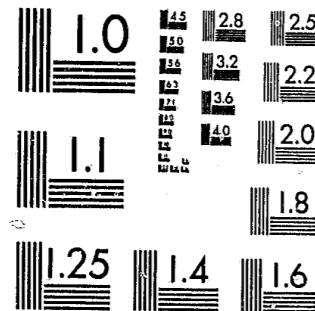


National Criminal Justice Reference Service



This microfiche was produced from documents received for inclusion in the NCJRS data base. Since NCJRS cannot exercise control over the physical condition of the documents submitted, the individual frame quality will vary. The resolution chart on this frame may be used to evaluate the document quality.



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Microfilming procedures used to create this fiche comply with the standards set forth in 41CFR 101-11.504.

Points of view or opinions stated in this document are those of the author(s) and do not represent the official position or policies of the U. S. Department of Justice.

National Institute of Justice
United States Department of Justice
Washington, D. C. 20531

7-7-83

MARYLAND STATE'S ATTORNEYS'
ARSON INVESTIGATION AND PROSECUTION
MANUAL

OFFICE OF THE
MARYLAND STATE'S ATTORNEYS' COORDINATOR
BALTIMORE
1981

U.S. Department of Justice
National Institute of Justice

This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated in this document are those of the authors and do not necessarily represent the official position or policies of the National Institute of Justice.

Permission to reproduce this copyrighted material has been granted by

Public Domain
U.S. DOJ, LEAA

to the National Criminal Justice Reference Service (NCJRS).

Further reproduction outside of the NCJRS system requires permission of the copyright owner.

NCJRS

JUN 18 1982

ACQUISITIONS

ACKNOWLEDGEMENTS

The publication of this State's Attorneys' Arson Manual was made possible by a grant from the federal Law Enforcement Assistance Administration, awarded through the Maryland Governor's Commission on Law Enforcement and the Administration of Justice, to address the problem of arson in Maryland.)

The text was researched and written by Bruce C. Frame, Esquire. David H. Hugel, Maryland State's Attorneys' Coordinator, was responsible for editing and publishing the manual.

TABLE OF CONTENTS

Introduction

Chapter 1 Arson Defined and its Motives Explained

Chapter 2 Fire and Arson - A Glossary

Chapter 3 Arson Investigation Procedures and the Use of
Scientific Evidence

Chapter 4 Arson Fraud and Organized Crime-Using RICO As A Weapon

Chapter 5 Search and Seizure Problems in Arson Cases

Chapter 6 The Prosecution of Arson Cases in Maryland

Chapter 7 Special Trial Tactics for Arson Cases

Appendix - Profile of the Fire and Investigation Checklist

Bibliography

INTRODUCTION

INTRODUCTION

This manual was designed to provide a convenient reference for Maryland State's Attorneys to aid them in the investigation and prosecution of arson cases. It should also be helpful to fire investigation personnel and other law enforcement officials responsible for conducting arson investigations. The manual contains the basic scientific and technical information necessary to achieving an understanding of incendiary fires, a review of Maryland statutes and case law on arson, suggested trial tactics for prosecuting arson cases as well as other relevant information on this rapidly spreading crime. A comprehensive bibliography of publications dealing with arson is also included for those seeking more indepth information on the subject.

Before proceeding further, it is essential for the reader to appreciate the nature of the crime itself. Arson is first a crime of violence. Thousands of deaths and injuries are attributable each year to arson-caused fires. Arson is also a crime against property. As we shall see later, while its full scope has not yet been determined, arson may well be the single most costly property crime. Arson is an elusive crime, since the fire often consumes or damages much of the evidence which points to its very existence. The fact of the crime often emerges only after a comprehensive and sophisticated investigation of the fire scene itself

has been made and property and business records have been reviewed.

Most important, however, arson is pervasive. The attention in recent years to arson control, reduction and prevention is starting to bring to light the fact that what was once thought of as a problem confined to big cities, has spread to communities of all size from the smallest to the largest. Arson can be found in farm towns and suburban communities as well as the crowded residential areas of big cities, in factories, schools, offices and homes. Arson may strike anywhere at any time.

Despite its long history "arson is probably the most neglected crime in the United States, if not the world," according to the National Fire Academy.

According to some estimates, arson has increased 400 percent in the last decade, causing an estimated 1,000 deaths and 10,000 personal injuries annually. Property loss estimates range from \$3 to \$10 billion a year, including lost jobs and taxes.¹

It has been in the past impossible to determine the exact number of arson-caused fires, and the total dollar cost of such fires because limited fire investigation resources have resulted in a lack of complete and reliable data. In fact, until 1979 arson was reported as a "Part II" crime in the FBI's Uniform Crime Reports, along with drunkenness and disorderly conduct. Uniform Statistics for 1980 and

subsequent years will, however, include arson along with other felonies, helping to identify the magnitude of the arson problem and drawing public attention to arson-related losses.²

Even with partial statistics, however, the scope of arson related crimes is enormous. Estimates published by the National Fire Protection Association indicate that nine percent of all building fires and 17 percent of all building fire losses involved in one sample period were clearly due to arson.³ If only one-half of fires classified as cause "unknown" are included, nearly 200,000 fires annually - and 36 percent of all dollar losses from building fires are arson-caused. Some estimates run higher.⁴

No type of building is immune from arson caused fires. A study of 1974 incendiary building fires showed that while only 7 percent of one and two family dwelling fires were arson related, over 75 percent of school and college fires were incendiary or suspicious. This same study indicated that over 30,000 apartment building fires were caused by arsonists,⁵ and that over 43,000 motor vehicle fires were incendiary or suspicious in origin.

In order to put arson losses in some perspective, the table below compares them with losses due to other serious crimes. Loss data for crimes other than arson were obtained from the FBI Uniform Crime Reports.⁶

TABLE - Property Losses from Serious Crimes, 1974

Offense	Property Loss (\$ millions)	Average Loss per Offense(\$)
Robbery	142	321
Burglary	1,181	391
Larceny	816	156
Auto theft	841 ^a	1,246
Arson		
Incendiary and suspicious	616	3,294
Incendiary and suspicious plus 1/2 unknown cause	1,284	2,558

^a 69% of this was recovered.

Within the narrow definition of known cases of arson, losses were comparable to the other property crime categories. If we use the broader definition, arson losses were greater than all other crime categories. In either case, the loss per offense was higher for arson than for any other offense.⁷

One observer has pointed out that for the economy as a whole, the loss from arson is greater still than for other crimes, for while it is of no consolation to the victim, robberies, burglaries and other theft offenses "may be viewed as an involuntary transfers of assets with little net loss to the economy. Arson, on the other hand causes assets to be destroyed."⁸

Arson for profit, or "fire for hire", is generally

believed to be growing at a much faster rate than all other arsons, although firm statistics are not available for many years past. It has been categorized as "America's fastest growing crime" and "the only crime monopolized by the white collar class".⁹ It is estimated that arson for profit cases make up as much as 15 percent of all arson cases. FBI involvement in arson for hire began to accelerate in 1978 with the beginning of intensive training of agents and the investigation of such cases to determine the involvement of organized crime in arson for hire cases. Much FBI work has been centered on "inner city arson cases" where a pattern of property transfers, insurance policy manipulations followed by incendiary blazes have been determined to be motivated by insurance fraud.¹⁰

No less serious, and no less exclusive, is the amateur "firesetter" in the employ of a small business or homeowner who has fallen on hard economic times and seeks to liquidate his property by forced sale to his insurance company. Again, statistics are not fully reliable, however, one insurance industry estimate placed this type of fire at nearly one-fifth of all known cases of arson.¹¹

The Law Enforcement Assistance Administration estimates that for every 100 arson-caused fires there are only nine arrests resulting in but two convictions. The incarceration rate is 0.7%. Of those arrested for arson, 41 percent were adults and 59 percent juveniles.¹²

Real and perceived difficulties in prosecuting arson cases, discussed later in chapters 5 and 7, result in the conviction of relatively few arsonists. Perhaps the most difficult problem to deal with, for a prosecutor interested in or assigned to arson cases, is the historical split of responsibility for such cases among the various public agencies involved. Historically, the attitude of the police has been that arson is a fire problem and that responsibility for arson lies entirely within the fire department. Arson, however, is a crime, and firefighters are often not trained to investigate criminal matters.

In Maryland, as in many other jurisdictions, a state fire marshal has been appointed¹³ to investigate and control arson. Increasingly, fire marshals, prosecutors, local and state police and fire departments are forming informal (or in some cases, formal) task forces to share information and coordinate the investigation, case development, prosecution and prevention of arson.¹⁴ Although legislation often leads to the inclusion of insurance adjusters and investigators on such a task force, there are limitations on the role private agencies can or should play in criminal prosecutions.¹⁵ One of the most common problems addressed by such task forces is the investigations of "suspicious" fires, the identification of evidence, the coordination of evidence collection and analysis. Evidence matters, both technical and prosecutorial, are discussed in detail in Chapter 3.

- 1 "Arson Probes Take Hard Work, Scientific Analysis -- And Some luck," The Washington Post, February 16, 1981.
- 2 Betty Freudenheim, "The Most Neglected Crime in the United States," Barrister, Spring, 1980.
- 3 National Institute of Law Enforcement and Criminal Justice, Arson and Arson Investigation, Washington, 1977, p. 5.
- 4 Ibid., pp. 5-10.
- 5 Ibid.
- 6 Ibid. p.16.
- 7 See table above.
- 8 Arson and Arson Investigation, op. cit., p. 15
- 9 Freudenheim, loc. cit.
- 10 Walsh, Robert E., "Inner-city Arson", FBI Law Enforcement Bulletin, October 1979.
- 11 Arson and Arson Investigation, op. cit., pp. 1-18.
- 12 Ibid.
- 13 Article 38A §7-12, Annotated Code of Maryland.
- 14 Freudenheim, op. cit., See also, "Development of a New Jersey Strategy for Arson Control," The Criminal Justice Quarterly, Fall 1980, and "City's Arson Strike Force Achieves 100% Conviction Rate, Doubles Arrests", The Daily Record (Baltimore) January 16, 1981.
- 15 See discussion of insurance immunity statute in Chapter VI.

CHAPTER I

ARSON DEFINED AND ITS MOTIVES EXPLAINED

Arson generally is the crime of knowingly and maliciously damaging or destroying property by means of fire or explosion. The common law definition of arson - the malicious burning of the dwelling or outhouse of another - has been modified and expanded in virtually every jurisdiction in the Country.¹ It has always been considered a serious crime and is a felony in most American jurisdictions, including Maryland.²

At common law, arson was primarily a crime against the habitation and right of possession of another's dwelling. Among the early restrictions was the requirement that the burned property be the dwelling of another. Thus, one could not legally commit arson by burning a barn, storehouse, factory, or other building not used as a residence, although the courts eventually did extend the definition of dwelling house to buildings such as churches. Nor at common law was the burning of one's own dwelling considered arson, regardless of the damage or injury done.³

Today, as at common law, the offense of arson is complete if there is the slightest burning of any part of the building. The slightest ignition of the building is sufficient. The test is whether the fiber of the wood or other substance is destroyed by fire.⁴ While it is frequently said that there is no arson if the building is "merely

scorched," the use of these words is not recommended since their meaning may be ambiguous.⁵

Of all the research which has been done on arson over the years, perhaps the most comprehensive and most widely distributed has been an analysis of the motives for arson and the types of arsonists.⁶

As with any crime, the motives for arson are quite diverse. While motive is not technically an element of the crime, if a motive can be determined it may provide circumstantial evidence of guilt. Common motives include profit, revenge, spite, jealousy, concealment of other crimes, intimidation and extortion, vandalism, excitement and pyromania. Numerous psychological studies have been done in this area and a partial list is included in the Bibliography. One of the more recent studies was a three part series in the FBI Law Enforcement Bulletin which outlined a complete psychological profile of most known types of firesetters.⁷

- Revenge, spite, jealousy are motives usually attributed to jilted lovers, feuding neighbors, dismissed or disciplined employees, quarrelling spouses, persons who feel cheated or abused and those motivated by racial or religious hostility. One source places jilted lovers and others involved in domestic squabbles as the most frequent incident in this category.

- Vandalism and malicious mischief are motives commonly attributed to juveniles; however, these motives are not

limited to any age group. They are often associated with fires in schools, churches, abandoned automobiles and vacant buildings.

- Crime concealment and diversionary tactics may be attributed to criminals who sometimes set fires to obliterate evidence of burglaries, larcenies and murders, as well as white collar crimes such as embezzlement forgery or fraud. Fires may also be set to divert police while another crime is being committed.

- Profit and insurance fraud - also included in this category, which is discussed below,⁸ is believed to involve a considerable amount of organized crime activity.

- Intimidation, extortion and sabotage - labor disputes and the intimidation of witnesses in other trials are frequently associated.

- Psychiatric afflictions and pyromania also are reasons for some arson fires. The genuine pyromaniac starts fires because of an irresistible urge or passion for fire. Others, sometimes volunteer firemen and security guards start fires to draw attention to their own "heroic" acts.⁹

¹ Brown v. State, 285 Md. 469, 403 A.2d 788(1979), hereinafter cited as Brown.

² Article 27 §6-10A, Annotated Code of Maryland.

³ Perkins on Criminal Law, 2. ed., 1969, pp. 216ff.

⁴ Brown, Ibid., See also Hines v. State, 34 Md. App. 497, 388 A.2d 130(1978). Reversed on other grounds 285 Md. 469, 403 A.2d 788(1977).

5 Hines v. State, 34 Md. App. 612, 368 A.2d 509(1977).

6 Arson and Arson Investigation, op. cit., Chapter 2.

7 June, July and August 1980.

8 Chapter IV, infra.

9 Arson and Arson Investigation, op. cit., Chapter 2.

CHAPTER II

Fire and Arson - A Glossary

A basic technical knowledge of fire and its elements is helpful to the arson prosecutor in investigating and preparing the case. Chemically, fire is " a rapid oxidation with evolution of heat and light". The basic difference between fire and other forms of oxidation, such as rust, is the rapid speed with which it occurs, producing heat and flame, that in turn help to speed the burning.

Three elements are necessary to produce burning:

1. Fuel - something to burn;
2. Heat - to start the process, and;
3. Oxygen.

When these three elements combine in a chemical chain reaction, fire is created. When the chain is broken by the removal of one of these elements, the fire is extinguished. Fire fighting operations are designed to eliminate one of the three elements. Water can deny oxygen or fuel, or even be used to reduce heat. Foam can separate the fuel from oxygen, or the fuel source can be removed or eliminated.

The physical properties of fire are, like all physics, predictable and can help in both inhibiting the spread of the fire (for fire fighting purposes) and tracing the fire back to its origin (for investigative purposes).

The transfer of heat, for example, occurs in one

of three ways:

1. Conduction - Conduction is the transfer of heat from one body to another either by direct contact or through a heat-conducting solid, liquid, or gas. A simple example of this is a hot iron on an ironing board, or a stove pipe in contact with wood. Insulating material will not totally stop the transmission of heat, but will slow it. If the rate of heat conduction is greater than the dissipation rate from the combustible material, the material may reach ignition temperature, particularly when conditions of conduction exist over a long period of time.

2. Convection - Convection is the transfer of heat by means of moving gases or liquids. It is convection that can cause the investigator the greatest problem if he does not understand this principle. Most fire fighters have encountered situations in which the primary burning is confined to a basement or lower floor at the time of their arrival. Then a brownish smoke appears around the eaves of the roof and suddenly the cry goes up "She's burning in the attic." No flame actually reached from the fire burning below to the attic, but superheated gases traveling upward caused the ignition of combustible material in the roof area, showing that movements of superheated air or gases can cause ignition of material with a low ignition temperature that is removed from the actual burning itself. Upon examination

of the structure after the fire is extinguished, the investigator who does not understand convection may mistakenly analyze these separate points of burning as the separate and unconnected fires which normally are associated with incendiary fires.

For example, in one dwelling fire it appeared that seven separate fires had occurred in different areas of this one-story structure. The point of origin of the fire was traced to a mattress in one bedroom. In other areas, curtains, paper and furniture which had the lowest ignition temperature had caught fire, not from direct flame, but from superheated gases which had reached a probable temperature of 500°F as they circulated through the building. These same superheated gases, usually brown in color with wisps of flame appearing occasionally, account for what is called "flashover." When the room temperature reaches 600°F to 700°F these gases ignite and the entire room appears to burst into flame at once. This can also account for eyewitness descriptions of flames spreading down a hallway with fantastic speed.

If the accumulation of these superheated gases is sufficient in quantity, what may appear as an explosion occurs when they reach ignition temperature. A case on record illustrating this principle involved a fire in a large metal building used as a manufacturing plant for wood products. Floor space in this building was approximately the size of a football field. The building had no windows and was almost airtight, so superheated gases had no means

of escape. When temperatures in the interior reached nearly 700°F, these gases ignited with phenomenal results: the structure appeared to explode, not outward but upward. The roof and sides held firm, and the entire massive structure rose three to four feet off the ground and then dropped back on its foundation. The conditions on the interior, however, had not materially changed; accumulation of gases was extensive, as was the heat buildup. When the gases re-ignited, the results were again sensational: this time the entire roof blew off the building and great masses of ignited gases spewed 100 to 200 feet into the air. Witnesses described the spectacle as resembling an atomic blast.

In summary, a clear understanding of the principle of convection is a must, for the investigator without this understanding will be unable to reach any conclusions as to origin and cause of many fires and unable to explain the fire spread or the resulting burning pattern.

3. Radiation - Radiation is the transfer of heat by heat rays through intervening space. A prime example of this is heat from the sun which reaches us through millions of miles of space. Radiant heat causes problems for fire fighters, since many times buildings adjacent to an involved structure ignite strictly from radiant heat, when conduction, convection, and direct flames are not involved.

The investigator must understand some facts connected

with radiation. First, because the sun's rays reach us normally in a vertical or near vertical manner, it is erroneously assumed that radiant heat rays only move vertically or near vertically. Any experienced fire fighter knows better, having observed ignition of one building from another by means of radiant heat moving horizontally. Second, heat radiation is not a one-way process. Heat reaching a wall by radiation from a stove in turn radiates heat in all directions. Third, heat transferred by radiation spreads in all directions from its source and not just in one direct line. Fourth, situations can occur which involve transfer of heat by a combination of radiation and conduction: for example, radiant heat from one source can heat a wall, pass by conduction through the wall, and emerge from the other side where once again heat may be transferred by radiation.

