. Arson and Explosives National Repository (Bureau of Alcohol, Tobacco and Firearms).
- B. Bomb Data Center (Federal Bureau of Investigation).
- C. National Fire Incident Reporting System (U.S. Fire Administration).
- D. National Incident-Based Reporting System (Federal Bureau of Investigation).
- E. State and local fire incident reporting systems.

Summary: The responsible agencies should contribute to databases that compile information for purposes of identifying fire trends and developing suspect profiles.

Appendixes

Appendix A Documentation Examples

Appendix B Additional Reading

Appendix C National Resources

Appendix D Points of Contact

Appendix E List of Organizations

Appendix A. Documentation Examples

The forms in this appendix are provided to assist in the organization of investigation information and data. They are intended as examples and may not include all information needed or may refer to information that is not applicable. The forms are taken from *NFPA 906: Guide for Fire Incident Field Notes*¹³ and are printed here by permission of NFPA. For information on the development of these forms and instructions on their use, see *NFPA 906*.

13. *NFPA 906: Guide for Fire Incident Field Notes*, Quincy, Massachusetts: National Fire Protection Association.

ANY FIRE
FIELD NOTES 906-1

AGENCY

FILE NUMBER

INCIDENT

ADDRESS/LOCATION		DAY	DATE	TIME	FIRE DEPT. INCIDENT NO.	
WEATHER AT TIME OF FIRE	GENERAL CONDITIONS			TEMP	WIND DIR.	WIND SPEED
PROPERTY DESCRIPTION	STRUCTURE (906-2) <input type="checkbox"/>	VEHICLE (906-3) <input type="checkbox"/>	WILDLAND (906-4) <input type="checkbox"/>	OTHER <input type="checkbox"/>		

OWNER/OCCUPANT

OWNER'S NAME	PHONE NO.
OWNER'S ADDRESS	
OCCUPANT'S NAME	PHONE NO.
OCCUPANT'S ADDRESS	
DOING BUSINESS AS	PHONE NO.

NOTIFICATION FOR INVESTIGATION

DAY	DATE	TIME	FROM WHOM			
RECEIVED BY			ASSIGNED TO			
ARRIVED AT SCENE	DAY	DATE	TIME	SCENE SECURED	<input type="checkbox"/> NO (COMMENT ON CONDITION) <input type="checkbox"/> YES (BY WHOM)	
AUTHORITY TO ENTER	EMERGENCY	CONSENT <input type="checkbox"/> VERBAL <input type="checkbox"/> WRITTEN		WARRANT <input type="checkbox"/> ADMIN. <input type="checkbox"/> CRIM.	OTHER (D660/B6)	
DEPARTED SCENE	DAY	DATE	TIME	COMMENTS		

OTHER AGENCIES INVOLVED

FIRE DEPT.	INCIDENT NO.	CONTACT PERSON	PHONE NO.
POLICE DEPT.	FILE NO.	CONTACT PERSON	PHONE NO.
OTHER	CASE NO.	CONTACT PERSON	PHONE NO.

ESTIMATED TOTAL LOSS

\$	ESTIMATED BY
----	--------------

REMARKS

STRUCTURE FIRE
FIELD NOTES 908-2b

AGENCY

FILE NUMBER

EXTERIOR OBSERVATIONS

INTERIOR OBSERVATIONS

HEATING SYSTEM

TYPE	LOCATION
COMMENTS	

ELECTRICAL SERVICE

<input type="checkbox"/> FUSES <input type="checkbox"/> BREAKERS	ENTRY LOCATION	SERVICE PANEL LOCATION
COMMENTS		