Without a clear understanding of heat transfer by radiation, the investigator may find explanation of the fire spread from one point to another extremely difficult. This is particularly true if the fire has moved from one room to another with no indications of the convection process or direct flame in evidence.

Direct flame is sometimes listed among the methods by which heat is transferred. No explanation of this phenomenon is necessary, for it is quite obvious that direct flame applied to any combustible material will ultimately result in ignition of this material.

Another method of heat or flame spread which is of

major importance to the investigator is falling burning material. These materials can fall down through wall space, utility cores, laundry and trash chutes, and elevator shafts. Wood and other combustible material which falls from the ceiling or through burned-out flooring from the floor above can create fire patterns puzzling to the investigator. This is particularly likely when such materials burn extensively in the area where they have fallen, creating significant damage such as holes in the floor, and perhaps leading the investigator to the conclusion that this lowest point of burning was the point of origin of the fire. This method of heat and flame spread must be given full consideration by the investigator when examining burn patterns.

Since the normal growth of a fire is upward, evidence of a downward spread is unnatural in most structural fire situations and therefore an indication of possible arson. Thus an elementary understanding of heat transfer is essential to prosecutors in preparing and explaining the case.

In dealing with incendiary fires, the prosecutor may be exposed to many technical terms, techniques and testing procedures. A rudimentary familiarity with them is, therefore, essential to understanding the characteristics of incendiary fires. The following terms are among the most commonly used in conjunction with arson investigation and prosecuting.

1. Accelerant - Material (usually a flammable liquid) that is used to initiate or increase the spread of fire.
2. Alligating - Char patterns formed on burned wood remains, in the shape of blisters.
3. Annealing - Relieving stress in materials such as metal through heating followed by gradual cooling.
4. Annoxia - Absence of oxygen within the body.
5. Area of Origin - General localized area where a fire originated.
6. Aromatic Hydrocarbon Detector - Device to detect the presence of hydrocarbon sources such as gasoline and kerosene; sniffer.
7. Arson - At common law the malicious and willful burning of another's dwelling house or outhouse appurtenant thereto, or a parcel of the dwelling house or within the curtilage; by statute generally the malicious and willful burning of specific types of property, usually whether one's own or another's.
8. Arson Hotline - Telephone line and operation set up for the purpose of receiving information on arson crimes, often anonymously given.
9. Arsonist - A person who commits an act of arson.
10. Arson Task Force - A group of individuals who convene to analyze, investigate, and solve the arson problem in a particular region.

11. Ash - Powdery residue remaining after combustion of solid matter.

12. Back Draft - An explosion or rapid burning of heated gases resulting from the introduction of oxygen when air is admitted to a building heavily charged by smoke from a fire which has depleted the oxygen content of the building.

13. BTU - Abbreviation for British Thermal Unit.

14. Building - A relatively permanent walled and roofed structure that stands alone and separate from other structures.

15. Burn - To be on fire; to consume fuel during rapid combustion; a geographical area over which a fire has passed; a fire in progress or under investigation; an injury caused by a fire's heat coming in contact with skin.

16. Burn Pattern - Apparent and obvious design of burned material and the burning path of travel from a point of fire origin.

17. Carbonaceous Material - A material that contains carbon.

18. Cause of Death - Injury, disease, or combination of the two responsible for initiating the train of disturbances - either brief or prolonged - which produced the fatal termination.

19. Chain of Custody - Continuous changes of possession of physical evidence that must be established in court to admit such material into evidence.

20. Char - Carbonaceous material formed by incomplete combustion of an organic material, commonly wood; the remains of burned materials.

21. Circuit Breaker - Device designed to open and close an electrical circuit manually, especially serving as a protective device by disconnecting power automatically in the event of an overload.

22. Combustible - Capable of being ignited and burned after application of sufficient heat.

23. Combustible Liquid - A liquid generally with a flashpoint at or exceeding 140 degrees F. (60 degrees C.).

24. Combustion - An exothermic chemical reaction that produces heat, and generally light as well, in a variety of mediums; the burning process, causing loss of weight to a compound.

25. Conduction - Heat transfer by direct contact with a body or object.

26. Confinement - Act of confining a fire to the place, room, garage vehicle, or block of its origin.

27. Convection - Heat transfer by circulating element in gas or liquid form.

28. Corpus Delicti - Body of a crime established by a showing of all elements needed to prove that a particular crime occurred.

29. Crazing - Cracking of glass, such as windows and mirrors, from the heat of fire.

30. Crowing Out - Characteristic phenomenon in a wildland fire whereby a tree's leaves or needles burn straight up to the top of the tree, regardless of wind conditions.

31. Cupping - Characteristic scouring out of brush or tree remains by a wildland fire in progress.

32. Dewatering - Removing water after fire extinguishment to prevent further damage to a building and its contents, usually accomplished with water vacuums, squeegees, mops, and brooms.

33. Exclusionary Rule - Judicially established evidentiary rule that excludes from admission at trial, evidence seized in a manner considered unreasonable within the meaning of the Fourth Amendment of the U.S. Constitution.

34. Expert Witness - A person who possesses special knowledge in a particular field by virtue of specialized skill, expertise, training, and/or education, and who is adjudged qualified to render expert opinions in that field in court proceedings.

35. Explosion - A bursting or violent expansion resulting from a sudden production or release of pressure, accompanied by a loud noise, temperature around 3,000 degrees F., and usually a large volume of gas.

36. Explosive - Any substance, or combination of substances, the primary and common purpose of which is detonation or rapid combustion, that can release gas and heat very rapidly; any substance whose primary purpose when

combined with another substance is to form a substance able to rapidly release gas and heat.

37. Explosive Limits - Minimum and maximum concentrations of vapor or gas in air or oxygen in which combustion can be supported.

38. Exposed Side-Protected Side Theory - A wildland fire direction indicator based on the proposition that flames rolled from behind the exposed side of trees and other objects toward the direction of the untouched side of objects.

39. Exposure - Those persons, buildings, other structures, or other property in the path of the fire spread.

40. Extinguishment - Putting out a fire until no fire remains.

41. False Alarm - Fire alarm resulting in no sighted fire, often deliberately initiated.

42. Fire - Rapid oxidation, usually with the evolution of heat and light; heat, fuel oxygen, and interaction of all three.

43. Fire Alarm - Call announcing a fire; a bell or other device summoning a fire company to respond to a fire or other emergency.

44. Fireball - Flaming spherical mass sometimes created when a large amount of vaporized flammable liquid suddenly combusts; mushroom-shaped cloud resulting from a nuclear explosion.

45. Fire Bomb - An incendiary device, usually hand-thrown to break, spill flammable contents, and ignite.
46. Fire Building - Building in which a fire first started; building in which a fire is in progress.
47. Fire Bug - Arsonist, especially a repeating firesetter.
48. Fire Cause - Agency or circumstance that started a fire or set the stage for one to start; source of a fire's ignition.
49. Fire Door - Fire-resistive door, usually self-tripping, designed to prevent or retard the spread of fire through a building.
50. Fire Fighting - Activities undertaken and procedures employed to combat and extinguish a fire.
51. Fire Fighting Strategy - Technique of locating, confining, and extinguishing a fire.
52. Fire Fighting Tactics - Art of utilizing personnel, equipment, and apparatus to effectively achieve a fireground objective.
53. Fire Flow - Amount of water needed to extinguish a fire.
54. Fireground - Operational area on which firefighters combat a fire.
55. Fire Hydrant - Valved outlet to a water supply system to provide a source of water for fire department hoses and pumpers through threaded outlet connections.

56. Fire Loan - Measure in British Thermal Units of the amount of heat the might be released during a fire in a particular building or space.
57. Firesetter - A person who starts a fire, usually deliberately and maliciously.
58. Firesetting - Starting a fire, usually deliberately and maliciously.
59. Fire Suppression - Fire fighting acts to control and reduce a fire.
60. Fire Truck - A motor vehicle that carries firefighters and equipment to a fire or other emergency; a piece of fire fighting apparatus.
61. Flame - Light given off by burning gases during the combustion process.
62. Flammability Limits - Minimum and maximum concentrations of vapor or gas in air or oxygen in which combustion can be supported.
63. Flammable - Capable of burning and producing flames.
64. Flammable Liquid - A liquid generally with a flash point below 140 degrees F. (60 degrees C.) and a vapor pressure that does not exceed 40 psia at 100 degrees F. (37.8 degrees C.).
65. Flanks of the Fire - Areas along the sides of a spreading wildland fire, to the right and left of the point of origin.

66. Flashover - Critical point for life safety and fire control: ignition temperature is reached by most all exposed surfaces in a room, rapidly spreading fire everywhere at once.

67. Flash Point - Temperature at which a liquid vaporizes enough to form an ignitable mixture with air.

68. Forcible Entry - Entering a structure or vehicle by means of physical force, characterized by prying open doors and breaking windows, leaving visible indicators of illegal entry if pry marks and certain window breakage are present upon the first firefighters' arrival.

69. Frangible Container - Breakable receptacle such as a glass bottle, used in the construction of a Molotov cocktail.

70. Fuel - Flammable substances available for a fire to consume.

71. Fuel Load - Total amount of combustible contents in a particular building or space, measured in British Thermal Units or equivalent weight in wood.

72. Gas Chromatograph - Device to detect and separate small quantities of volatile liquids or gases through instrument analysis.

73. G.P.M. - Abbreviation for gallons per minute.

74. Ground - Conducting connection between an electrical circuit or equipment and the earth or an earth-surrogate; conductor furnishing an electrical path for

current to flow into the earth or its substitute.

75. Halligan Tool - A tool designed for use by firefighters to effect forcible entry into a structure, built with a claw at one end and two spikes at the other, protruding at 90 degree angles.

76. Head of the Fire - That area of a wildland fire moving rapidly in the same direction the wind is blowing, and burning hotter than other areas involved in the fire.

77. Heat - Temperatures higher than that of the normal atmosphere, produced by the process of burning or oxidation.

78. Heat Transfer - Passage of heat by convection, conduction, and/or radiation from one place to another.

79. Heel of the Fire - Area of a wildland fire that backs against the wind.

80. Hemorrhage - A discharge of blood, generally from a blood vessel.

81. Horizontal, Mechanical Ventilation - Use of smoke ejectors and the systematic opening of doors and windows to ventilate a structure.

82. Hoseline - Lengths of connected flexible conduit used to transport water under pressure for the purpose of fire suppression and extinguishment; a short rope used for securely tying hose and other objects.

83. Hotline - Telephone line and operation set up for the purpose of receiving information, often anonymously

given.

84. H.P. - Abbreviation for horsepower.

85. Humidity - Amount of moisture present in the air.

86. Hydrocarbon - An organic compound containing only hydrogen and carbon molecules, such as gasoline.

87. Hypoxia - Reduction of oxygen in the body below the level necessary to sustain life.

88. Ignition Source - Mechanism employed to initiate combustion.

89. Ignition Temperature - Lowest temperature at which a substance can sustain its own combustion without support from a heating or heated element.

90. Incendiarism - Deliberate setting of a fire or fires by a human being.

91. Incendiary - One who deliberately starts a fire, an arsonist; deliberately set; humanly set; a flammable container, material, or device used to start a fire, like a fire bomb.

92. Incendiary Device - Contrivance designed and used to start a fire.

93. Indicator - Visual remains at a fire scene revealing the fire's progress and action.

94. LPG - Abbreviation for liquefied petroleum gas.

95. Manner of Death - Fashion or circumstances in

which cause of death arises, namely accident, homicide, suicide, natural, or undetermined.

96. Modus Operandi (M.O.) - Mode or method of operation; favored pattern of steps performed by a perpetrator during the commission of a crime.

97. Molotov cocktail - A breakable container type of flammable device, employing a wick of some sort, tossed as a fire bomb.

98. Multiple Points of Origin - Two or more separate points of fire origin discovered at a fire scene, a strong indication of arson.

99. Negative Corpus - Establishing the corpus delict of arson by eliminating all possible accidental, natural, and other fire causes except a malicious incendiary act of firesetting.

100. Nonflammable - Material unlikely to burn when exposed to flame under most conditions.

101. Nozzle - Metallic tubular attachment coupled to a hose to increase fluid velocity and create a jet.

102. Occupant - A person who lives in, uses, occupies, or has other possession of an apartment, house, or other premises.

103. Overhaul - Fire department procedure of inspecting premises after extinguishment to insure that the fire is completely extinguished and will not rekindle later on, and rendering the fire-damaged premises in a safe condition

before returning control over to the owner and/or occupants.

104. Oxidation - Process during which oxygen combines with another substance.

105. Pneumograph - Component of the polygraph instrument that records abdominal and thoracic respiration, or breathing pattern.

106. Point of Origin - Exact place where a fire originated.

107. PSI - Abbreviation for pounds per square inch.

108. PSIA - Abbreviation for pounds per square inch absolute.

109. Pyrolysis - (fire with limited ventilation) - Loss of weight of a compound due to oxidation under the conditions of limited ventilation (oxygen availability), with some rise in heat and usually without flame.

110. Pyrophoric Material - An easily or quickly ignitable material; a substance that spontaneously ignites in dry or moist air at or below 130 degrees F..

111. Quint - an aerial ladder or elevated platform with all the basic truck company equipment, as well as a pump, hose, and a small water tank.

112. Radiation - Heat transfer by waves of energy radiating through space.

113. Rig - Any firefighting apparatus.

114. Salvage - Fire department operations carried out to minimize damage done to a building and/or its contents

by fire, smoke, water, or other elements.

115. Salvage Company - Fire company equipped to carry out salvage operations protecting property.

116. Seat of the Fire - Heart of the fire where the main body of the fire is congregated.

117. Slope - Differences in elevation of the terrain involved in the spread of a wildland fire.

118. Smoke - Small particles of carbon, tarry particles, and condensed water vapor resulting from the incomplete combustion of carbonaceous materials such as wood, coal, or oil.

119. Smoke Detector - Device which detects the presence of smoke in a building, with sensors that trigger an audible alarm to alert occupants when smoke is detected.

120. Smoke Ejector - Mechanical fan used to ventilate a structure after a fire inside; a smoke extractor.

121. Snag - A dead, dry, standing tree trunk.

122. Sniffer - Device to detect the presence of hydrocarbon sources such as gasoline and kerosene; aromatic hydrocarbon detector.

123. Snorkel - Aerial platform apparatus for fire suppression, useful as a photo platform and place to safely attack a fire from above.

124. Spalling - Explosive pitting or chipping destruction of a surface, usually concrete, from intense heat buildup commonly caused by the activating of an accelerant.

125. Splash Pattern - Characteristic pattern left on a wall by an accelerant splashed there, usually in the shape of an inverted "V".

126. Spontaneous Combustion - Combustion of a material initiated by an internal chemical or biological reactions producing enough heat to cause the material to ignite.

127. Squad Company - Small compartmentalized unit on a pickuptruck type of chassis, usually for emergency paramedic and additional manpower and equipment response demands.

128. Staircase-Type Pattern - Characteristic suppressed pattern appearing in the respiration tracing of a test subject's ploygraph chart.

129. Structure - A constructed object, usually a building standing free and above ground.

130. Task Force - A group of individuals convened to analyze, investigate, or solve a particular problem.

131. Time-Delay Device - Contrivance used by a firesetter to effect a getaway by delaying the time of ignition of combustible fuel.

132. Torch - A professional firesetter, often for hire; to set fire to property deliberately and maliciously.

133. Trailer - Combustible material, such as rolled rags, blankets, and newspapers, or flammable liquid, used to spread fire from one point to other points or areas, often

used in conjunction with an incendiary device.

134. Trashing Fire - A fire for fire's sake, often of garbage, and often riot-inspired.

135. Ultraviolet Light - Detector of volatile liquids and moisture traces.

136. Understory - Ground level cover in wildlands.

137. Vapor Density - Ratio of given volume of gas to an equal volume of air, at equivalent temperature and pressure.

138. Vegetation Fire - A fire in grass, brush, trees, grain, or other plant life; wildland fire; wildfire.

139. Ventilation - Means of replacing hot, smoky, toxic air with fresh air from the outside at a building fire, often done by cutting a large hole in the roof of the structure, to rapidly increase the spread of flames.

140. Vertical Ventilation - Opening a hole at the highest and hottest place on a structure's roof to ventilate it.

141. Voir Dire - Jury selection phase of a jury trial.

142. Volatile - Changing into vapor quite readily at a fairly low temperature.

143. Volt - Meter-kilogram-second unit reflecting the potential difference between the terminals of an electrical energy source.

144. "V" Pattern - Characteristic fire cone-shaped

pattern left by fire on a wall, at or near its point of origin.

145. Water Curtain - Water streams strategically placed to protect exposures from fire.

146. Water Tower - Fire apparatus consisting of a tower holding a telescoping pipe with a nozzle mounted at the top.

147. Water Vacuum - Implement used to dewater a building after fire extinguishment.

148. Wildfire - A fire in grass, brush, or timberland burning out of control; wildland fire; vegetation fire.

149. Wildland Fire - A fire in grass, brush, or timberland involving uncultivated lands; vegetation fire; wildfire.

¹ For a complete discussion of the Chemistry of Fire, See Arson Investigation, (Boston: National Fire Protection Association, 1976), Chapter 4.

CHAPTER III

ARSON INVESTIGATION PROCEDURES AND THE USE OF SCIENTIFIC EVIDENCE

The investigation of the fire scene itself is usually the most important evidentiary aspect of an arson case. While the arsonist may be nowhere near the scene when the firefighters, investigators or police arrive, there is still a great deal of evidence to be discovered, identified and preserved.¹

Evidence of arson may be in the form of items which the arsonist inadvertently left behind, or brought to the scene to aid in the fire setting (such as one of the three elements necessary for fire itself).² Or the evidence may be the type, degree or pattern of damage to the building or other property damaged by the fire itself. This section will discuss some of the types of evidence which may be developed from the fire scene itself. The experienced arson investigator will use all of these items, plus some of the technical methods discussed below to reconstruct the fire and determine its origin.

The initial observations of witnesses, firefighters and police are as critical in arson cases as in any other crime. Routine notations such as the time and date of the fire, time of alarm and who made the report as well as a brief description of the number and type of people at the fire scene itself should be recorded in a systematic fashion. It is often considered good practice to take several photographs

of the crowd at a fire scene to aid in the later identification of possible suspects. The license tag numbers of parked vehicles and vehicles observed leaving the scene should also be recorded and checked for possible witnesses or suspects.