OTHER HEATING EQUIPMENT

TYPE(S)	LOCATION
COMMENTS	

STRUCTURE CONTENTS

COMMENTS

AREA OF ORIGIN

COMMENTS

STRUCTURE FIRE

FIELD NOTES 906-2a

AGENCY

FILE NUMBER

IGNITION SEQUENCE

HEAT SOURCE

MATERIAL IGNITED

IGNITION FACTOR

IF EQUIPMENT INVOLVED

MAKE

MODEL

SERIAL NO

COMMENTS

FIRE SPREAD

MATERIALS

AVENUES

COMMENTS

SMOKE SPREAD

MATERIALS

AVENUES

COMMENTS

REMARKS

MOTOR VEHICLE
FIELD NOTES 906-3

AGENCY

FILE NUMBER

VEHICLE DESCRIPTION

COLOR(S)	YEAR	MAKE	MODEL	LICENSE — NO., STATE, EXPIRES	VIN NO.
----------	------	------	-------	-------------------------------	---------

OWNER/OPERATOR

OWNER'S NAME	OWNER'S ADDRESS	OWNER'S PHONE NO.
OPERATOR'S NAME/LICENSE NO.	OPERATOR'S ADDRESS	OPERATOR'S PHONE NO.

EXTERIOR

PRIOR DAMAGE	FIRE DAMAGE
TIRES/WHEELS (Missing, Match, Condition)	
PARTS MISSING	

FUEL SYSTEM

PRIOR DAMAGE	FIRE DAMAGE		
TYPE FUEL	CONDITION OF TANK	FILLER CAP CONDITION	FUEL LINE CONDITION

ENGINE COMPARTMENT

PRIOR DAMAGE	FIRE DAMAGE
FLUID LEVELS OIL _____ TRANSMISSION _____ RADIATOR _____ OTHER _____	
PARTS MISSING	

INTERIOR

PRIOR DAMAGE	FIRE DAMAGE
IGNITION SYSTEM	KEY IN IGNITION <input type="checkbox"/> YES <input type="checkbox"/> NO
PERSONAL CONTENTS MISSING	
ACCESSORIES MISSING	
ODOMETER READING	SERVICE STICKER INFORMATION

VEHICLE SECURITY

ALARM	DOOR AND TRUNK LOCKS	WINDOW POSITIONS
-------	----------------------	------------------

ORIGIN/IGNITION SEQUENCE

AREA
HEAT SOURCE
MATERIAL IGNITED
IGNITION FACTOR

WILDLAND FIRE
FIELD NOTES 906-4

AGENCY

FILE NUMBER

PROPERTY DESCRIPTION

FIRE DAMAGE

 LESS THAN ACRE _____ NO ACRES

OTHER PROPERTIES INVOLVED

SECURITY

 OPEN FENCED LOCKED GATES

COMMENTS

FIRE TRAVEL FACTORS

TYPE FIRE

 GROUND CROWN WIND TERRAIN

COMMENTS

AREA OF ORIGIN**PEOPLE IN AREA**

ALL TYPE OF FIRE

 YES NO UNDETERMINED

COMMENTS

IGNITION SEQUENCE

HEAT OF IGNITION

MATERIAL IGNITED

IGNITION FACTOR

IF EQUIPMENT INVOLVED

MAKE

MODEL

SERIAL NO.

COMMENTS

CASUALTY
FIELD NOTES 906-5

AGENCY

FILE NUMBER

DESCRIPTION

NAME			ADDRESS				PHONE NO.		
RACE	SEX	AGE	DATE OF BIRTH	HEIGHT	WEIGHT	HAIR	EYES	OTHER	
DESCRIBE CLOTHING									

TYPE OF INJURY

<input type="checkbox"/> MINOR	<input type="checkbox"/> MODERATE	<input type="checkbox"/> SEVERE	<input type="checkbox"/> FATAL	DESCRIBE INJURY
--------------------------------	-----------------------------------	---------------------------------	--------------------------------	-----------------

CIRCUMSTANCES

WHO FOUND VICTIM? WHERE?
VICTIM'S ACTIVITY JUST PRIOR TO AND AT TIME OF IGNITION
VICTIM'S ACTIVITY AFTER TIME OF IGNITION