A physical description of the fire from both citizen witnesses and firefighters is critical since it may help determine the origin and type of fire. Such items as weather conditions and a description of the immediate premises and surrounding the fire scene should also be made a part of the file. A physical description, or better yet, photographs, of the height, color and amount of flame and smoke may help determine what materials were burning in the fire. The size and speed of spread of the fire may also provide clues as to whether or not the fire is arson. Flammable liquids or other incendiary materials may be used to speed the spread or intensity of the fire or to thwart firefighting efforts, since water if used on some liquid accellerant may actually intensify and spread the fire. Certain accellerants may also be used to rekindle a seemingly extinguished fire.³ The presence of such occurrences should be noted.

The intensity of the heat, the effects of radiation, convection and conduction should be noted, along with unusual odors, which may have been caused by the use of accellerants. The exterior and damaged portion of the interior should be photographed by investigators during and after the fire an attempt should also be made to reconstruct the pre-fire

conditions. If possible severe damage, such as areas of wall that have been burned through to the exterior, should be related to the interior. The contents of the building should be noted with particular attention to the presence of items that would normally not be found in such buildings as well as, evidence of items, which should have been present, but have been removed prior to the fire. Missing items, particularly in commercial or residential fires, may indicate that the fire was expected and valuable property was removed. Where it can be determined that valuable property has been removed prior to the fire, a strong inference is created that the fire was arson.⁴

It is legally necessary in an arson case to establish that the fire was not the result of natural or accidental causes.⁵ It thus becomes critical to establish the precise cause of the fire early in the investigation.

Sources of ignition are well established: open flames, electric arc, heating and cooking devices, machinery, chemical processes and spontaneous ignition are the most common. Each of these sources of ignition can be located in a special section of a building and a skilled investigator can determine if the cause of the fire was accidental resulting from one of the following conditions:

- faulty electrical system
- gas leaks

- defective stoves or burning devices
- spontaneous combustion
- painting equipment
- careless smoking
- children or pets with open flame
- lightning
- faulty heating systems
- sparks or pilot lights

Arsonists use numerous devices to start and spread fires. Below are some of the more common materials used:

- plant - the material often placed around an ignition device to feed the initial fire;
- trailers - used to spread fires between plants.

Common trailers include rope, rags, and newspapers, often soaked in accelerants or flammable liquids;

- Timing and ignition devices include candles and heating devices;
- Chemicals and their containers, and chemical residue;
- accelerants - such as gasoline or lighter fluid;
- flammable liquids, - residues and containers.

One of the most important items of evidence at the fire scene is the charring of the wood and its pattern.

Charring indicates the origin, intensity and duration of a fire. The degree of charring may also indicate the use of an accelerant. While a technical analysis of charring is beyond the scope of this manual⁶ some elementary information will help assist the prosecutor in analyzing the evidence from a fire scene.

Charring is usually heaviest at the point of origin and generally that will be the lowest burned area of the building. Any variance from the pattern may indicate arson.

A fast intense fire, such as one made by accelerants, will cause deep heavy alligatoring or checkering of the wood.⁷

A slow gradual fire will cause small shallow and broad alligatoring with a rough surface while low temperatures will result in a light baked crazing on the burned surface.

Deep floor charring may indicate the use of an accelerant since the average floor temperature is normally only one-third that of the ceiling temperature.

The use of accelerants also may leave an "ink blot" char pattern, in the form of the spilled liquid.

Similar evidence can be deduced from an examination of other materials in the fire area, such as glass, metals, concrete and brick. Holes in floors, walls and doors should be investigated to establish the spread pattern of the fire.

The presence of flammable liquids can be established

by both the sense of smell and scientific equipment such as a combustible gas detector commonly known as a "sniffer", gas chromatograph and infra red spectrophotographer. These devices, the use of which is generally admissible when tests are performed by a properly qualified expert⁸ are considered reliable in increasing order of those listed above. Some tests may be performed on the scene, while others require that the evidence be sent to a laboratory for analysis.

Other physical evidence, such as inoperative sprinklers and alarms, footprints, fingerprints, tire tread marks, locked doors and windows, should, along with burned and charred woods, metals and other indicators, be properly documented, preserved and analyzed by a trained arson investigator. While the technical methods of evidence preservation are beyond the scope of this manual, a number of excellent texts are available to persons interested in a more indepth discussion of them.⁹

Photographs of the fire scene, damage and evidence are invaluable at trial. They not only assist the fact finders to understand any expert testimony presented, but they also graphically illustrate the destructive and life threatening nature of the fire itself. Among those items which should be liberally photographed, as early as possible, are:

- The fire in progress
- The vehicles and crowd at the scene

- Evidence found outside the building
- The entire building from a distance
- All doors, windows and entrances
- Close-up shots of the individual evidence itself (a ruler scale should be used to indicate the very close photographs)
- Undamaged rooms.

A convenient check list of information necessary for the prosecutor to evaluate the evidence obtained from the fire scene or developed through an indepth investigation of the crime is contained in the Appendix of this manual. EVIDENCE COLLECTION AND PRESERVATION.¹⁰

An important aspect of all arson investigations is the collection and preservation of physical evidence from the fire. Since instantaneous or on-site laboratory analysis is not practical for most agencies, the materials collected must be properly preserved until the analysis is conducted. For this reason, careful collection and packaging are essential. Whether in collection, packaging, transmittal, or storage, the condition of the evidence must remain unchanged and uncontaminated. Once one is familiar with the properties of interest to the forensic scientist, the application of common sense will virtually always lead to successful preservation. For instance, volatile evidence will not be recovered from locations which have been exposed to extreme heat. Volatiles are called that simply because if they are left in the open,

they will evaporate therefore be undetectable for analysis. Their recovery and packaging must be aimed at preventing unnecessary exposure to open air. Airtight, nonpermeable containers are required.

PACKAGING OF DEBRIS CONTAINING VOLATILE ACCELERANTS

There are a number of options regarding the packaging used for volatile accelerants. Clean, new metal paint cans are best for debris which contain suspected volatiles, since cans are easily sealed and resealed. They are unbreakable, and they are available generally at low cost. Glass jars with tight-fitting lids are a second-best alternative. They, too, are nonpermeable and available at low cost; however, they are subject to breakage. This is especially important where the evidence cannot be hand-carried to the lab and must be mailed or shipped. Everyone normally considers common plastic bags to be nonpermeable; however, this is not always true. Polyethylene and polystyrene bags, the most common types of plastic bags, are permeable to light hydrocarbon vapors. In other words, if one packages debris containing a light accelerant, such as cigarette lighter fluid, in such a bag, that material will eventually seep through the plastic bag and be lost. Plastic bags of nylon, polyester, or polypropylene are not subject to this problem and can be used for the successful packaging of volatile materials. The important task here is to recognize the ideal conditions of preservation and to approach these conditions as much as possible. If metal cans or glass jars of sufficient size

are not available, one can use plastic bags in double or triple layers, so long as the evidence is brought to the laboratory or repackaged in suitable containers within a short period of time. Such materials should not be packaged in a "breathable" container, such as a paper bag.

When liquid specimens of raw volatile fluids are being recovered, special precautions are necessary. All-metal paint cans are satisfactory since they are leakproof and insoluble. Since the wax paper or plastic liners used in some bottle caps may be attacked by gasoline or lacquer thinners, they should be used with caution. If necessary, one should maintain such capped bottles in an upright position to minimize contact between the accelerant and the cap. Cork stoppers are suitable for capping glass containers; however, rubber stoppers and rubber Mason jar seals are readily attacked by petroleum distillates. Contact of even a few minutes will contaminate control specimens, making them useless for comparison with suspected accelerants. Many plastics, such as polystyrene, are soluble in gasoline and must not come into contact with suspected accelerants. While polyethylene bottles may be used, it should be noted that, components of such plastics interfere with the instrumental tests presently used for the identification of lead additives. If such additives are going to be important in later analyses, contact with such plastics should be avoided. Polyethylene is translucent, pliable, and has a waxy feel, while polystyrene

is usually clear, brittle, and glass-like. No matter what the container, the top should be secured with strong tape to prevent its loosening during transit.

If the exhibit is fragile, it should be packaged to prevent further unnecessary breakage. Charred documents or burned paper containers should be packaged loosely in fluffed cotton wool in a rigid box, and hand-carried to the laboratory. It is essential that attempts to restore charred objects not be made under field conditions except in unusual situations. The spraying of charred papers, matches, or cigarettes with lacquer, varnish, or glycerine will destroy fingerprints and substances in saliva which can be blood-grouped. Such spraying can also interfere with the identification of cigarette brands and with comparisons of paper matches to suspected matchbooks. During laboratory examination, charred documents may be treated with water or glycerine to aid in their reconstruction or identification. Such processes require considerable experience on the part of the examiner and should not be conducted in the field. It is better, under most circumstances, to lift the charred materials carefully into loosely fluffed cotton as they are found and carefully transmit them by hand than to risk obliteration of useful properties by coating them to maintain their integrity.

MAINTAINING THE CHAIN OF CUSTODY.

Of equal importance to the security of the physical evidence itself is the security of the chain of custody of

that evidence. The most ingenious analysis of an accelerant or a Molotov cocktail fragment cannot be used if that object cannot be accounted for from the time of its recovery to the time of its presentation in court. Evidence may be just so much fire debris until it is recognized at the scene and recovered as "potential evidence" by the fire investigator. The description of the item recovered, its location, the name of the investigator and the date and time of its recovery should all be recorded on the container. Subsequently, each individual who maintains custody of this item from then on should make note of the date and time of his custody. Large items may be initialed directly but small items or those requiring special handling cannot be written upon. The recording of all data on the outside of an item's container is its best insurance against loss or misidentification. Evidence tags are also useful.

It should be noted that Maryland Courts have held that the chain of custody for evidence need not be proven beyond a reasonable doubt, but only that there be a showing of reasonable probability that no tampering with any evidence has occurred.¹¹

Beyond the point-of-origin investigation and elimination of accidental methods of origin determination discussed above, it is often necessary for the fire investigator to use mechanical devices to detect and preserve evidence of flammable liquids or accelerants. While local arson investigators

or the Fire Marshal's office will have detailed information concerning the devices available and their use, the prosecutor should have some familiarity with their application.

- Combustible gas detector - also called the "sniffer" should be used whenever possible to detect the possible presence of combustible liquid vapor. Readings should be taken from the ashes at likely points of origin such as floors, under rugs and other low points, since the areas will result in a much stronger reading due to seepage of the accelerant into an area where it may not have fully burned. Photographs should also be taken of the location where the reading was taken.

- Gas Chromograph - is a more precise means of detecting and identifying flammable liquids. When a sufficient sample is tested, it can detect type of accelerant (gasoline, kerosene, paint thinner, etc.) and may, in cases which warrant it, be used to identify the precise type and grade of accelerant used.

- Infrared spectrophotographer - a still more precise means of identifying combustible materials. This laboratory instrument is not portable, however samples may be taken, according to established procedures, and sent for laboratory analysis.

- Scanning electron microscope - particularly useful in cases where explosive devices were used to start or accelerate the fire. This is another laboratory instrument

which requires the taking of a sample to be sent for analysis.

Technical assistance to fire investigators is the responsibility of the Maryland State Fire Marshal or the Baltimore City Fire Marshal, depending on the location of the fire. Fire investigators also have available to them the resources of the Federal Bureau of Investigation laboratory in Washington and the Bureau of Alcohol, Tobacco and Fire Arms Laboratory in Gaithersburg which specializes in trace evidence analysis, particularly in explosion-related fires. The operating procedure and chain of evidence requirements of these laboratories should be carefully observed to obtain the best possible results and reliable evidence.

¹ Arson and Arson Investigation, Chapter VI.

² See Chapter II, supra.

³ Gordon F. McKinnon, ed., Fire Protection Handbook, 14th ed. (Boston: National Fire Protection Association), pp. 3-19.

⁴ Walsh, supra.

⁵ Hughes v. State, 6 Md. App. 389, 251 A.2d 373(1969).

⁶ See sources noted in Bibliography, infra.

⁷ For definitions, see Chapter II, supra.

⁸ David H. Hugel, The Evidence Handbook, 5th ed. (Chicago: Northwestern University Press, 1980), pp. 130-134.

⁹ See Bibliography, supra.

¹⁰ Adapted from a lecture by Joseph W. McGiniss, Special Agent, FBI Academy, Forensic Science Faculty, given at a Seminar on Prosecution of Arson Cases in Maryland, September 22, 1980.

¹¹ Brooks v. State, 24 Md. App. 334, 330 A.2d 670(1975).

CHAPTER IV

ARSON, FRAUD AND ORGANIZED CRIME

USING RICO AS A WEAPON¹

One of the most widespread and difficult types of arson to prove is arson for insurance fraud. Most major urban and suburban areas that have deteriorating residential and commercial areas have experienced arson motivated by the desire to collect insurance proceeds.

The exact scheme may be modified to meet the needs of arsonist and local conditions, but this crime, due to the potential complexity of the scheme, poses special challenges to law enforcement.

There are a number of schemes utilized by people in the commission of fraud-motivated arson:

- Undisclosed duplicate insurance is purchased from two or more insurance agencies with full collection from two or more insurers.

- Mortgagees, partners, and others with less than full ownership overstate their insurable interest, resulting in payment redundancies.

- Individuals, partners, corporations, and others frustrate underwriting detection by concealing true ownerships of intended fraud-fire property through a "straw" ownership, listing themselves as mortgagees.

Ironically, the criminal party thus obtains a superior contractual relationship because of the provisions of standard fire insurance mortgage clauses.

- Property is purchased in an economically depressed section of a city and is insured for more than its market value. The resultant fire leaves the insured with a substantial profit on his investment.

- The "paper value" of property is increased through a series of phony sales, cosmetic improvements, and false promises of greater economic return on investment.

- Buildings are purposely allowed to deteriorate. Building codes and standards are ignored, taxes are not paid, and tenants are encouraged to vacate the premises, setting the stage for a fraud fire or loss induced by vandals or vagrants.

These schemes are all perpetrated for a profit motive as is most all insurance fraud-arson. When fraud-motivated arson occurs, the insurance company has a responsibility to investigate the claim and should utilize every feasible policy contractual agreement to resist payment of the claim; if such action is warranted. Interestingly enough, it has been estimated by some that less than 5% of all "incendiary"-classified fires are set with the intent to defraud an insurer. Yet these fraudulent

fires result in a significant percentage of arson damage. This is partly based upon a belief that intentionally set fires generally burn with greater ferocity and may account for 35 to 40% of all fire damage.

Insurers are confronted with the difficult task of promptly indemnifying the innocent victims of arson caused by strangers to the insurance contract and vigorously resisting payments to those responsible for fraud-motivated fires. Nevertheless, since arson is a crime, insurers recognize a moral or civil obligation to cooperate with public officials in their investigation of fires.

An extensive list could be made of those who actually set arson fires. Some of the more common arsonists with a profit motive are as follows:

- Property fraud-arson rings, perhaps with organized crime connections
- Homeowners unable to favorably dispose of homes due to deteriorating neighborhoods, undesirable features, financial recession, absence of mortgage money, or overpricing
- Homeowners who wish to remodel, make major alterations, or redecorate their homes
- Businessmen with obsolete or unsalable seasonal goods
- Owners or others with insurable interests seeking to liquidate businesses because of such factors

as:

- a. outmoded plant requiring extensive retooling
 - b. building in need of extensive renovation
 - c. adverse market conditions
 - d. poor management
 - e. competition
- Individual or groups of individuals with major financial difficulties necessitating immediate funds
 - Welfare recipients who obtain a cash allowance or expect to be moved to a more desirable location by having a fire in their current apartment
 - Individuals seeking employment as watchmen, firemen, and policemen
 - Public insurance adjusters hoping to secure contracts to adjust fire losses
 - Professional torches-for-hire.

Organized crime is defined as "continuous criminal conspiracy motivated by profit involving some sort of formalized structure." Organized crime employs predatory tactics such as intimidation, violence, and corruption, and it appeals to greed to accomplish its objectives and preserve its gains.²

Organized crime activities are motivated by financial rewards and facilitated either by the discipline enforced by fear, threats, greed, or through corruption of public or private officials.

Organized crime figures who have diversified themselves into legitimate business involvements will continue to use "strong-arm" tactics to maintain control over competition. Certain industries, such as the garbage collection industry, the vending machine industry, and night clubs have attracted organized crime investments, and there has always been a notable amount of arsons which have been rumored and in some cases directly traced to the organized crime competition. Businessmen and union leaders associated with organized crime often use arson as a tool to protect their interests and power. "Arson might involve the burning out of a restaurant which would not install an organized crime jukebox or take its liquor supply... Arson is used as a ... warning or punishment."³

The investigation and prosecution of arson cases in which arson is used as discipline have always been difficult. First, the available physical evidence is usually minimal since most arson fires are set late at night when few witnesses can be found. Further, much of the physical evidence is usually destroyed during the fire. If witnesses are found, they are often intimidated by the organized crime element and are reluctant to testify. To solve these violent crimes, investigators must use sophisticated techniques such as informants, surveillances, consensual monitoring, court-ordered wire interceptions, and grand jury presentations utilizing grants of immunity. These are the most difficult

categories of arson investigations but investigators and prosecutors must realize the utmost importance and challenge that accompany proving these crimes and removing the fear, intimidation, and violence from our society.

Usually there are numerous "signs" or "flags" that will alert investigators to this arson to salvage a failing business. This insurance fraud is not something that is practiced on a routine basis and often the individual's inexperience and lack of knowledge regarding the system will often give away the motive. Investigators should look for the following signs as possible flags for arson committed to salvage a failing business:

1. BUSINESS LOSING MONEY

One of the most obvious reasons for business arson is to salvage a failing business. A review of business records, including records from suppliers and customers, will indicate a clear motive and substantial evidence for the arson.

2. BUSINESS IN A DECLINING NEIGHBORHOOD

Often the geographic locale of a business will have a direct effect on the success of the business. If the business area or highway has moved and the cost of relocation is prohibitive, the business owner may decide that it is easier and more profitable to have the business burned for the insurance proceeds.

3. SEASONAL BUSINESS

If a seasonal business (such as a restaurant or hotel) in a recreational area or a business that is dependent upon weather conditions is set on fire just after the end of the profitable season, investigators should look toward insurance fraud as a possible (or probable) motive. Often the greed of the owner will require him to obtain as much legitimate profit as possible, and when the season is declining, or dormant, he will then cause the arson. Often the motive of the businessman is to rebuild his facility during the off-season and reopen with a more modern establishment with the proceeds from the insurance policy.

4. INVENTORY OBSOLETE

Businessmen are often required to purchase inventory based upon needs that are projected several months ahead. Often styles change or needs are miscalculated, and when this occurs, the business is stymied by the obsolete inventory. When a businessman is holding merchandise he cannot sell, his financial ability to obtain replacement merchandise will also be restricted. Businessmen with unwanted merchandise often become desperate and see arson as a way to solve the difficulties.

5. CONFLICT BETWEEN BUSINESS PARTNERS

Often an inexperienced businessman will select business partners on the basis of a social rather than

business relationship. Often the partnership arrangements are extremely involved and it is most difficult for either party to back out gracefully. A fire, followed by a high insurance payoff, will often be the easiest and sometimes the only way to salvage the partner's individual interests.

E. INNERCITY ARSON

One of the most widespread and difficult types of arsons to prove is "innercity arson" for insurance fraud. Most major urban areas that have an "innercity" area have experienced "innercity arson." The exact scheme may be modified to meet the local conditions and the needs of the innercity arsonist. Due to the complexity of the scheme, this crime poses a special challenge to law enforcement. The classic pattern of innercity arson is as follows:

1. PURCHASE OF PROPERTY

(As an Investment; Rental Property)

Innercity real estate has always been considered an excellent investment. The inflation that has caused most investment properties to double and triple over the last ten years has had a much smaller impact upon innercity property, and the increase in rental income has added to the attractiveness of this investment. Most innercity real estate

investors can completely retrieve their initial investment in less than three years, not including the excellent tax advantage real estate investors can completely retrieve their initial investment in less than three years, not including the excellent tax advantage real estate offers. There is one catch, however, to making innercity real estate profitable--the landlord must maintain the building in a livable condition.

2. BUILDING BECOMES RUNDOWN

(Numerous Building Code Violations)

As long as the property investor keeps one step ahead of the building inspector, it will be a good investment, but once the building becomes rundown (due to neglect or vandalism, or for other reasons) and the building inspector starts issuing citations requiring repair work and court appearances, this innercity real estate investment will no longer be profitable.

3. SALE OF PROPERTY AT AN INFLATED PRICE

At this time a greedy property investor will initiate his scheme to "sell his property to the insurance company." In order to obtain the highest possible insurance policy, it is important to raise the "paper value" of the property. To facilitate this, the property may be sold to other

property investors or to willing associates at an inflated price. Usually the original owner will hold title and no money will change hands. Often this is accomplished through the use of a land contract. A recent Milwaukee innercity arson investigation established the trading of an innercity property and increasing the "paper price" from \$12,000 to \$40,000 in just three months.

4. INSURANCE OBTAINED

The new owner of the property (whether the true owner or in name only) will obtain an insurance policy based upon the new inflated value. Many of the policies will be based upon the higher "replacement value" rather than the lower market value. Often the insurance is obtained just prior to the time the property is set on fire in order to reduce the amount of insurance premium and to limit the time the insurance company has to inspect the property.

5. MORTGAGE LOAN OBTAINED

Often, when a property investor is conspiring to burn down one of his properties for insurance, he will obtain a bank mortgage based upon the inflated value of the property. The innercity arsonist wants to remove himself from the motive of the crime and will attempt to accomplish this by naming a bank as the beneficiary of the policy.

Additionally, by obtaining a mortgage prior to the arson, the innercity arsonist will obtain his profit "up front" in the form of mortgage money.

6. RELOCATION OF OCCUPANTS

It is important that all occupants are relocated prior to the time the arson fire is set. The purpose of this scheme is to collect as much from the insurance company as possible. Innercity arsonists do not want to cause high priority police investigations which will result if an injury or a death is caused by the fire. Additionally, it will be much easier for the arsonists to burn a vacant building where there are no witnesses and no one to immediately report the fire. Property investors, contemplating arson, will often temporarily move the tenants to another building using the pretext of renovation of the building. If the tenants are reluctant to move, their rents are sometimes doubled or tripled in order to encourage their departure.

7. PROPERTY STRIPPED

Property investors who would involve themselves in this type of criminal activity often give themselves away by demonstrating their greed in removing all valuables from the property before the arson is set. There are individuals in most

cities who would pay \$600 to \$1,000, for the privilege of being allowed to strip a building of all items, such as woodwork, plumbing, glass, lighting fixtures, and even the furnace. A Milwaukee Fire Department battalion chief testified at an innercity arson trial in 1977 that a building he was extinguishing was stripped to the extent that the staircase leading to the second floor was removed and the firefighters had to chin themselves in order to fight the fire.⁴

8. PROPERTY BURNED

Buildings are not always burned by a "professional torch." Setting a fire is not a difficult assignment and some property investors involved in innercity arson have been known to utilize the "handyman," a friend, relative, or anyone else with or without a criminal background who could use the extra money. Usually the common cost for hiring a "torch" is approximately \$500; however, this will vary depending upon the size of the building and the local conditions. Some property investors have been known to utilize a delinquent tenant to set the fire in lieu of back rent. Most innercity arson fires are set with a simple fuse (burning cigarette and matchbook) using gasoline as an accelerant. Since it is

important to cause a total loss (to collect the total insurance), usually there will be multiple origins of the fire. Additionally, most insurance adjusters will ultimately declare the property a total loss if the roof is destroyed.

9. INSURANCE CLAIM SUBMITTED

Soon after the fire, the building owner (who conveniently had an alibi at the time of the fire) will submit the insurance claim. Most individuals involved in innercity arson will not try to insinuate that the fire was an accident but will try to convince authorities that the fire was set by vandals, who are inherent to the "innercity."

10. INSURANCE CLAIM PAID TO THE BANK HOLDING THE MORTGAGE

To satisfy the outstanding mortgage on the property, the insurance company will pay the bank directly. The property investor involved in innercity arson will use this technique in an attempt to minimize his motive by contending that he never received any of the profits from the arson and that all the insurance money was paid directly to a bank. Actually, the property investor received his profit prior to the fire, at the time the mortgage was obtained.

F. STRATEGIES TO UNEARTH AND PROVE INNERCITY ARSON

Now that the innercity arson scheme has been

explained, it is equally important to set forth strategies with which innercity arson cases should be attacked and investigated. Unfortunately, it is extremely difficult to solve any arson based solely upon the available physical evidence. Usually an investigation must be conducted before it is even known that a crime was committed. Also, unfortunately, due to the lack of arson investigators (especially in the large cities), many fires are not investigated at all. There usually are no witnesses and the property investor who will benefit from the insurance fraud has established a secure alibi.

Fortunately, the evidence of criminal activities in an innercity arson case is not limited to the arson fire. To profit from arson fraud, those responsible will probably involve themselves in several other state and federal violations, such as insurance fraud, theft by fraud, bank fraud, mail fraud, fraud by wire, interstate transportation of stolen property, obstruction of justice, perjury, and several others. In addition, the Federal Racketeer Influenced and Corrupt Organizations (RICO) Statute includes arson as an act of racketeering. This violation has been utilized successfully to investigate and prosecute major innercity arson violators.

It is certainly possible to prove the arson fraud scheme without positive evidence linking the subject to

the fire scene. Investigators often are required to initiate arson investigation involving fires that are several months old on buildings that have since been razed. Investigators must review available information and reports to establish the identities of fires that have been included in this scheme.

While reviewing potential innercity arson fires, the following flags (clues) will indicate positive circumstantial evidence that the fire was set to perpetrate an insurance fraud.

1. Presence of incendiary material
2. Multiple origins of fire (Arson must be a total loss to be profitable.)
3. Location of the fire in a building (Look for fires started near the roof.)
4. Suspicious hours (less witnesses)
5. Holiday fires
6. Vacant building
7. Renovation of building
8. Recent departure of occupants
9. Removal of objects (woodwork, plumbing, and the like)
10. House for sale
11. Previous fire
12. Building overinsured
13. Habitual claimants

14. Fires occurring shortly prior to policy expiration
15. Fires where insurance has recently been obtained
16. Recent sale of building.

Beyond the use of these flags in the local criminal prosecution of arson cases, a federal statute, the Racketeer Influenced and Corrupt Organization Act, offers local prosecutors additional opportunities to control arson-related fraud and apply additional sanctions of a civil nature.

RICO - A FEDERAL TOOL IN FIGHTING ARSON

An emerging tool being more frequently utilized by local prosecutors is the federal Racketeer Influenced and Corrupt Organization statute, commonly known as RICO. While RICO generally applies federal criminal sanctions for proscribed activities that are not of immediate interest to Maryland State's Attorneys, it also provides civil penalties which local prosecutors may utilize to attack the crime of arson, particularly but not exclusively, arson for profit. Further, working with federal prosecutors on the federal criminal prosecution can prove valuable to both prosecutorial offices.

The specific provisions of RICO relied upon in these cases apply the concept of anti-trust civil remedies, including treble damages, equitable relief and making available civil suits to any injured party. While the general understanding is that RICO is principally aimed at organized crime, the scope of the statute is not limited to the traditional view

of organized crime, but includes any type of activity defined by the statute.⁵

By using RICO in arson for profit cases it may be applied not only to enhance the prison sentence, but to provide for the forfeiture of any interest in property acquired or maintained by violation of the statute. Civil remedies include treble damages, plus attorney's fees, divestiture, restrictions upon future activities and other financial penalties. Where effectively used RICO thus removes the economic incentive traditionally associated with arson for profit cases.⁶

RICO may be applied to any person, engaged in "racketeering activity" (such as a state crime punishable, as is arson, by imprisonment for more than one year, and certain federal crimes such as mail fraud) where a pattern of at least two acts occur within ten years of each other. Remedies for civil RICO actions may be preferable since proof of proscribed activities requires only a preponderance of the evidence, complaints may be more easily amended, wide-ranging discovery is available and summary enforcement is available. State's Attorneys may wish to consider RICO remedies also, because of the more lasting impact of the civil relief available, and since the State's Attorney may pursue a RICO action as a person on behalf of the jurisdiction served.

By way of background, RICO was seen by its sponsors as a way to stem the infiltration of legitimate businesses

by organized crime, remedy the inadequacy of standard criminal sanctions for on going, organized criminal activities and provide an effective alternative to stem the real motive of infiltration profit.⁹

RICO civil sanctions were made available to private parties, including state and local prosecutors as a way of encouraging its application. The definition of "person" in the statute for purposes of bringing an action is extremely broad:

"Person": 18 USC 1961(3): includes any individual or entity capable of holding a legal or beneficial interest in property.

Further, the range of prohibited activities covers wide territory:

Investment of racketeering income: 18 USC 1962(a) - "It shall be unlawful for any person who has received any income derived ... from a pattern of racketeering activity ... to use or invest, directly or indirectly, any part of such income, or the proceeds of such income, in acquisition of any interest in, or the establishment or operation of, any enterprise which is engaged in, or the activities of which affect, interstate or foreign commerce"

Control by means of racketeering income: 18 USC 1962(b) - "It shall be unlawful for any person through a pattern of racketeering activity ... to acquire or maintain, directly or indirectly, any interest in or control of any enterprise which is engaged in, or the activities of which affect, interstate or foreign commerce."

Conduct an enterprise: 18 USC 1962(c) - "It shall be unlawful for any person employed by or associated with any enterprise engaged in, or the activities of which affect, interstate or foreign commerce, to conduct or participate, directly or indirectly, in the conduct of such enterprise's affairs through a pattern of racketeering activity..."

Racketeering Activity: 18 USC 1961(1) -

- a. state crimes punishable by more than one year imprisonment for murder, kidnapping, gambling, arson, robbery, bribery, extortion or drugs.
- b. federal crimes specifically named, including mail fraud (18 USC 1341) - mail fraud is the federal criminal key to arson and important to local civil actions.

Pattern of Racketeering Activity: 18 USC 1961(5): requires at least two acts of racketeering activity

within ten years of each other.

- a. Arson profit: insurance payment, false insurance claim constitutes mail fraud (18 USC 1341). Thus each single arson almost invariably constitutes two acts of racketeering, arson in violation of state law and mail fraud in violation of federal law.

Enterprise - 18 USC 1961(4) - includes any individual, partnership, corporation, association, or other legal entity, and any union or group of individuals associated together in fact although not a legal entity.

- a. Includes a state, a police department, a gang or an arson for hired business.

Affecting Commerce - as a requirement of RICO provides the jurisdictional justification for the statute. In a complex economy such as ours virtually any act "affects commerce." This includes collection of insurance proceeds from an arson, from a company doing insurance business in two or more states.

¹ Adapted from materials prepared for the Aetna Life & Casualty Company and the California District Attorneys Association, 1981.

² National Advisory Committee on Criminal Justice Standards and Goals, Organized Crime: Report of the Task Force on Organized Crime (Washington, D.C.:GPO, 1976), p. 8.

³ Ralph Salerno and John Tompkins, The Crime Confederation

(Garden City, N.Y.:Doubleday and Company, Inc., 1969), pp. 234-5.

⁴ U.S. v. Hansen, Crim. No. 76-Cr-129 (E.D. Wis., February, 1977)

⁵ Bill Winter, "Federal Circuits at Odds over RICO Law," ABA Journal, December 1980, p. 1507.

⁶ Gregory A. Baldwin, "RICO: Application to Arson", Lecture prepared for Prosecution of Arson Cases Seminar, Ocean City, Maryland, September 1980.

CHAPTER V

SEARCH AND SEIZURE IN ARSON CASES

As noted previously, comprehensive fire scene investigation is essential to a successful arson prosecution. It is therefore imperative that the investigator is legally on the crime scene or the evidence collected may not be admissible at trial.¹

While as a general rule, a search warrant is required to search a crime scene,² entry without a warrant may be made under certain specified conditions. Firefighters can enter private premises to extinguish an ongoing fire under the doctrine of exigent circumstances.³ This right has been codified under Maryland statute. Firefighters, investigators and law enforcement personnel can also enter the premises after obtaining the consent of the owner.⁵ As noted above, insurance personnel have a contractual right to investigate fires, and under certain circumstances their findings may be made available to the prosecutor, since activities of private parties are not subject to the exclusionary rule.

A Fourth Amendment problem arises when arson investigators or other government officials enter the fire scene after the fire has been extinguished. The warrantless entry by investigators after the fire had been extinguished led to the 1978 landmark case of Michigan v. Tyler, which has resulted in a set of multiple restrictions on the warrantless

investigations of fires.⁷

In Michigan v. Tyler, the fire chief arrived at the scene of a nearly-extinguished fire at about 2 a.m. Two containers of flammable liquid had been discovered during the efforts to fight the fire, and they were brought to the chief's attention when he entered the still-burning building. Photographs of the containers and of the balance of the building were taken and, at 4 a.m., the investigators left with the two containers. The next morning investigators returned and discovered burn marks. They removed pieces of carpet, sections of the stairs and other items for evidence. On at least three other occasions (four, seven and twenty-five days after the fire) officials entered the building to search for and seize evidence. No consent to search or warrant was ever obtained.

The Court held that the warrantless searches made after the night of the fire violated Fourth and Fourteenth Amendment rights. The Court went on to attempt to set out when a warrant is required to investigate fires:

-- The initial entry into the burning buildings requires neither consent nor a warrant since firefighters and officials are there because of the existence of exigent circumstances,

--Once in the building the discovery and seizure of evidence while the fire is still burning is reasonable

and proper, under the plain view doctrine,

--Once on the premises, officials may remain for a reasonable period of time to investigate the cause of the fire. What constitutes "reasonable time" for officials to remain at the fire scene after extinguishing the blaze is unclear. Given the Court's preference for warrants, a reasonable time probably would not exceed 24 hours,

--Entries made after the emergency-related investigation must be made pursuant to a search warrant, or some established exception to the search warrant requirement such as consent.

--Finally, once officials have reason to believe that the fire was caused by arson, subsequent entries to gather evidence must be made with a search warrant supported by probable cause.

The Supreme Court itself summarized its holding in Michigan v. Tyler: "We hold that an entry to fight a fire requires no warrant, and that once in the building, officials may remain there for a reasonable time to investigate the cause of the blaze. Thereafter, additional entries to investigate the cause of the fire must be made pursuant to warrant procedures governing administrative searches.⁸ Evidence of arson discovered in the course of such investigations is admissible at trial, but if the investigating officials find probable cause to believe that arson has occurred

and require further access to gather further evidence for possible prosecution, they may obtain a warrant only upon a traditional showing of probable cause applicable to searches for evidence of crime."

Probable cause in arson cases can be established based upon the observations of witnesses such as police or firefighters at the scene of the fire, insurance investigators not acting under the direction of law enforcement personnel or other persons with knowledge sufficient to persuade the issuing judge that there is probable cause to believe the fire was arson.

It should be noted that in Tyler the Supreme Court distinguished between the re-entries made on the fourth, seventh and twenty-fifth days after the fire was extinguished, and entries made later than the day of the fire. The Court noted that fire officials have a statutory responsibility to investigate the cause of the fire to prevent its re-occurrence and the detection of continuing dangers. The Court continued, "immediate investigation may also be necessary to preserve evidence from intentional or accidental destruction. Of course, the sooner officials complete their duties, the less will be their interference with the privacy of and the recovery efforts of the victim." The Court held that the re-entries in these regards were simply continuations of the

initial entries justified by the exigent circumstances of the fire.

It should be noted that although there have been no Maryland appellate court decisions interpreting the Michigan v. Tyler doctrine governing fire scene searches, the Maryland Court of Special Appeals, in the case of Robinson v. State, 425 A.2d 211(1981), has approved a limited warrantless search of crime scenes under emergency circumstances. While that case involved a brutal stabbing resulting in the defendant being convicted of assault with intent to murder, the emergency doctrine exception to the warrant requirement recognized by the Court should be applicable to all criminal cases where similar circumstances are present. Prosecutors and investigators should therefore carefully review this decision so they may access its possible applicability to future arson cases.

¹ Michigan v. Tyler, 436 U.S. 499(1978), hereinafter cited as Tyler.

² Mincey v. Arizona, 437 U.S. 385 (1978) 98 S.Ct. 2408.

³ U.S. v. Hoffman, (9th Cir.) 607 F.2d 280.

⁴ Insurance companies have a contractual right and duty to investigate the causes of fires to their insured. So long as they do not become in effect an agent to law enforcement personnel (including firefighters) they are bound only by the terms of their contract with the insured and evidence they gather in that respect is not excludible under usual

exclusionary rule provisions. State immunity statutes also have opened up insurance company reports to arson investigators. See, Annotated Code of Maryland, Article 38A §57, for the duty of an insurer suspecting arson and the immunity from civil or criminal liability arising from the reporting under the statute.