CASUALTY TREATMENT

<input type="checkbox"/> TREATED AT SCENE BY?		
SENT TO	VIA	TREATED BY
REMARKS		

FATALITY

BODY POSITION				
BODY REMOVED TO		BODY REMOVED BY		AUTHORITY TO MOVE BODY GIVEN BY
MEDICAL EXAMINER/CORONER			ADDRESS	PHONE NO.
CAUSE OF DEATH				
AUTOPSY BY			ADDRESS	PHONE NO.
DATE OF AUTOPSY	CASE NO.	BLOOD TEST <input type="checkbox"/> YES <input type="checkbox"/> NO	X-RAYS <input type="checkbox"/> YES <input type="checkbox"/> NO	REPORTS IN POSSESSION <input type="checkbox"/> YES <input type="checkbox"/> NO

NEXT OF KIN

NAME	RELATIONSHIP	ADDRESS AND PHONE
NOTIFIED BY (How, Date, and Time)		

REMARKS

EVIDENCE
FIELD NOTES 906-7

AGENCY

FILE NUMBER

DESCRIPTION**WHERE FOUND WHEN****REMOVED TO BY**

1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

REMARKS

PHOTOGRAPH
FIELD NOTES 908-8

ROLL NO.

AGENCY

FILE NUMBER

*ONLY ONE ROLL OF FILM PER FORM.

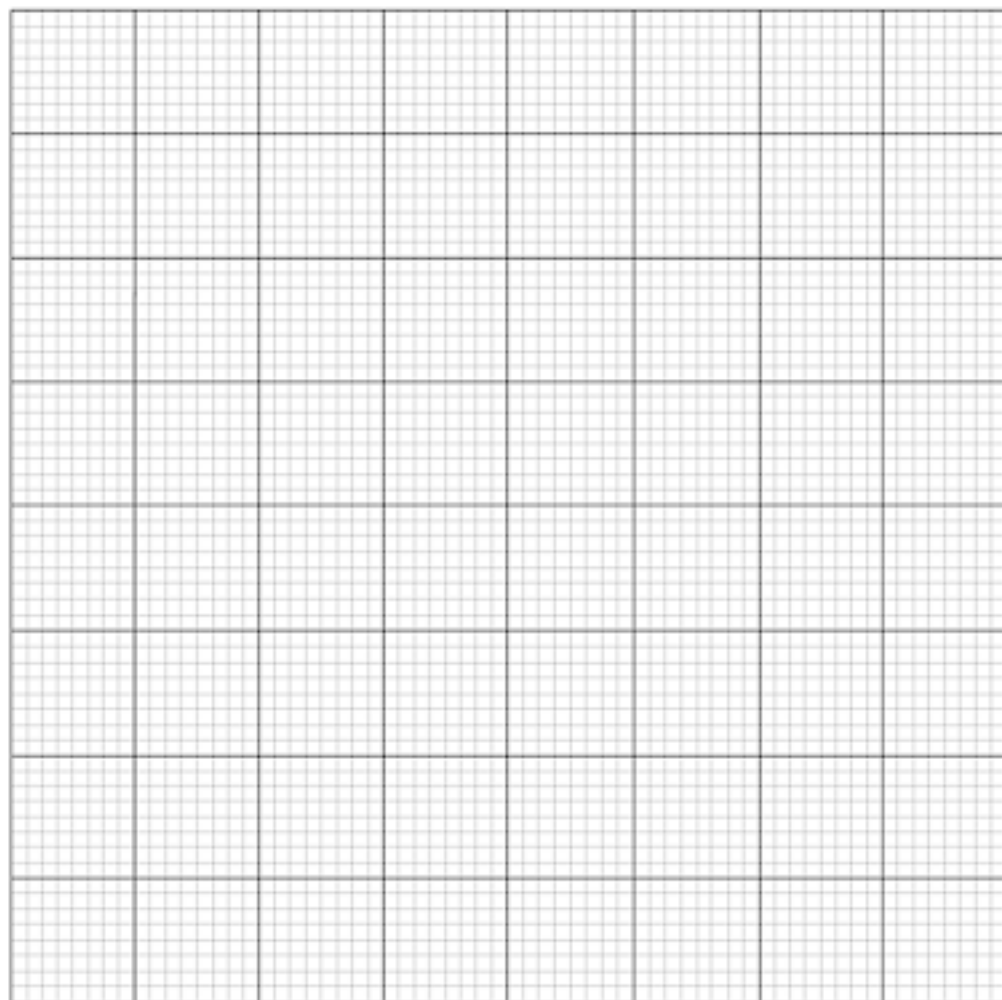
NEG. NO.	DESCRIPTION	NEG. NO.	DESCRIPTION
1		21	
2		22	
3		23	
4		24	
5		25	
6		26	
7		27	
8		28	
9		29	
10		30	
11		31	
12		32	
13		33	
14		34	
15		35	
16		36	
17		37	
18		38	
19		39	
20		40	