⁵ Schneckloth v. Bustamonte, 412 U.S. 218, 93 S.Ct. 2041 (1973), Humphrey v. State, 39 Md. App. 484, 386 A.2d 1238 (1978).

⁶ n. 4, supra.

⁷ supra.

⁸ Administrative search warrants are not available in Maryland.

CHAPTER VI

PROSECUTION OF ARSON IN MARYLAND

At common law, the crime of arson was a willful and malicious burning of the dwelling house (or other building within the curtilage) of another person.¹ Maryland has extended and modified the common law definition and prescribed penalties in Article 27 of the Code, Sections 6 through 11: The statute provides penalties for and prohibits the willful and malicious burning (or aiding, counseling or procuring the burning) of:

--a dwelling house, kitchen, shop, barn, stable or other outhouse that is parcel to or belonging to the dwelling (regardless of the ownership of the property),²

--a barn, stable, garage or other building not a parcel of a dwelling house, or a shop, storehouse, warehouse, factory mill or other building,³

--a church, meetinghouse, courthouse, workhouse, school, jail, or other public building or bridge,⁴

--a barrack, cock, crib, rick, or stack of hay, corn, wheat, oats, barley or other grain or vegetable product of any kind; or any field of standing hay or grain of any kind; or any pile of coal, wood or other fuel; or any pile of planks, boards, posts, rails, or other lumber; or any streetcar, railway car, ship, boat, or other watercraft, automobile or other motor vehicle; or any other personal property of another person of the value of \$25 or more,⁵

--any wares, goods, merchandise or other chattels or personal property of any kind with the intent to defraud an insurer;⁶

-- any dumpster, or any other trash container or receptacle belonging to another person;⁷

- attempts to burn certain property,⁸ or;

- setting a fire while perpetuating another crime.⁹

The common law requirement that some actual burning take place remains, although the actual damage may come from the heat of the fire, from the smoke, or even as a result of efforts of firefighters rather than through the chemical process of combustion or oxidation.¹⁰ The extent of damage is not controlling so long as there is sufficient proof of actual fire damage. This principal was re-emphasised by the Court of Appeals in a recent case which held that where there was only evidence that "the place was full of smoke" there was insufficient proof of burning. The Court concluded that actual charring of the wood or damage caused by the fire itself must be shown.¹¹

Under Maryland statutes, one who aids, counsel or procures the burning is guilty of arson as a principal and is subject to the same punishment as though he actually set the fire.¹² Procedurally in Maryland, the count of burning and the count for aiding and counseling may be joined in the same indictment.¹³

Maryland law also imposes criminal liability for

willful and malicious attempts to burn certain property, and includes in the definition of attempt the placing of any flammable, explosive or combustible material or substance in such buildings or property in arrangements evidencing a malicious and willful intent to burn such building or property.¹⁴

While conviction for the crime of aiding, counseling or procuring the burning requires that an actual fire be set, the attempt provisions do not.¹⁵

In prosecutions for arson and related offenses in Maryland, the usual rules governing indictments generally are applicable.¹⁶

The Court of Appeals has held that the words of the statute defining arson are plain and unambiguous, that there is little or no room for construction and the words in the statute have the meaning naturally given to them in ordinary usage.¹⁷ Two requirements have given Maryland Courts considerable difficulty over the years:

--the requirements of "malice" which the Legislature never defined in the statute.¹⁸ Where nothing beyond the fact of burning appears, the Court has consistently held that the fire must be presumed to be natural or accidental in origin.¹⁹ The corpus delicti of arson, which the Court of Special Appeals has called "difficult to prove in arson cases"²⁰ requires an affirmative showing of willfulness and maliciousness in establishing the criminal agency of some

person who set the fire.²¹ Recognizing that proof of this corpus delicti in arson cases is usually difficult because of the clandestine nature of most arsons and the circumstantial proof in most cases, the Court has held confessions with only partial and slight collaborative evidence sufficient to prove malice and willfulness.²² A wide range of evidence to prove malice or motive has consistently been held admissible in arson cases.²³ The intent must be to burn a specific structure or property causing harm to a person or persons.²⁴ The offense does not require that the dwelling house be occupied or that the property be in use for the purposes mentioned in the statute, leading the court to hold that in Maryland the offense is one against the property, rather than against the security of habitation.²⁵

An indictment for arson must be sufficient to charge the crime and all its necessary elements.²⁶ It is sufficient to charge the statutory crime of arson or wrongful burning in the language of the statute, although it must be specific enough to identify the particular offense and distinguish it from all other offenses.²⁶ In other words, the defendant must be sufficiently apprised of the charge against him in order to prepare his defense.²⁷

Charges under those sections of Article 27 which require malice or willfulness will be defective unless the indictment charges that the act charged was committed maliciously or willfully.²⁸ The actual burning or damaging of the fiber

of the wood or other property, by fire burned must also be alleged.²⁹

One who was present, actually or constructively, aiding and abetting the setting of the fire or the burning, or causing the property to be burned, and who is therefore a principal may be charged as a principal and not specifically with aiding, counsel or procuring.³⁰

An indictment charging the burning of buildings not a parcel of a dwelling house must sufficiently describe the property claimed to have been burned and allege that the building is not a parcel of any dwelling house.

The indictment is not insufficient if it alleges ownership of the dwelling house in the real owner, irrespective of the occupancy of the building at the time of the arson.³¹ Beyond the nature of the property burned, which requires that the indictment charge an offense under the proper section the actual burning and its willful and malicious origin must be alleged and proven to establish the corpus delicti. Where only the fact that a structure was burned, and no willful and malicious act of some person criminally responsible is shown, the presumption is that the fire was caused by accidental or natural causes.³² The mens rea, or deliberate criminal intent of the accused must be alleged in the indictment and proven at trial.³³

Evidence of incriminating circumstances tending to show motive, malice or intent is admissible to prove this element

of the offense. A recent Court of Appeals case held that the requisite malice could not be inferred from the willfulness of the defendant's actions where the record was devoid of any evidence that he intended to do harm or did in fact harm others.³⁴ This restrictive interpretation given to the term "malice" is a significant departure from the common law and previous Maryland cases and should be considered by prosecutors in drawing indictments and preparing for trial.

The Maryland courts, however, have not been so restrictive in holding circumstantial evidence sufficient to connect the accused with the crime. Numerous cases holding that the defendant was sufficiently connected with the fire to establish his criminal agency even when he was seen at the fire location several hours prior to discovery of the fire have been held sufficient.³⁵ A case hinging on the identification of the accused as a "lady wearing a floppy brimmed hat" as the last person seen leaving the room where the fire started has been held sufficient to support the corpus delicti.³⁶

Evidence of inventory which was over-valued for insurance purposes has been held admissible,³⁷ as has a variety of other evidence of motive such as revenge, spite, and previous vandalism. Maryland courts recognize that the clandestine nature of arson may often require proof by entirely circumstantial evidence, including inferences which

may be reasonably drawn from the evidence as to malice and willfulness.³⁸ While there must be some corroboration of the testimony of an accomplice as to the identity of the accused as the perpetrator of the crime, it is not necessary for corroborating evidence to be sufficient in itself to convict, it need only support some of the material points of the accomplice's testimony.³⁹

¹ 4 Blackstone's Commentary 220, Perkins, supra. p. 217.

² Article 27 §6.

³ Article 27 §7G.

⁴ Article 27, §7, At common law, a church building was often considered a "house" in the sense of a dwelling house. See Perkins, pp. 216 ff.

⁵ Article 27, §8.

⁶ Article 27 §9.

⁷ Article 27, §9A.

⁸ Article 27, §10.

⁹ Article 27, §11.

¹⁰ Perkins, Chapter 3, p. 220, Fulford v. State, 8 Md. App. 270, 259 A.2d 551(1969), Hines v. State, 34 Md. App. 621, 368 A.2d 509(1977), Borza v. State, 25 Md. App. 391, 335 A.2d 142(1975).

¹¹ Hines v. State, supra.

¹² Butina v. State, 4 Md. App. 312, 242 A.2d 819(1968).

¹³ Wimpling v. State, 171 Md. 362, 189 A.2d 248(1937).

¹⁴ Ibid.

CONTINUED

1 OF 2

- 15 Chambers v. State, 6 Md. App. 339, 249 A.2d 152(1975).
- 16 Butina, supra.
- 17 Brown v. State, 285 Md. 469, 403 A.2d 788(1979).
- 18 In Brown v. State, supra, the Court of Appeals defined what "willful and malicious" means as employed in the statute. In this case, the defendant, an officer of Laurel Raceway, had been under pressure to have the old clubhouse demolished. The defendant arranged to have the building burned. He was convicted of being an accessory before the fact of an arson. The sole issue on appeal was whether the burning without a permit of an abandoned clubhouse was "malicious" within the meaning of the statute. The Court of Appeals held that where the Legislature has never defined "malice", the term should be given its ordinary and natural meaning which the Court found to be as having an intention or desire to harm another. The Court refused to infer malice from the willfulness of the defendant's actions where the record was devoid of any evidence that he intended to harm or did, in fact, harm others. This restrictive interpretation given to the term "malice" is significant and should be brought to the attention of prosecutors. But more recently the Court of Special Appeals (Debettencourt v. State, Md. App. _____, 1112 Sept. Term, 1980, filed April 21, 1981) included "reckless or wanton" disregard of the consequences of a dangerous act as within the mental element of malice required by Article 27 §6.
- 19 Brown v. State, supra.
- 20 Hughes v. State, 6 Md. App. 389, 251 A.2d 373(1969).
- 21 Ibid., See also List v. State, 18 Md. App. 578, 308 A.2d 451(1973).
- 22 Bollinger v. State, 208 Md. 389, 117 A.2d 913(1955).
- 23 Brown v. State, supra.
- 24 Ibid.,
- 25 Ibid., See also Wimpling v. State, supra.
- 26 Butina v. State, supra.
- 27 Wimpling v. State, supra.
- 28 Borza v. State, supra.

- 29 Hines v. State, supra.
- 30 Wimpling v. State, supra.
- 31 Ibid.
- 32 Hughes v. State, supra., Wimpling v. State, supra.
- 33 Brown v. State, supra., Nasim v. State, 34 Md. App. 65, 366 A.2d 70(1966), cert. denied 434 U.S. 868.
- 34 Brown v. State, supra.
- 35 Ibid.
- 36 List v. State, supra.
- 37 Borza v. State, supra.
- 38 Nasim v. State, supra., Brown v. State, supra.
- 39 Wright v. State, 219 Md. 643(1958) and Bollinger v. State, supra.

CHAPTER VII

TRIAL TACTICS

Once the evidence has been evaluated and the decision to charge made, the trial of arson cases is not substantially different from the trial of any other criminal case relying heavily on circumstantial and scientific evidence to support a conviction.

Recognizing, however, that the crime of arson is unique and often difficult to prove, some prosecutors have developed special trial tactics for arson cases. This chapter contains an outline of such trial tactics which was prepared by United States Attorney for the Northern District of Ohio. While all of the information contained in this outline may not be applicable in every arson case, or under specific statutes or rules of court, the outline should provide a convenient reference for Maryland prosecutors in preparing for the trial of arson cases.

INTRODUCTION

Why are arson cases so difficult to prove? What makes arson cases different from other cases? What can a prosecutor do to improve the rate of conviction in his or her jurisdiction? The answer to the last question depends on an analysis of the first.

The arson statutes are not complicated. The basic arson statute simply requires that the state must prove beyond a reasonable doubt that there was a fire; that the fire was intentionally set; and that the defendant and/or an identified

accomplice and/or a co-conspirator set the fire. As a practical matter, the prosecutor proves that a defendant set a fire by proving that he had the motive, means and opportunity to set it. There are four essential elements of proof: cause, opportunity, motive and means. If a property owner is charged with paying another person to commit the crime, additional evidence of the agreement is required.

There are two basic categories of arsons. Most arson fires are set out of vengeance. Other arson fires are set for profit. The type of evidence in vengeance cases and profit cases will be different. The evidence will also vary based on the type of building. The basic problems in proving the case are the same.

The "opportunity" problem is presented in most arson prosecutions. The obvious problem in apprehending arsonists is that witnesses rarely see them enter and leave the buildings they burn. Unlike armed robberies, there is no reason or opportunity for witnesses to observe the criminal in action. Some people who set vengeance fires do not care who sees them. Most people who set fires want to get away from the scene of the fire as soon as possible and set up an alibi. The time required for a fire to develop to the point where the fire will be seen and reported provides enough time for the arsonist to get away and create a "time gap" problem. The "time gap" problem is further complicated by the fact that delaying devices can be used to start the fire. In

addition, alibi witnesses often create a "time gap" problem.

Hopefully, investigators will find witnesses who can identify persons who were in or near the building before the fire was discovered. The gap in time between when the suspects were seen near the building and when the fire was discovered must be explained. There must be evidence that the fire could reasonably have been started when the suspects were in or near the building or there must be evidence that a delaying device was used.

It is rarely possible to prove that a suspect had the exclusive opportunity to set the fire. Defense attorneys can reasonably develop a theory that unknown intruders entered the building after the defendant left, and set the fire. Proving that the defendant and/or an identified accomplice and/or an identified co-conspirator had a reasonable opportunity to set the fire is the first step in proving the crime.

If a suspect had the opportunity to set the fire, the next question is did he have the means to set the fire. If it is determined that the fire was started by spreading gasoline, the question is how did the gasoline get into the building. If the suspects were not seen carrying anything into or out of the building and the owner of the building claims he or she kept no gasoline in the building, it will

be argued that the suspects who had the opportunity to set the fire did not have the means to set the fire.

Assuming that there is evidence that a suspect had the opportunity and means to set the fire, did the same suspect have a strong motive to set the fire? Motive is not technically an element of the crime; however, evidence or lack of evidence of motive is given great weight by jurors.

The setting of a fire is an inherently unreasonable act. Jurors expect more than slight evidence of motive. A suspect may have had an argument with a victim. It does not logically follow that the suspect would get even by burning the victim's building. Insurance alone on a building is not a sufficient motive.

The motive problem is further complicated by the fact that more than one person will have a motive to set a given fire. Other persons may be vandals. The prosecutor has the burden of showing that a defendant had a strong motive to set the fire and that other persons did not have an equal motive.

Every arson prosecution is premised on evidence that the fire was intentionally set and not accidental. Unless there is strong evidence that a fire was intentionally set, in some cases the cause of the fire is obvious. In many cases a defense attorney can develop a theory of the possible accidental causes of the fire.

Proving the cause of a fire is not like proving the cause of death in homicide cases. The opinion of an expert fire scene investigator is much more susceptible to impeachment than the opinion of a coroner in the average homicide case. The fire expert must present affirmative proof that the fire was set as well as evidence which eliminates all possible accidental causes.

Like the coroner, a fire expert can provide valuable corroborating evidence. If a "torch" testifies against a property owner and says that he set the fire by spreading gasoline in the stairway, the expert can determine where the fire was started and what accelerant was used. If a homeowner sets a fire to collect the proceeds from insurance on furniture which had been removed from the house before the fire, the expert can tell from the burn pattern whether or not the furniture was in the building at the time of the fire.

Unfortunately, the examination of the fire scene is often insufficient to eliminate all possible accidental causes and provide corroborating evidence. Because the setting of a fire is inherently unreasonable, jurors are concerned about exactly how the fire started. Jurors are homeowners; they may tend to identify with another homeowner who had a suspicious fire.

It is not uncommon for experts to disagree about the cause of a fire. This fact alone can create reasonable

doubt in the minds of some jurors. Jurors are also suspicious when the determination that the fire was set is made by an expert who is paid by an insurance company. Like all elements of the crime, causation must be proven beyond a reasonable doubt.

In purely legal terms arson cases are lost because there is a failure of proof on one or more elements of the crime. In practical terms, arson cases are lost because evidence was either not developed during the investigation or was not properly presented at trial.

Some of the problems which are frequently encountered in arson investigations and prosecutions are as follows:

I. THE INVESTIGATION

A. General Problems

1. A typical arson investigation will involve many persons. The fire fighters, the fire investigators, the police detectives, buildings inspectors, insurance personnel and others are involved developing the evidence of the crime. Because of the number of persons involved, an arson investigation is often fragmented and disjointed. There is often no clear plan or objectives for the investigation. There is no one person responsible for directing the investigation and meeting the requirements of a successful prosecution.

2. Arson prosecutions are unique in that the prosecutor bears not only the burden of proof but also the burden of disproof. The prosecutor must disprove that the fire was accidental. The prosecutor must disprove that other persons had the motive, means and opportunity to commit the crime.
3. Arson for profit cases combine the problems involved in street crimes, such as witness identification, and the problems involved in white collar crime, such as gathering financial records to prove motive.

B. Investigation of the Fire

1. The fact that a crime has been committed is not immediately apparent to the investigators. An arson fire is fought like any other fire. The firefighters are more concerned about extinguishing the fire than developing evidence of a crime.
2. The scene of a fire is not like an ordinary crime scene. The fire itself may destroy some evidence of the crime. The process of fighting the fire may destroy some evidence. After the fire is extinguished, the focus of attention is on cleaning up the fire scene and

securing the building. The owner of the building may be permitted to enter the building and remove items which may be evidence of the crime.

3. Fire investigators do not treat the scene of a fire the way crime scene investigators treat the scene of a homicide. The fire investigators will be concerned with the evidence that the fire was set and not with "trace" evidence such as fingerprints which could connect a suspect to the crime scene.
4. The fire investigators conduct the inspection after debris has been removed, thus preventing the expert from giving testimony about the lack of accidental causes.
5. Fire investigators may not take photographs or pull samples for chromatographic testing if their examination of the scene convinces them of the cause of the fire.
6. Information about the chain of evidence may not be recorded.
7. Fire investigators may commit Fourth Amendment violations when reentering a building.
8. There may be conflicting expert opinions about the cause of the fire.

C. Investigation of Suspects

1. The investigation of suspects will usually not begin until the cause of the fire has been determined. This delay often results in the loss of valuable time. With the passage of time witnesses will be less reluctant to come forward.
2. Frequently the owner and tenants of the building are not thoroughly interviewed. The owner and tenants of a building are the most direct source of information and records concerning the building, and who would have the motive, means and opportunity to burn it.
3. The motive for setting the fire is not immediately apparent to the investigators and the evidence of motive is not developed.
4. Many police departments do not have the manpower to conduct a thorough investigation and develop evidence of conspiracy.
5. Indices are not available to cross-reference evidence of insurance fraud.
6. Evidence which would corroborate the statements of accomplices is often not developed.
7. Evidence rebutting a suspect's alibi is often not developed.