REMARKS

SKETCH
FIELD NOTES 906-9

AGENCY

FILE NUMBER



Scale:

Sketcher:

Date:

NOTE: Be sure to show reference north on sketch.

INSURANCE INFORMATION
FIELD NOTES 906-10

AGENCY

FILE NUMBER

COMPANY

NAME 1	ADDRESS	PHONE NO.
POLICY NO.	EFFECTIVE DATE	EXPIRATION DATE
NAME 2	ADDRESS	PHONE NO.
POLICY NO.	EFFECTIVE DATE	EXPIRATION DATE

COVERAGE

STRUCTURE/VEHICLE	CONTENTS, PERSONAL PROPERTY	BUSINESS INTERRUPTION, LOSS EARNINGS, LIVING EXPENSES
1. <input type="checkbox"/> NEW <input type="checkbox"/> RENEWAL	NAME OF INSURED	ADDRESS OF INSURED
2. <input type="checkbox"/> NEW <input type="checkbox"/> RENEWAL	NAME OF INSURED	ADDRESS OF INSURED
PREVIOUS INSURANCE CARRIER NAME	ADDRESS	PHONE NO.
1 \$ _____ STRUCTURE/VEHICLE \$ _____ CONTENTS \$ _____ OTHER ? _____		
PREVIOUS LOSSES, CANCELLATIONS		

INSURANCE AGENT

NAME 1	ADDRESS	PHONE NO.
NAME 2	ADDRESS	PHONE NO.

ADJUSTER/INVESTIGATOR

NAME OF COMPANY ADJUSTER/INVESTIGATOR 1	ADDRESS	PHONE NO.
NAME OF COMPANY ADJUSTER/INVESTIGATOR 2	ADDRESS	PHONE NO.
NAME OF PUBLIC ADJUSTER	ADDRESS	PHONE NO.

TOTAL PAID LOSS

STRUCTURE 1 \$	CONTENTS/PERSONAL PROPERTY 1 \$	OTHER (Explain) 1 \$
STRUCTURE 2 \$	CONTENTS/PERSONAL PROPERTY 2 \$	OTHER (Explain) 2 \$

REMARKS

RECORDS/DOCUMENTS
FIELD NOTES 908-11

AGENCY

FILE NUMBER

Use this form as a checklist to indicate which records have been considered in the investigation. The Remarks sections should be used to note availability, contacts, and so forth.

INCIDENT RELATED

FIRE DEPT. NAME	INCIDENT NO.	REMARKS
POLICE DEPT. NAME	FILE NO.	REMARKS
INSURANCE CO. NAME	CASE NO.	REMARKS
GAS CO. NAME	REMARKS	
ELECTRIC CO. NAME	REMARKS	
MEDIA COVERAGE	REMARKS	
MEDIA COVERAGE	REMARKS	
MEDIA COVERAGE	REMARKS	
OTHER — INCIDENT RELATED	REMARKS	
OTHER — INCIDENT RELATED	REMARKS	

PROPERTY RECORDS

MORTGAGE HOLDER	REMARKS
LIEN HOLDER	REMARKS
TAX RECORDS	REMARKS
CONTRACTS/LEASES	REMARKS
TITLES/REGISTRATIONS	REMARKS
ZONING/CODES	REMARKS
DEEDS	REMARKS
OTHER	REMARKS
OTHER	REMARKS

BUSINESS/PERSONAL

ACCOUNTING	REMARKS
INVENTORY	REMARKS
BANKS/CREDIT UNIONS, ETC.	REMARKS
BUSINESS AND PERSONAL TAX	REMARKS
CRIMINAL HISTORY	REMARKS
CIVIL LITIGATIONS	REMARKS

Appendix B. Additional Reading

The documents listed below are for informational purposes and should not necessarily be considered authoritative in their entirety.