8. Arrests are sometimes made prematurely.

D. The Prosecution

1. The grand jury is not adequately used to collect records.
2. The prosecutor does not adequately provide guidance to the investigators concerning the types of evidence which will be required and how to obtain it.
3. Because few arson cases go to trial, many prosecutors lack experience with the special problems involved in proving arson. There is very little resource information available to assist new prosecutors to prepare for arson cases.
4. Defendants are often prematurely indicted and under-indicted.
5. Requests for discovery are not answered with complete witness lists and exhibit lists.
6. Expert witnesses are not properly prepared to testify at trial and utilize the physical evidence.
7. Accomplice testimony is not developed and corroborated.
8. Motions for directed verdicts are not adequately answered.
9. Rebuttal evidence is not anticipated.

These are some of the problems investigators and prosecutors encounter in proving arson cases. With proper investigation and prosecution the problems can be overcome.

OPENING STATEMENT

The opening statement in an arson case provides a unique opportunity to persuasively communicate information to the jury. The fragmented process of direct examination does not lend itself to persuading people about the ultimate issue of guilt. A good opening statement will lay the foundation for the evidence and for final argument.

Some prosecutors are of the opinion that opening statement is a good time to get in the hearsay and opinion evidence which connects the case together. It is improper to refer in opening statement to evidence which will not be admitted into evidence during the trial. However, in opening statement the prosecutor can talk in conclusory terms about what the evidence, both direct and circumstantial, will prove.

The following are some of the goals of an effective opening statement:

1. To present a clear concise outline of the case with emphasis on names, dates and locations;
2. To create an impression of confidence without overstating or misstating the facts;
3. To personalize the state's case and the witnesses while depersonalizing the defendant and his or her case;

4. To "show case" the strong evidence of guilt and minimize the impact of the weak evidence;
5. To explain the theory of the scientific evidence in a manner that the jury will understand; and
6. To create enough interest in the case to cause the jury to want to hear the evidence.

The following techniques of opening statement can effectively be used in opening statements of arson cases:

1. Apply the rule of primacy: People remember best what they hear first and last. A prosecutor who wants to be persuasive does not begin by asking the jury to disregard what he or she is about to say.

When the prosecutor stands up to make his or her opening statement the jurors are primed to hear about why they should send another human being to prison. They should be rested and receptive. They have just heard the judge explain that what the attorneys say is not evidence. They know that the prosecutor is an advocate and will put everything he or she says in that context. The moment is ripe for the prosecutor to get into the facts. Many prosecutors begin by going to great length to explain that what they have to say is not evidence. Such a statement dilutes the persuasive impact of opening statement.

A prosecutor should start strong. If possible, the first sentence should summarize the crux of the case. For example, a good opening line in an arson-for-profit case would be: "This is a case about fire. A fire which the defendant paid someone to set in a house he owned for the purpose of collecting the money from the insurance policy." What the jury should remember best should be said first.

2. Use the "story book" technique. Talk about what happened the way a novelist would describe the event. A proper use of this technique will make the case interesting and understandable for the jury. It can also have the effect of personalizing the people involved and having the jurors identify with them. For example: "At about two o'clock in the morning of August 24, 1979, John Smith was driving home from his job at the Holiday Inn. He was tired and listening to the radio. When he was stopped at the corner of West 25th and Howard he saw flames coming from a furniture store on the corner and saw a young man running away from the store on Howard Street."
3. Use the "play back" technique: The goal of the entire trial is to have the jury reach the same

conclusion the investigators reached. If the evidence is disclosed to the jury in the same sequence that it was developed during the course of the investigation, the jury can appreciate how and why the investigation was conducted in the manner that it was. Start with the discovery of the fire and work it back.

4. Use simple language: Opening statement is not a pleading or contract. Prior means before. Subsequent means after. Proceed means go to.
5. Use opening statement to explain the principles behind the expert and scientific testimony:
Explain how a fire scene investigator determines the origin and cause of a fire. Explain the principle behind gas chromatography.
6. Use opening statement to explain insurance company procedures and how it was possible for the defendant to acquire insurance and be paid for a fire which was obviously set.
7. Use opening statement to explain any plea bargains which were given to state's witnesses.
8. Read the indictment at the close of opening statement and explain any peculiar elements. The only technical requirement for opening statement is that the prosecutor say that the state will prove every element of the crimes stated in the indictment.

9. Bait the defense attorney into giving a complete opening statement. If the defense attorney commits himself or herself to one theory of defense, the prosecutor can frame his or her case accordingly.

EXPERT TESTIMONY

One of the unique aspects of an arson trial is the use of the fire investigator and chemist as expert witnesses. In regard to the testimony of fire investigators, the following questions often arise:

1. Who is qualified to testify as an expert?
2. What are the essential questions which must be asked of the fire investigator and what are the limits?
3. How do you prepare the fire investigator to testify?
4. When should the fire investigator be called to testify?

QUALIFICATION AND COMPETENCE

A person who is experienced in determining the cause and origin of fires is competent to testify and give his or her opinion about the cause and origin of a fire.

The question of how experienced or how much training a fire scene investigator must have before he or she is competent to testify as an expert is open to some argument (see 88

ALR.2d 230, 253). There is no reported case which defines, in terms of minimum number of investigations or an amount of training, which an investigator must have before he or she will be permitted to testify. The issue of the competence of an expert is a matter for the trial court to decide. The trial court has great discretion in making that ruling. In the vast majority of arson cases the competence of an expert will not be an issue. Most fire scene investigators have considerable experience as fire fighters and some seminar training even before they investigate their first fire.

SCOPE OF DIRECT EXAMINATION

The questions which must be asked of a fire investigator fall into the following categories:

1. Introduction and qualification;
2. Questions about the investigation of the fire scene and the facts which are the basis for the expert's opinion about the point of origin of the fire;
3. "The" question about the expert's opinion of the origin;
4. Questions about the facts which are the basis for expert's opinion about the cause of the fire;
5. "The" question about the expert's opinion of the cause of the fire;
6. Questions relating to the identification and authentication of photographs, samples and other exhibits;

7. Questions relating to chain of evidence;
8. Other hypothetical questions which are within the scope of the expertise of the expert.

The qualifying questions must be asked first. The information about the expert's experience is important for the jury to know, but it is the facts upon which the expert bases his opinion which is the crucial information for the jury to hear and remember. According to the rule of primacy, people remember best what they hear first and last. The object is to get through the qualifying questions quickly and thoroughly. The questions which need be asked and answered are as follows:

1. Sir, will you tell us your name, please and spell your last name for the court reporter?
 - A. John Smith
 - Q. What is your profession?
 - A. I'm a fire scene investigator (or an arson investigator) and a member of the Fire Marshal's Office.
 - Q. What are your duties and responsibilities?
 - A. I investigate the scenes of fires to determine where a fire started and what caused the fire.
 - Q. Do you have any special training or experience that qualifies you to perform these duties?

There need be only the one qualifying question. The

prosecutor and the expert should agree in advance on how the question should be answered. Some experts tend to be vague about the number of fires they have fought, the number of fire scenes they have investigated, and the training seminars they have attended.

A good answer to the qualifying question will include the following:

1. The approximate number of fires the investigator has fought.
2. The approximate number of fires the investigator has investigated.
3. The major seminars and training schools the investigator has attended.
4. Courses taught by the investigator, articles written, professional journals the expert reads on a regular basis, memberships in professional organizations.

The goal is to not allow the expert to be either boastful or shy and to get through the qualifying questions quickly. It is not good practice to accept a stipulation concerning the qualifications of an expert. In addition to the qualifying question, it is also good practice to ask a few background questions about the organizational structure of the investigators department.

Also, by way of introduction and background, it is good practice to ask the expert to explain the theory of fire scene investigation. It is sufficient to ask:

Q. Sir, would you tell us what is meant by the terms origin and cause?

A. Origin means the location where the fire started. Cause means how the fire started. There are two basic causes of fires; accidental causes which includes fires started through human negligence and carelessness; and incendiary cause, which means fires which are intentionally set.

Q. How are you able to determine the cause and origin of fire?

A. The point or area of origin of a fire can be determined by inspecting and following the burn patterns which are left on the floors, walls and ceilings of a building to the lowest point of burning and the point or points where the burning has been most severe. The point or points of origin must be closely examined for any indications of either accidental or intentional cause.

The substantive testimony of the expert about what he or she saw and did requires the application of the standard rules for good direct examination. Have the expert explain, step-by-step, what he or she did and saw. Establish the facts about the point or points of origin before proceeding to the questions about the cause of the fire. If the foundation is laid that the point of origin was at a particular location, the evidence about the lack of accidental causes at the point of origin will

logically be more easily appreciated and understood by the jury.

The questions which call for the expert to give his or her opinion about the origin and cause of a fire often present problems. The problems relate to the factual basis for the expert's answer. The rules are as follows:

1. An expert opinion may be based solely on the personal observations and experience of the expert.
2. An expert opinion may also be asked to give an opinion based upon facts which are in evidence in the trial of the case in question.
3. An expert opinion may not be given which is based on the expert opinion of another expert who has not testified or upon other hearsay information.

A fire investigator will typically base his or her opinion, in part, upon what other persons have told him. For example, the fire investigator may base his or her opinion, in part, upon what the chemist at the lab said about the results of a chromatographic test. The fire investigator may also base his or her opinion on the fact that the gas and electricity in a building had been turned off at the time of the fire. If the fire investigator had learned about the gas and electricity being turned off from a clerk at the utility company, this would be hearsay. It is more common for the expert to simply testify that his or her opinion is based, in part, on what he or she learned from reading police and fire department reports. This is another example of basing

an opinion on hearsay.

The hearsay problem can be avoided if the expert is called to testify after the other witnesses who have supplied the hearsay information. The prosecutor would then include in his or her question which asks for the expert's opinion all the facts which the other witnesses have testified to and which contributed to the expert's conclusion. For example, the opinion question could take this form:

Q. Sir, based on your training and experience, your examination of the scene of fire and the following assumptions, I will ask you whether you have an opinion based on a level of scientific certainty of the cause of the fire. First, assume that the sample you scraped from the west wall was found to contain the vapors of gasoline. Next, assume that the gas and electricity had been turned off before the fire. Finally, assume that no gasoline or gasoline powered equipment was stored near the point of origin. Based on those considerations, do you have an opinion about the cause of the fire?

A. Yes

Q. Tell us what it is.

A. . . .

If the assumed facts were in evidence by virtue of the testimony of other witnesses, the question would be proper.

This example is not the type of simple and concise question which prosecutors like to use. However, this form of the question may be required if the defense attorney knows the rules of evidence.

A more complicated problem is presented when the chemist who performed a gas chromatograph test on a sample from the fire scene testifies. His opinion about the presence of gasoline in the sample is based on a comparison of the profile from the test to the profile for gasoline supplied to him or her laboratories. The chemist is stating an expert opinion based on the opinion of another expert, or at least upon the hearsay information contained on the profile from the laboratory. Fortunately, an expert is allowed to refer to a scientific treatise to corroborate his opinion. A standard chromatographic profile, whether or not it is contained in a book or collection of standard profiles, should qualify as a scientific treatise for the purposes of a chemist's testimony.

The use of photographs and diagrams to illustrate the expert's testimony about the point of origin of the fire is essential to meet the State's burden of persuasion. The jurors will understand the significance of a photograph if the expert is allowed to show them the photograph and describe it while he or she is testifying. For example, a picture of a wall which has been burned looks like a black wall. A fire investigator may be able to explain to the jury that on

the black wall is a burn pattern caused by gasoline.

The admission of photographs into evidence and the use of photographs during the trial are matters which are left to the sound discretion of the court. The only firm requirement for the admission of photographs into evidence is that they fairly and accurately represent a matter in controversy.

Other questions are often asked of an expert for the purpose of corroborating or disproving a theory of how the fire started. Most often the expert cannot answer the questions. A fire investigator cannot determine how long a fire had been burning before it was extinguished. Experiments can be performed in a laboratory which can demonstrate how much heat a material must be exposed to in order for a certain depth of char to result. For the most part, these experiments are too inconclusive to provide an expert with enough information to form an opinion about how long a particular fire burned.

Experts are also often asked if a delaying device could have been used to start the fire. On issues of causation, an expert opinion must be based on probability rather than possibility. Accordingly, most judges will not allow questions about delaying devices when the remains of the delaying device were not found. However, a recent California case would allow an expert to affirmatively testify that it is his opinion that a delaying device was used. If there are facts which would support such an inference, the testimony

should be allowed (see People v. Sundlee, 70 Cal. App.3d 477, 138 Cal. Rptr. 834).

The timing of an expert's testimony can present a problem. The general rule is that there must be evidence of the criminal agency, the corpus delicti, before evidence is presented concerning the defendant's guilt and motive. Seemingly, the expert should be one of the first witnesses. However, if the expert bases his opinion on facts which must be in evidence before he or she testifies, the expert should be called later in the trial. Most judges can be convinced that the evidence that there was a fire which was of suspicious origins is enough evidence of the crime to allow the expert to be called later in the trial.

FINAL ARGUMENT

During every stage of the trial, the prosecutor and defense attorney are laying the foundation for the final arguments. In arson-for-profit cases the prosecutor must lay the foundation to persuasively argue the weight of the circumstantial evidence, the credibility of the accomplice testimony, and the proper application of the reasonable doubt standard.

A prosecutor should never apologize for using circumstantial evidence. Circumstantial evidence is often more reliable than eyewitness testimony. Circumstantial evidence does not rely on the eyesight or memory of witnesses. An unbroken chain of circumstances and events which are connected together

by the defendant is the best evidence of guilt.

The testimony of an accomplice is only as good as the evidence which corroborates what the accomplice said. A prosecutor can make a list of how every fact testified to by the accomplice was corroborated by other evidence. The fact that the accomplice is the defendant's friend and associate and not a friend of the state should be stressed. The state does not select accomplices to be witnesses; the defendants do. The truth does not belong to anyone. The truth of what happened in a case is known to people who have first knowledge of the crime. An accomplice is one of those persons. If the testimony of an accomplice is corroborated, it should be believed.

Defense attorneys will attempt to narrow the issues in a case to the proposition that the jury must believe the accomplice in order to convict. The defense tries to focus the attention of the jurors on the accomplice and turn the trial into a popularity contest between the accomplice and the defendant. The prosecutor must focus the attention of the jury corroborating evidence and the fact that the accomplice is the defendant's friend. Defense attorneys sometimes argue that the accomplice committed the crime without the involvement of the defendant. In such cases the prosecutor must stress the defendant's motive.

Reasonable doubt is the "bottom line" in any case. Many jurors equate reasonable doubt with certainty. A

prosecutor should never apologize for not proving the defendant's guilt to a certainty. Nothing in life is certain. Using the example of a person who must decide whether or not to have surgery performed on a family member is a good way to put the issue in perspective. Common sense and logic will dictate what is most reasonable and probable but not what is certain.

Some defense attorneys use the line that jurors should not "guess the defendant into prison". The application of common sense and logic to a problem is not guessing. Other defense attorneys will use the technique of rhetorical questions and ask the jury whether various conclusions are reasonable. A good response to the line of argument is that the commission of a crime is inherently unreasonable and that in committing crime people do unreasonable things which cause them to get caught. If people only committed reasonable crimes in a reasonable manner, the courthouse would be one story tall instead of five stories.

Final arguments in arson cases require the prosecutor to effectively argue the evidence of motive. The setting of a fire is an inherently unreasonable act. If the fire was set out of vengeance, the prosecutor must discuss the potential for people to take out their frustrations in a destructive manner. If the motive is profit, the prosecutor must argue that people will do many things for even a small amount of money.

Above all, the prosecutor must make the jury aware that

crimes are committed in a manner to conceal guilt and the evidence of guilt. If common sense and logic are not applied to the evidence of guilt, the jury system will not function to defend and protect.

Final argument is a skill which develops with time and experience. Every prosecutor has his or her "lines" for final argument. Some excellent final arguments weave the facts into the law. In order to do this, the prosecutor must know exactly how the court will instruct the jury.

Prosecutors should therefore review and be familiar with standard arson jury instructions so that the State's closing argument includes all relevant evidence necessary to support a conviction.

APPENDIX

The following series of "profiles" was designed to assist prosecutors in evaluating the evidence obtained during the course of an arson investigation, to ensure that this evidence is sufficient to support a conviction for the crime charged. In addition, these profiles which, were originally developed by the United States Attorney for the Northern District of Ohio, provide a check list for the assembling of relevant information necessary for the trial of the case. Much of the information can be provided by the owner of the building, while the balance can usually be obtained by reviewing fire and police department offense reports, or insurance company and courthouse real property records. In some cases, firefighters, and arson investigation personnel should be personally interviewed by the prosecutor when adequate information is not available from such reports or records.

PROFILE OF THE FIRE AND INVESTIGATION CHECKLIST

I. The Fire

A. Discovery of the fire:

1. When was the fire reported?
2. Copy of the phone log or tape recording which is evidence of the report and the time it was made?

3. NAP* of dispatcher who received the report?
4. NAP of the person who reported the fire?
5. Statement of person who reported the fire?
6. If the person who reported the fire was not the person(s) who first discovered the fire, what are their NAP's and their statements?
7. Was there any delay in the fire being reported? Why?

B. Fighting the fire:

1. NAP of the first firefighter on the scene?
 - a. When did he or she arrive?
2. Statement of the first firefighter on the scene concerning:
 - a. Location of the flames?
 - b. Color of the flames and smell of the fire?
(Note: because so many materials are made from petroleum products this information is of little value.)
 - c. Intensity of the fire?
 - d. Rate at which the fire spread?
 - e. How entry was gained into the building by firefighters?
 - f. Any special problems in fighting the fire?
3. NAP of firefighter who checked the building for previous forced entry?

*NAP = Name, Address, Phone

- a. Was there such evidence?
4. When was the fire extinguished?
5. Copies of all reports made by all firefighters involved in fighting the fire?
6. Copy of the Basic Incident Report?
 - a. NAP of person who prepared it?
7. What was the preliminary determination of the cause of the fire?
8. Was the owner of the building at the scene of the fire?
 - a. When did he/she arrive?
 - b. What did he/she say? NAP of persons he or she talked to?
9. NAP of persons who were permitted to enter the building after the fire was extinguished?
10. Was any physical evidence taken from the scene?
11. Were any photographs taken of the fire in progress?
12. Was anyone especially helpful at the scene?
13. The owner:
 - a. NAP of the person who notified the owner?
 - b. How did the owner react to the news of the fire? What did he or she do and say?
 - c. Did the owner go to the scene of the fire? What did he or she do and say at the scene of the fire?

II. The Investigation

A. NAP of fire investigators who investigated the origin and cause of the fire?

B. When did the investigators conduct the inspections?

C. Determination of point(s) of origin:

1. NAP of expert(s) who determined the point(s) of origin?

2. Copies of their reports?

3. Photos of the scene?

4. Diagram of the scene?

5. Where was the point of origin?

6. What are the fact upon which the expert reached his or her conclusion about the point(s) or origin?

a. ie. What was it about the burn patterns and degree of damage that caused the expert to reach his or her opinion?

D. Determination of cause:

1. NAP of experts who determined that the fire was incendiary in origin? Copies of their reports?

2. Facts which were the basis for the expert's opinion?

a. Burn patterns indicating:

1) A liquid accelerant was used to start or spread the fire?

2) An accelerant or other flammable materials were as "trailors" to spread the fire

from one part of the building to other parts?

3) Multiple points of origin?

4) Flammable materials were piled up at the point(s) or origin?

5) Were there explosions of flammable vapors?

b. If the expert concludes that a flammable liquid was used to accelerate the fire, what is the basis for that conclusion?

1) Rapid spread of the fire?

2) A narrow "V" burn pattern at the point of origin?

3) Use of hydrocarbon indicator (sniffer)?
NAP of person who used the sniffer?
The reading?

4) Gas Chromatographic testing?

a) Type of samples taken for testing?
ie. scrapings from a wall, loose debris, etc.

b) Specific locations where samples were taken from (show on diagram)?

c) Type of containers the samples were placed in?

d) NAP of all persons needed to establish the chain of custody?

- e) NAP of chemist who performed tests?
- (1) Copy of his or her report?
 - (2) Copy of the chromatograph?
 - (3) Copy of the chromatograph which was used as the comparison?
- c. Location of the point(s) of origin:
- 1) Was the point(s) of origin in a place which was susceptible to do a maximum amount of damage?
 - 2) Were there holes in the wall for gasoline to be poured into?
- d. Evidence of the means of ignition:
- 1) Any physical evidence of how the fire was started including: appliances left on; candles left burning; gas lines opened; fuse box or furnace tampered with; timers; molotov cocktails (broken glass); telephone or other remote control device; and/or pilot lights from stove or water heater?
 - 2) If there is no firm evidence of the means of ignition, what is the most probable means of ignition?
- e. Elimination of accidental causes. Why were the following accidental causes eliminated:
- 1) Human carelessness: Children playing with

matches; smoking; careless storage of flammable liquids and machines that use them.

- 2) Faulty equipment: Heating or cooking equipment which is defective, improperly installed or maintained; electrical wiring and installations; gas leaks and uncoupled gas lines (were the threads on the coupling stripped?)
- 3) Natural causes: Spontaneous combustion resulting from the heat of the sun, a heater or a large light bulb on rags or papers; sparks or flames from outside the building; lighting; friction sparks from metallic surfaces.
- 4) Animals: Pets knocking over electrical appliances, rats chewing on matches.

E. Other investigation:

1. Evidence of lack of evidence of forced entry?
 - a. Any pry marks on doors or window?
 - b. Any broken windows? Was the glass inside or outside of the house?
2. Evidence of an explosion? Were glass and debris found far from the building? Did witnesses hear an explosion?

3. Any evidence that the building was prepared to burn?
4. Any evidence that furniture and other property had been removed before the fire? Were items of personal or sentimental value left in the building?
5. Was an inventory made of the property in the building?
6. Were pipes and fixtures removed before the fire?
7. Any evidence of vandalism such as the random destruction of furniture?
8. Any evidence that the fire was set to cover up another crime?
9. Any trace evidence taken and compared?
 - a. Fingerprints: Any attempt to dust? Any prints lifted? Against whose prints were the recovered prints compared? NAP of the persons who lifted the prints and made the comparisons?
 - b. Any paint, glass, soil, fibers, or tool marks taken for comparison?
10. Were photographs taken?
11. Were the owner and other witnesses interviewed by the investigators? What did they say?
12. Evidence of recent occupancy:
 - a. Was the gas and electricity turned on in the building at the time of the fire?

- b. Were there current newspapers or recently post marked letters in the building?

PROFILE OF THE BURNED BUILDING

I. Ownership

A. Who is the owner? NAP?

1. What is his or her financial interest in the building?

B. What other persons have a financial interest in the building? What interest do they own?

II. Sale and Purchase

A. When was the building purchased?

B. Who was the seller? NAP?

C. Who was the real estate agent? NAP? Copy of purchase agreement?

D. How was the property conveyed? ie. land contract; quit claim deed; warranty deed; mortgage deed; through the sale of the assets of a partnership or corporation?

1. Is the instrument of conveyance recorded? Copy?

2. Dates of filing?

E. Terms of payment?

1. Amount of down payment?

2. Amount of monthly payments? Paid to Whom?

3. Copy of conveyance fee form from auditor?

F. NAP of title company, escrow agent, and attorneys involved in the transfer?

1. Was an appraisal made at the time of sale? Copy?

G. Terms of mortgage?

H. Previous sales of the building?

1. When did the seller purchase the building? How much was paid?
2. Any evidence of sale and resale for the purpose of "kiting" the value of the building for insurance purposes?

J. What is the relationship between buyers and sellers?

III. Current Status

A. Are the monthly mortgage or land contract payments current? If in arrears, how much? Copy of receipts?

B. Property taxes

1. How much are the taxes (an indicator of actual value)? Are they paid up to date? How much in arrears?

C. Are the utility bills paid?

D. Are there any law suits pending concerning the property? Case name and number?

1. Have there been any law suits concerning the property? Case name and number?

E. Are there any liens on the property? IRS, property tax, mechanics liens, etc.

F. Is the property in foreclosure?

G. Have any zoning changes been proposed for the area?

H. Has the building been up for sale recently? What was the asking price? What were the bids? NAP of bidders?

IV. Physical condition of the Building

A. Where there any defects in the building before the fire?
ie. erosion of the foundation, storm damage roof, etc.?

B. Description and dates of all repairs and improvements made on the property in the last two years? Copies of receipts?

1. Description of all repairs and improvements which were planned before the fire? Copies of estimates?

C. An inventory from the owner of all furniture and valuable property in the building at the time of the fire?

1. Compared to an inventory of property in the building at the time of the fire as prepared by the fire investigators.

D. A diagram prepared by the owner of where furniture, appliances, flammable materials, gasoline powered equipment, and telephones were stored at the time of the fire? Comparison to photos of the scene?

E. What furniture or property was removed from the building before the fire? What was removed after the fire?

F. Did the owner or anyone else report problems with any gas or electrical appliances before the fire?

1. Were the gas and electricity turned on at the time of the fire? Copies of company records?

G. Building and housing inspections:

1. When was the last inspection conducted?
2. Who was the inspector? NAP?
3. Copies of all inspections?
4. Were there any housing or building code violations?
5. Was the building condemned? When? By whom?
6. Was the building scheduled for demolition? When?

V. Tenants

- A. Was the building rented or vacant at the time of the fire? NAP of tenant?
- B. Was there a written lease? Copy? What were the terms?
 1. Were payments current?
 2. Was there a sublease?
- C. Was the building used for residential or commercial purposes?
 1. What was the commercial use?

VI. Loss History

- A. Had there been previous fires in the building? Copies of reports? Status of investigation?
- B. Had there been fires in nearby buildings? When? Where? Cause? Reports?
- C. Had there been burglaries in the building? When? Reports?
- D. Had there been burglaries in nearby buildings? When? Where? Reports?

INSURANCE PROFILE

I. General.

- A. Was the building insured?
- B. NAP of insurance company(s)?
- C. Who was to be paid in the event of loss?

II. Applications.

- A. NAP of agent who sold the policy(s)? Relationship of agent to the insured?
- B. Were written applications prepared? By whom? Copies?
 1. NAP of all companies with whom application was made?
- C. Was inspection made of the property by any inspector from any company before the issuance of the policy(s)? NAP of the inspector? Copies of the reports?

III. The Policy(s).

- A. Copy of the policy(s)?
 1. NAP of person who approved the issuance of the policy(s)?
 2. Was a binder issued before the policy?
- B. What are the effective dates of the binders and/or policies?
- C. What are the limits of the policy(s)? How was the level of insurance determined?
- D. Who was to be paid in the event of loss?

IV. Claim(s).

A. Was a written notice of loss given? By whom?

To whom? Copy?

B. NAP of public adjuster hired by the insured?

Copies of his or her reports and correspondence?

What is the relationship with the insured?

C. NAP of private or company adjuster hired by the company? Copies of reports and correspondence?

D. Copy of proof of loss statement? Prepared by whom?
Mailed to whom?

1. Any material misstatements in proof of loss?

2. Evidence of false statements?

E. NAP of private investigator hired by company? Copies of reports?

F. Has the insured given a statement or desposition to the insurance company? Copy?

G. Has the claim been approved or disapproved?

1. NAP of person who approved the claim?

2. By whom and to whom were checks in payment mailed?
(for mail fraud purposes)

3. Copies of checks, front and back?

V. Suspicious Circumstances

A. What was the difference in the amount of contents and

building insurance as compared to:

1. Sale price as reflected on the conveyance tax

form and what the seller says the sale price was.

2. Property tax value.

3. Sale price of like and similar property.

4. Appraised value in recent appraisals (Note:

the above comparisons include the value of the land).

B. When was the level of insurance raised?

C. Did the insured call the agent before the fire and ask questions about the policy?

D. Did the building burn when the buyer and seller had insurance on the building?

E. Did the insured have insurance with more than one company? (nothing wrong with this per se)

G. Was the policy about to be cancelled? Why?

H. At what level was the building insured by the previous owners?

I. What was the loss history of the insured?

VI. Same Information Should Be Collected Concerning Contents Insurance.

MOTIVE PROFILE - POSSIBLE THEORIES WHY THE FIRE WAS SET

I. Owner's or Tenant's Motive.

A. Insurance related motives (compare to Insurance Profile):

1. Was owner grossly over insured?
2. Owner had double insurance from two companies?
3. Owner, in collusion with another person, had double insurance as a result of a fraudulent purchase contract?
4. To collect the insurance proceeds on commercial inventory that could not be sold or was over valued?
5. To collect the proceeds on furniture or other property which had been removed before the fire, or did not exist?
6. To collect the proceeds to use for remodeling, repairs, or to replace equipment?
7. To pay illegal debts (loan sharks and gambling)?
8. To acquire money to get into another business, refinance or avoid bankruptcy?
9. To avoid or reduce the cost of demolition?
10. To collect on the insurance before the insurance is cancelled by the company?
11. To collect a high level of insurance because the value of the property had gone down: ie. a liquor

license had been lost; the property had been condemned; the property could not be sold; damage to the building?

12. To get out of a mortgage or lease?

13. To get rid of a big car that will not sell?

B. Non-Profit Motives:

1. To conceal a crime?

2. A person may burn his or her own property as a result of domestic problems, mental defect, or other irrational motives.

II. Rational Motives of Other Persons.

A. Land is wanted for a parking lot or new building and the buyer will not pay the asking price?

B. Business competitor wants to eliminate competition (both legal and illegal)?

C. Scare tactic to collect a debt or extort money?

D. Union related problems such as the use of non-union labor?

E. To conceal another crime?

F. Contractors (fire chasers) who have fires set in order to get the repair contract?

G. Creditor or mortgagee wants to be paid?

III. Irrational Motives.

A. Domestic problems.

B. Tenant who is mad at the landlord.

- C. Employee who is mad at the boss.
- D. Pupil who has been punished at school.
- E. Racial motivation.
- F. Religious motivation.
- G. Political motivation.
- H. Revenge as the result of a fight, testimony in court, etc.
- I. Pyromania and other mental defects.

OWNER PROFILE

I. Owner Interview Information on the Fire

- A. Knowledge of how the fire started:
 - 1. When asked the general question, "What do you know about the fire", how did he or she respond?
 - 2. Who was in the building at the time of the fire?
 - 3. Who is the last known person to be in the building? NAP When? Why?
 - 4. Was the building locked and secured at the time of the fire?
 - 5. Who had permission to be in the building, NAP's.
 - 6. Who had keys to the building? NAP's
 - 7. What does the owner believe started the fire?
 - a. If accidental causes are given, what records or other witnesses will confirm or refute the theory?

- 8. Does the owner, or anyone who had permission to be in the building, smoke?
- 9. Who does the owner suspect of setting the fire? NAP? Why?
 - a. Has anyone threatened the owner?
- 10. Who informed the owner of the fire? When?
 - a. Where was the owner when notified? Whom was he or she with?
 - b. How did the owner react?
- 11. Where was the owner at the time of the fire? NAP of witnesses to confirm? Records to confirm?

II. Ownership of Other Property and Loss History.

- A. What other buildings has the owner owned, rented or had any financial interest in either personally, in a partnership or corporate capacity for the past ten years?
- B. What is the relevant information concerning those properties (see building profile)?
- C. Insurance claims filed?
 - 1. Have there been any fires in the owner's properties?
 - 2. Through what agents did the owner and/or his or her companies purchase insurance? NAP? From what companies? Copies of policies?
 - 3. With what insurance companies has the owner filed

insurance claims of any kind for the past ten years? Dates? Companies? Copies of claims?

III. Owner Interview Information on the Building Profile.

IV. Owner Interview Information on the Insurance Profile.

V. Personal Information.

A. Where has the owner had bank accounts in the past five years? NAP?

B. Who are the owner's close friends? Where does he or she go socially? Where does he or she drink?

C. NAP of accountant and attorney?

D. Employment history?

1. NAP of present employer? Duties; salary; union membership?

2. Other jobs for the past five years?

E. Educational background?

F. Marital status? Children?

VI. Business Background (Note: The information should be obtained from the person or persons who conducted a business enterprise in the building which was burned).

A. Complete list of all past and present employees? NAP? Their duties and hours? NAP of security guards?

B. Description and diagram of building, contents, appliances, etc.?

C. How was business generally?

1. Had the gross sales or production dropped off?

How much?

2. Was there any inventory which was not moving?

3. What inventory had been moved into or out of the building before the fire?

D. Were the employees unionized? What union(s)? Any recent union problems?

E. Any significant job actions taken in the past six months?

F. Complete list of suppliers, contractors, and creditors? NAP's?

G. NAP of banks where the business has loans or accounts? Copies of loan applications and bank statements?

H. Any law suits pending against the business? Where? Case name and number?

VII. Owner and/or Tenants Participation in Preparation of Insurance Claim.

A. What is the relationship between the insured and the insurance agent, the public adjuster and the repair contractor? Who introduced them?

B. What information did the insured supply in the computation of the loss?

1. How was the inventory valued?

2. Copies of supporting documents?

C. What information did the owner supply for the

original application for the policy? Purchase price?

Copies of supporting documents?

VIII. Net Worth Computations and Supporting Documents.

(Note: This computation requires a complete listing of assets and liabilities and a cross referencing of different sources of information to determine if the computations are complete and accurate. A person or company may be rich when they go to the bank for a loan and poor when they go to IRS. An owner or tenant and/or their accountants should supply things like financial statements, profit and loss statements, tax returns, general ledgers, and bank statements. Supporting documents such as purchase orders, sales orders, and cash receipts are required to verify the information on the general statements. Finally, the persons who prepared the general statements and supporting documents must be interviewed to confirm the accuracy of the information.)

- A. Net worth of owner?
- B. Net worth of all businesses with which the owner was associated?
- C. Net worth of commercial tenant?
- D. Net worth of all businesses with which the tenant is associated?

INFORMATION FROM EMPLOYEES

I. Who are the Employees?

- A. Complete list, past and present? Their duties and hours?
- B. NAP of all employees who were interviewed?

II. Employees' Interview Information.

A. Knowledge of how fire started:

1. When asked the general question, "What do you know about the fire", how did they respond?
2. Who was in the building at the time of the fire?
3. Who is the last known person to be in the building? NAP? When? Why?
4. Was the building locked and secured at the time of the fire?
5. Who had permission to be in the building, NAP's?
6. Who had keys to the building? NAP's?
7. What do they believe started the fire? If accidental causes are given, what records or other witnesses will confirm or refute the theory?
8. Do they or anyone who had permission to be in the building smoke?
9. Who do they suspect of setting the fire? NAP? Why? Has anyone threatened them or the owner?
10. Who informed them of the fire? When?

a. Where were they when notified? With whom was he or she?

b. How did they react?

B. Business:

1. How did they describe the condition of the business?
2. Had sales or production dropped? How much?
3. Was there any inventory which was not moving?
4. Was any inventory or equipment moved into or out of the building before the fire?

C. Owner:

1. What did the owner say about the fire and how it started?
2. What do the employees know about the financial condition of the owner and his needs for money?
3. Who are the owner's friends and with whom does he or she socialize? Where does he drink?

D. Employee-Employer relations:

1. Were the employees unionized? What union? NAP?
2. Were there any recent job actions, ie. firings, denial of raises, etc.?

INFORMATION FROM THE TENANTS

I. Tenant's Interviews.

A. Knowledge of how the fire started:

1. When asked the general question, "what do you

know about the fire", how did he/she respond?

2. Who was in the building at the time of the fire?
3. Who is the last known person to be in the building? NAP? When? Why?
4. Was the building locked and secured at the time of the fire?
5. Who had permission to be in the building, NAP's?
6. Who had keys to the building? NAP's?
7. What does the tenant believe started the fire?
 - a. If accidental causes are given, what records or other witnesses will confirm or refute the theory?
8. Does the tenant, or anyone who had permission to be in the building smoke?
9. Who does the tenant suspect of setting the fire? NAP? Why?
 - a. Has anyone threatened the tenant or owner?
10. Who informed the tenant of the fire? When?
 - a. Where was the tenant when notified? Who was he or she with?
 - b. How did the tenant react?

II. Tenants Present at the Fire.

A. NAP's

B. Copies of written leases and the terms of unwritten

leases.