American Society for Testing and Materials. *E860–97 Standard Practice for Examining and Testing Items That Are or May Become Involved in Products Liability Litigation*. West Conshohocken, Pennsylvania: American Society for Testing and Materials, 1999.

American Society for Testing and Materials. *E1188–95 Standard Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator*. West Conshohocken, Pennsylvania: American Society for Testing and Materials, 1999.

American Society for Testing and Materials. *E1459–92 Standard Guide for Physical Evidence Labeling and Related Documentation*. West Conshohocken, Pennsylvania: American Society for Testing and Materials, 1998.

Bureau of Alcohol, Tobacco and Firearms. *ATF Arson Investigative Guide*. Washington, D.C.: U.S. Department of the Treasury, Bureau of Alcohol, Tobacco and Firearms, 1997.

Cole, Lee S. *The Investigation of Motor Vehicle Fires*. 3d ed. Novato, California: Lee Books, 1992.

DeHaan, John D. *Kirk's Fire Investigation*. 4th ed. Upper Saddle River, New Jersey: Brady Publishing/Prentice Hall, 1997.

DiNunno, Philip J., ed. *The SFPE Handbook of Fire Protection Engineering*. Quincy, Massachusetts: National Fire Protection Association and Society of Fire Protection Engineering, 1999.

“Glossary of Terms.” *Fire and Arson Investigator* 40 (2): 25–34.

International Fire Service Training Association. *Introduction to Fire Origin and Cause*. 2d ed. Stillwater, Oklahoma: Fire Protection Publications, 1997.

Munday, J.W. *Safety at Scenes of Fire and Related Incidents*. London: Fire Protection Association, 1995.

National Fire Protection Association. *Fire Protection Handbook*. 18th ed. Quincy, Massachusetts: National Fire Protection Association, 1997.

National Fire Protection Association. *NFPA 472: Standard for Professional Competence of Responders to Hazardous Materials Incidents*. Quincy, Massachusetts, 1999.

National Fire Protection Association. *NFPA 906: Guide for Fire Incident Field Notes*. Quincy, Massachusetts: National Fire Protection Association.

National Fire Protection Association. *NFPA 921: Guide for Fire and Explosion Investigations*. Quincy, Massachusetts: National Fire Protection Association.

A Pocket Guide to Accelerant Evidence Collection. 2d ed. Saugus, Massachusetts: Massachusetts Chapter, International Association of Arson Investigators, 2000.

Quintiere, James G. *Principles of Fire Behavior*. Albany, New York: Delmar Publishers, 1997.

Appendix C. National Resources

interFIRE

877-INTERFIRE

URL: <http://www.interfire.com>

International Association of Arson Investigators

314-739-4224

URL: <http://www.fire-investigators.org>

International Fire Service Training Association

405-744-5723

URL: <http://www.ifsta.org>

National Association of Fire Investigators

312-427-6320

URL: <http://www.nafi.org>

National Center for Forensic Science

407-823-6469

URL: <http://ncfs.ucf.edu>

National Fire Protection Association

617-770-3000

URL: <http://www.nfpa.org>

Appendix D. Points of Contact

Bureau of Alcohol, Tobacco and Firearms

Headquarters Enforcement Operations Center

888-ATF-FIRE

URL: <http://www.atf.treas.gov>

Arson and Explosives National Repository

800-461-8841

202-927-4590

Arson and Explosives Programs Division

202-927-7930

National Laboratory

301-762-9800

Chemical Transportation Emergency Center (CHEMTREC®)

800-262-8200

URL: <http://www.chemtrec.org>

Federal Bureau of Investigation

Chemistry Division

202-324-4318

URL: <http://www.fbi.gov>

Federal Emergency Management Agency

U.S. Fire Administration

301-447-1000

URL: <http://www.usfa.fema.gov>

National Institute of Standards and Technology

Building and Fire Research Laboratory

301-975-6850

URL: <http://www.bfrl.nist.gov>

U.S. Consumer Product Safety Commission

800-638-2772

URL: <http://www.cpsc.gov>

U.S. Environmental Protection Agency

National Response Center

800-424-8802

URL: <http://www.epa.gov>

Appendix E. List of Organizations

The following is a list of public and professional organizations to which a draft copy of this document was mailed.

Accomack County (Virginia) Sheriff's Office
Alaska Criminal Laboratory
Alaska Public Defender Agency
Allegheny County (Pennsylvania) Fire Marshal
American Academy of Forensic Sciences
American Bar Association
American Correctional Association
American Jail Association
American Prosecutors Research Institute
American Reinsurance Company
American Society of Crime Laboratory Directors
American Society of Law Enforcement Trainers
Anchorage (Alaska) Police Department
Arapahoe County (Colorado) Sheriff's Office
Armed Forces Institute of Pathology
Association of Federal Defense Attorneys
Bridgeport (Michigan) Forensic Laboratory
Bristol (Virginia) Police Department
Broward County (Florida) Sheriff's Office
Brownsville (Texas) Police Department
Bureau of Alcohol, Tobacco and Firearms
Cameron County (Texas) Sheriff's Office
Campaign for an Effective Crime Policy
Chicago (Illinois) Fire Department
Children's Defense Fund
Cincinnati (Ohio) Fire Division
City of Donna (Texas) Police Department
City of Inver Grove Heights (Minnesota)
Clark County (Nevada) Fire Department
Cleveland State Community College Basic Police Academy
Commission on Accreditation for Law Enforcement Agencies
Conference of State Court Administrators
Connecticut State Police Forensic Science Laboratory
Conyers (Georgia) Police Department
Council of State Governments
Covington (Tennessee) Fire Department
Crime Scene Academy
Criminal Justice Institute, Inc.
Delaware State Fire Marshal's Office
Drug Enforcement Administration
Edinburg (Texas) Police Department
Fairbanks (Alaska) Police Department
Federal Bureau of Investigation
Federal Law Enforcement Training Center
Florida Department of Law Enforcement
Florida International University
Florida Division of State Fire Marshal
Georgia Bureau of Investigation
Harlingen (Texas) Police Department
Hidalgo County (Texas) Sheriff's Office
Illinois State Police
Indiana State Police Laboratory Division
The Institute for Genomic Research
Institute of Police Technology and Management, University of North Florida
International Association for Identification
International Association of Bomb Technicians and Investigators
International Association of Chiefs of Police
International City/County Management Association
International Homicide Investigators Association
Iowa Division of Criminal Investigation
Jefferson Parish (Louisiana) Fire Department
Juneau (Alaska) Police Department

Laredo (Texas) Police Department
 Law Enforcement Training Institute,
 University of Missouri—Columbia
 Los Angeles (California) Fire Department
 Maine State Police Crime Laboratory
 Massachusetts State Police
 McAllen (Texas) Police Department
 Metropolitan Government of Nashville and
 Davidson County Criminal Court
 Division III
 Metropolitan Government of Nashville and
 Davidson County Office of the District
 Attorney General
 Metropolitan Nashville (Tennessee) Police
 Academy
 Metropolitan Nashville (Tennessee) Police
 Department
 Michigan Department of State Police
 Mission (Texas) Police Department
 National Association of Attorneys General
 National Association of Black Women Attorneys
 National Association of Counties
 National Association of Criminal Defense
 Lawyers
 National Association of Drug Court Professionals
 National Association of Police Organizations, Inc.
 National Association of State Alcohol and
 Drug Abuse Directors
 National Association of Women Judges
 National Center for State Courts
 National Center for Victims of Crime
 National Clearinghouse for Child Abuse
 and Neglect
 National Conference of State Legislatures
 National Council on Crime and Delinquency
 National Crime Prevention Council
 National Criminal Justice Association
 National District Attorneys Association
 National Governors' Association
 National Law Enforcement and
 Corrections Technology Centers
 National Law Enforcement Council
 National League of Cities
 National Legal Aid and Defender Association
 National Organization for Victim Assistance
 National Sheriffs' Association
 New Hampshire State Police Forensic Laboratory
 New Jersey State Police
 New York State Office of Fire Prevention
 and Control
 Office of Law Enforcement Standards, National
 Institute of Standards and Technology
 Orange County (California) Sheriff's Department
 Orange County (New York) Community College
 Peace Officer Standards and Training
 Pennsylvania State Police
 Pharr (Texas) Police Department
 Pinellas County (Florida) Forensic Laboratory
 Police Association
 Police Executive Research Forum
 Police Foundation
 Rhode Island State Crime Laboratory
 San Diego (California) Police Department
 The Sentencing Project
 Sitka (Alaska) Police Department
 South Carolina Law Enforcement Division
 St. Louis (Missouri) Metropolitan Police
 Department
 State of Florida Crime Laboratory
 Suffolk County (New York) Crime Laboratory
 Tennessee Bureau of Investigation
 Tennessee Law Enforcement Training Academy
 Texas Department of Public Safety, Texas
 Rangers
 Town of Goshen (New York) Police Department
 Tucson (Arizona) Police Department
 University of Texas Pan American Police
 Department
 U.S. Border Patrol
 U.S. Conference of Mayors
 U.S. Postal Inspection Service
 U.S. Sentencing Commission
 Webb County (Texas) Sheriff's
 Department
 Weslaco (Texas) Police Department
 Willacy County (Texas) Sheriff's Office
 Wisconsin State Crime Laboratory

About the National Institute of Justice

The National Institute of Justice (NIJ), a component of the Office of Justice Programs, is the research agency of the U.S. Department of Justice. Created by the Omnibus Crime Control and Safe Streets Act of 1968, as amended, NIJ is authorized to support research, evaluation, and demonstration programs, development of technology, and both national and international information dissemination. Specific mandates of the Act direct NIJ to:

- Sponsor special projects and research and development programs that will improve and strengthen the criminal justice system and reduce or prevent crime.
- Conduct national demonstration projects that employ innovative or promising approaches for improving criminal justice.
- Develop new technologies to fight crime and improve criminal justice.
- Evaluate the effectiveness of criminal justice programs and identify programs that promise to be successful if continued or repeated.
- Recommend actions that can be taken by Federal, State, and local governments as well as by private organizations to improve criminal justice.
- Carry out research on criminal behavior.
- Develop new methods of crime prevention and reduction of crime and delinquency.

In recent years, NIJ has greatly expanded its initiatives, the result of the Violent Crime Control and Law Enforcement Act of 1994 (the Crime Act), partnerships with other Federal agencies and private foundations, advances in technology, and a new international focus. Examples of these new initiatives include:

- Exploring key issues in community policing, violence against women, violence within the family, sentencing reforms, and specialized courts such as drug courts.
- Developing dual-use technologies to support national defense and local law enforcement needs.
- Establishing four regional National Law Enforcement and Corrections Technology Centers and a Border Research and Technology Center.
- Strengthening NIJ's links with the international community through participation in the United Nations network of criminological institutes, the U.N. Criminal Justice Information Network, and the NIJ International Center.
- Improving the online capability of NIJ's criminal justice information clearinghouse.
- Establishing the ADAM (Arrestee Drug Abuse Monitoring) program—formerly the Drug Use Forecasting (DUF) program—to increase the number of drug-testing sites and study drug-related crime.

The Institute Director establishes the Institute's objectives, guided by the priorities of the Office of Justice Programs, the Department of Justice, and the needs of the criminal justice field. The Institute actively solicits the views of criminal justice professionals and researchers in the continuing search for answers that inform public policymaking in crime and justice.

To find out more about the National Institute of Justice,
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Rockville, MD 20849-6000
800-851-3420
e-mail: askncjrs@ncjrs.org

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National Institute of Justice

Washington, DC 20531

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**Establishing the Role of
First Responders**

Evaluating the Scene

Documenting the Scene

Processing Evidence at the Scene

Completing the Scene Investigation