- C. How much was the rent? To whom was it paid?
- D. Was anyone behind in their rent? How much?
- E. Which tenants had contents insurance? How much?
From what company?
- F. How did the tenants learn of the vacancy in the building? Do any of them have a personal relationship with the owner?
- G. Do any of the tenants have criminal records or mental defects?

III. Vacant Buildings: Most Recent Tenants.

- A. NAP's?
- B. Why did they move out? When did they move? Did the owner do or say anything that caused them to move?

IV. Condition of the Building.

- A. How do the tenants describe the general condition of the building?
- B. When were the last repairs and improvements made in the building? What were they? NAP of persons who did the work?
- C. Do the tenants know of any structural defects in the building?
- D. Do the tenants know of any housing code violations? Had inspectors come to the building? When?
- E. Had any of the tenants lived in buildings where there

had been fires? When? Where?

F. Other information on the building profile?

V. Owner.

- A. What did the owner tell the tenants about the fire and how it started?
- B. Had the property been up for sale?
- C. What do the tenants know about the owner's financial condition and need for money?
- D. Had anyone strange been around the building? NAP or description?
- E. Who were the owner's friends?

INFORMATION FROM NEIGHBORS AND OTHER WITNESSES

I. People with Knowledge of Fire.

II. Interview Information.

A. Knowledge of how the fire started:

1. When asked the general question, "what do you know about the fire", how did they respond?
2. When did they see flames or smoke? Going from where?
3. Did they hear an explosion?
4. Who did they see in or near the building before the fire? NAP's or descriptions? Carrying anything?
5. What vehicles did they see parked near the building before the fire? License numbers or descriptions? Was any car seen driving away at a fast rate or speed or with lights off?

6. How do they believe the fire started? Why? Who do they suspect of starting it? Why?

7. Did they see anything being removed from the building before the fire?

B. Building:

1. What was the general physical condition of the building?

2. Confirm other informatin of the building profile?

C. Owner and tenants:

1. Do they know the owner or tenants?

2. Do they know of any problems?

3. What has the owner or tenants told them about the fire?

4. Do they know of other properties owned by the owner?

D. Confirmation of information supplied by the owner concerning:

1. Condition of the building and the business?

2. Value of property in the neighborhood?

3. Level at which property was insured in the neighborhood?

4. Other fires in the neighborhood?

5. Burglaries in the neighborhood?

SUSPECT PROFILE

I. Motive, Means, and Opportunity.

II. Evidence of Motive, Means, and Opportunity for Each Suspect.

III. Relationship Among the Suspects.

IV. Possible Defenses of all Suspects.

BIBLIOGRAPHY

B. BIBLIOGRAPHY

America's Burning: Stop Arson, Harford, Conn., Harford Insurance Group, 1979.

American Management Association, Crimes Against Business- Preliminary Recommendations for Demonstration, Research and Related Programs Designed to Reduce and Control Non-Violent Crimes Against Business. Ed. L. Elber, New York: AMA, 1977.

American Society for Industrial Security. Guide to Security Investigations. Rev. ed. Washington, D.C." A.S.I.S., 1975.

Andrasko, Jan. "Identification of Burnt Matches by Scanning Electron Microscope." J. Forensic Sci., 23, No. 4(1978), 637-42.

Are Federal Programs Adequate to Deal with Arson Problems? Washington, D.C.: U.S. Comptroller General, 1978.

Armstrong, A.T., and R.S. Wittkower. "Identification of Accelerants in Fire Residues by Capillary Column Gas Chromatography." J. Forensic Sci., 23, No. 4(1978), 662-71.

Armstrong, O.K. "The All-Consuming Crime." Saturday Evening Post, 250 (March 1978), p.22(4).

Arson and Arson Investigation, U.S. Department of Justice, Washington, D.C., 1977.

Arson-A Status Report. Los Angeles, CA: League of California Cities, Los Angeles Co. Div. Criminal Justice Planning Unit, 1977.

"Arson Costs Industry Millions." Rubber World, 175, No. 2(1976), 53.

"Arson-Epidemic in America." J.Am.Ins. (Fall 1974), 1-5.

Arson-For-Profit: More Could be Done to Reduce It. Rept. No. CED-78-121, Washington, D.C.: General Accounting Office, Community and Economic Development Div. (31 May 1978), 1-41.

"Arson Increasing Faster Than Most Other Crimes." State Peace Officers J., 11, No. 32 (Jan.-Feb. 1974), 130-1.

Arson Investigation and Prosecution, Aetna Life and Casalty Company and the California District Attorney's Association, Sacramento, 1981.

"Arson Lab Fights Fires with Facts: The State of Ohio, With the Help of an Arson Lab, Is Putting Arsonists Behind Bars at a Record Pace." J.AM.Ins., 54 (Spring 1978), 9-11.

"Arson Probes Take Hard Work, Scientific Analysis - And Some Luck," The Washington Post, Fe G:16, 1981.

"Arson: Some Common Sense Solutions." J.Am.Ins., 52 (Winer 1976-1977), 11-15.

Arson-Some Problems and Solutions. Boston: National Fire Protection Association (1976), 1-152.

Arson Update, Illinois Advisory Committee on Arson, Putnum, Northbrook, IL, 1979.

Artz, C.P., J.A. Moncrief, and B.A. Pruitt. Burns-A Team Approach. Philadelphia: W.B. Saunders Company, 1979.

Auto Arson Detection-Training Key #213. Gaithersburg, Md.: International Assoc. of Chiefs of Police, 1974.

Baldwin, Gregory, "RICO Application to Arson" in "Arson Control", National College of District Attorneys, Houston, Texas, 1980.

Baldwin, Ronald E. "Adsorption-elution Technique for Concentration of Hydrocarbon Vapors." Arson Anal. Newsl., 1, No. 6(1977), 9-12.

Barlay, S. "Firebugs and Their Fearless Victims." Top Security, 2, No. 6(Oct. 1976), 195-197.

Barracato, J., and P. Michalmore, Arson. New York: Norton, 1976.

Basic Photography for Fire and Arson: Law Enforcement Series. No. 0093. Rochester, N.Y.: Eastman Kodak Co., 1976.

Bates, E. B. Elements of Fire and Arson Investigation. Santa Cruz, Ca.: Davis Publ. Co., 1975.

Beard, P. "Fire Investigator's Role (from Investigation of Arson, Crime Scenes and Vehicular Problems, 1976, by William G. Eckert)." Wichita, Kan.: Milton Helpern International Center for Forensic Sciences, 1976.

Bell, Jim. "The UCR and the Fire Service." Fire Command, 46, No. 2 (Feb. 1979), pp. 16-17.

Blank, Joseph P. "They are Burning Our Neighborhood!" Readers Digest, 113 (Oct. 1978), p. 131 (5).

"Burn, Baby, Burn: Arson (in United States Cities)." Economist (London), 265, No. 42 (12 Nov. 1977).

"Business Battles the Arsonist." Business Week, 11 (26 Dec. 1977), p. 46(2).

Business Battles the Arsonist: A \$1.3 billion annual tab inspires a data bank plan and a national campaign." Business Week, (28 Feb. 1977), 64+.

Califana, A.L., et al. Criminalistics for the Law Enforcement Officer. Ed. S. Hunger. Hightstown, N.J.: McGraw-Hill, 1978.

Carroll, J. R. Physical and Technical Aspects of Fire and Arson Investigation. Springfield, Ill.: Charles C. Thomas, 1979.

Carter, Robert E. "Arson Investigation at the Crossroads." Editorial. Fire Command, 46, No. 2 (Feb. 1979), p. 13.

Center for Criminal Justice, Report in Arson in the United States, March 1979.

"City's Arson Strike Force Achieves 100% Conviction Rate, Doubles Arrests," The Daily Record, Baltimore January 16, 1981.

Clarke, F.B., and D.W. Raisher, ed. Attacking the Fire Problem-A Plan for Action-1976. Washington, D.C.: GPO, 1976.

- Clodfelter, R.W., and E.E. Hueske. "Comparison of Decomposition Products from Selected Burned Materials with Common Arson Accelerants." J. Forensic Sci., 22, No. 1 (Jan. 1977), 116-118.
- Cook, Joseph Lee, and Earleen H. Cook. Arson for Insurance and Protest: A Bibliography, 1965-1977. (Jan. 1978), 12. Ed. M. Vance. Monticello, Ill.: Council of Planning Librarians, 1978.
- Davis, Joseph R. "Michigan V. Tyler: Its Effect on the Fire Service." Fire Command, 46 No. 2 (Feb. 1979), pp. 23-26.
- "Warrant Requirement in Crime Scene Searches-Part 1." FBI Law Enforcement Bulletin, 47, No. 11(Nov. 1978), 26-31.
- DeHaan, John D. "Laboratory Aspects of Arson - Accelerants, Devices, and Targets." Arson Analysis Newsletter, 2, No. 4 (Aug. 1978), 1-14.
- Development of a New Jersey Strategy for Arson Control: The Report of the Arson Task Force. Princeton, M.J.: New Jersey Dept. of Law and Public Safety (Atty. Gen.), Div. of Criminal Justice and Div. of State Police, 1979.
- EK, Nils Ake, et al. "Arson Investigation." Forensic Med., 1 (1977), p. 1-16.
- "The Fastest Growing Crime." Newsweek, 89 (24 Jan. 1977), p. 38(1).
- Federal Government Sources on Crimes Against Business. Rockville, Md.: NCJRS Microfiche Progr., 1977.
- Fisher, Phillip E., Louis J. Hillenbrand, and Jon T. Shuchy. Arson Information Resources: A Baseline Collection and Survey. Washington, D.C.: Battelle Columbus Labs, Ohio and National Fire Prevention and Control Administration, 28 Feb. 1977.
- Fisher, R.S., M.D., and C.S. Petty, M.D., eds. Forensic Pathology: A Handbook for Pathologists. Washington, D.C.: GPO, 1977.
- Fitch, R.D., and E.A. Porter. Accidental or Incendiary. Springfield, Ill.: Charles C. Thomas, 1974.

- Forensic Scienc. ACS Symposium Series 13. Ed. G. Davies. Washington, D.C.: American Chemical Society, 1975.
- Fox, R. "Law Enforcement Laboratory (from Investigation of Arson, Crime Scenes and Vehicular Problems, 1976, by William G. Eckert)." Wichita, Kan.: Milton Helpert International Center for Forensic Sciences, 1976.
- Frankel, E., and M.E. Silver. White Collar Rip-Off. NBC News, Inc., 1975.
- French, A.M. Anatomy of Arson, N.Y.; Arco Publishing, 1980.
- Freudinheln, Betty "The Most Neglected Crime in the United States," Barrister, Spring, 1980.
- Glen, John. "The Crime That's Burning America." J.Ins., 39 (Nov.-Dec. 1978), pp. 14-17.
- Golding, E.I. Forensic Handbook. Philadelphia: GPO, 1975.
- Graves, Robert L. "Accelerant Analysis: Gasoline." Arson Anal. Newsl., 1, No. 5 (1977), 5-12.
- Heineke, J.M. "Modeling Arson-Exercise in Qualitative Model-Building." IEEE Transactions on Systems Man and Cybernetics, SMC 5, No. 4(1975), 457-463.
- Hendel, R.E. Fundamentals of Criminal Investigation-Study Guide. Santa Cruz: Davis Publ. Co., 1977.
- Hershberger, Robert A., and Ronald K. Miller. "The Impact of Economic Conditions on the Incidence of Arson." J. Risk and Ins., 45(June 1978), 275-90.
- Hight, T.H., J.R. Sparks, and C.T. Shean III. Georgia Manual for Arson Investigators. Decatur, Ga: Prosecuting Attorneys' Council for Georgia, 1976.
- Hill, Davis S. "Time To Get Tough With the Arsonist." Reader's Digest, 109 (Nov. 1976), p. 245(4).
- Hrynychuk, R., et al. "Vacuum Distillation for the Recovery of Fire Accelerants From Charred Debris." J. Can. Soc. Forensic Sci., 10, No. 2(1977), 41-50.

Hugel, David H., et al. The Evidence Handbook; Chicago, Northwestern University Press, 1980.

Hurteau, W.K. "Arson Investigation and the Collecting of Evidence." Security World, 11 No. 3 (Mar. 1974), 18-19, 70, 73.

Hutnick, M.B. Criminal Law and Court Procedures. Albany, N.Y.: Delmar Publ., 1974.

Icove, J.D., et al. The Tennessee Statewide Arson Pattern Recognition System. Ed. J.S. Jackson. Nashville, Tenn.: Tennessee State Fire Marshal's Office, Univ. Oxford, 1977.

Icove, J. Davis, et al. Combatting Arson for Profit; Columbia, Ohio; Battelle Publ., 1977.

Kwan, Q.Y. and Genevieve C. Denault. Needs in Arson Investigation-A Survey of Arson Investigators-Equipment Systems Improvements Program. Rockville, Md.: NCJRS Doc. Loan Prog., 1976.

Levin, B. "Psychological Characteristics of Firesetters." Fire J., 70, No. 2 (Mar. 1976), 36-40.

Lowry, W.T., J.N. Lomonte, and I.C. Stone. Scientific Assistance in Arson Investigation - A review of the State of the Art and a Bibliography. Rockville, Md.: NCJRS Microfiche Prog., 1977.

Lucht, D.A. "Arson - A National Perspective.: Washington, D.C.: U.S. Dept. of Commerce, National Fire Prevention and Control Administration, 1978, 1-32.

Mach, M.H. "Gas Chromatography-Mass Spectrometry of Simulated Arson Residue Using Gasoline As An Accelerant." J.Foren.Sci. 22, No. 2 (Apr. 1977), p. 348-357.

Madison, A. Arson. Danbury, Ct.: Franklin Watts, Inc. 1978.

Majury, J. "Search of the Crime Scene." In Introduction to Modern Criminal Investigation - With Laboratory Techniques. S.S. Krishnan. Springfield, Ill.: Charles C. Thomas, 1978.

May, R.E. "Arson-The Most Neglected Crime on Earth." Police Chief, 41, No. 7 (July 1974), 32-33.

MacDonald, J.M. Bombers and Firesetters. Springfield, Ill.: Charles C. Thomas, 1977.

McKinm, Gordan, P. ed. Fire Protection Handbook, 14th ed. 1976; Boston, National Fire Protection Association.

Midkiff, C.R. "Separation and Concentration of Flammable Liquids in Arson Evidence." Arson Analysis Newsletter, 2, No. 6(Oct. 1978), 8-12.

Miksic, Terry Lee. Arson: A Dilemma For the Criminal Justice System. Huntsville, Tex.: Sam Houston State Univ. Huntsville, Tex. Inst. of Contemporary Corrections and the Behavioral Sciences, May 1978.

Milliken, J. "Up in Smoke." Law Enforcement Comm., 6, No. 1 (Feb. 1979), 12-15.

Moretz, W.J., Jr. "Psychology's Understanding of Arson-What Do We Know and What Do We Need to Know?" Fire Arson Investigator, 28, No. 1 (1977), 45-52.

Morgan, J.J. Criminal Investigation. 2nd ed. Highstown, N.J.: McGraw-Hill, Gregg Div., 1979.

Moylan, Jr., Charles E., The Right of the People to Be Secure: An Examination of the Fourth Amendment, National College of District Attorneys, Houston, Texas, 1977.

Moylan, Charles E., Search and Seizure, A Section of Fourth Amendment Problems, Maryland State's Attorney Association.

Munker, L. "Defense's Role (from Investigation of Arson, Crime Scenes, and Vehicular Problems, 1976, by William G. Ecker)." Wichita, Kan.: Multon Helpern International Center for Forensic Sciences, 1976.

O'Hara, C.E. Fundamentals of Criminal Investigation. 4th ed. Springfield, Ill.: Charles C. Thomas, 1976.

Organized Crime, Report of the Task Force in Organized Crime, National Advising Committee on Criminal Justice Standards, Washington, D.C., 1976.

Perenich, Theresa A. "Infrared Spectra of Gases Produced by Pyrolysis of Carpet Fibers." Applied Spectroscopy, 30, No. 2(1976), 96-200.

Petty, C.S., M.D. "Fire Death Identification and Pathology-How to proceed in the Examination of a Fire Victim." Fire Arson Investigator, 29, No. 2 (Oct.-Dec.1978), 30-45.

Perkins, Rollin, M., Criminal Law 2nd. ed., Mineola, N.Y., The Foundation Press, 1969.

"Put The Heat on the Arsonist-Program Guideline for Community Action. Northbrook, Ill.: Allstate Ins. Co., 1978.

Putting the Heat on the Arsonist-Why You Should See Red Over Arson. Northbrook Ill.: Allstate Ins. Co., 1978.

Report of the Senate Committee on Governmental Affairs, S. 294, 97th Congress, 1st Session, Bill to Establish an Interagency Committee on Arson Control (Sens. Glenn and Sarbanes).

Rottenberg, S. Social Response to Incendiary Fire-Equipment Systems Improvement Program. Rockville, Md.: NCJRS Microfiche Prog., 1976.

Salenno, Ralph and John Tomplais, The Crime Confederation, Garden City, Doubleday & Co., 1969.

Sanborn, K. "Prosecutor's Role (from Investigation of Arson, Crime Scenes and Vehicular Problems, 1976, by William G. Eckert)." Wichita, Kan." Milton Helpers International Center for Forensic Sciences, 1976.

Schultz, D.O. Criminal Investigation Techniques. Houston, Tex.: Gulf Publ. Co., 1978.

Scott, J.D. Investigation Methods. Reston, Va.: Reston Publ. Co., Inc., 1978.

Scott, Lloyd G. "Presenting The Arson Case." Fire Command, 46, No. 2 (Feb. 1979), pp. 19-20.

Siljander, R.P. Applied Police and Fire Photography. Seattle, Wash.: Charles C. Thomas, 1976.

Stahl, F.I. Computer Simulation of Human Behavior in Building Fires. NBSIR 78-1514. Washington, D.C.: U.S. Dept. of Commerce, 1979.

State Fire Marshals Conference Report, Recommendations on Federal and State Roles in the Fight Against Fire, Held at Atlanta, Ga., Feb. 21-24, 1977. Rept. No. NFPA-FMC-77. Boston: Fire Marshalls Assn. of North America and National Fire Prevention and Control Administration, June 1977.

Stone, Irving C. "Accelerant Detection in Fire Resides." J. Forensic Sci., 23, No. 1(1978), 78-83.

Styre, G. Alex, Prosecuting An Arson Case, Olympia, Washington, Washington Association of Prosecuting Attorney, 1980.

Suchy, J.T. Arson - The American's Malignant Crime - Final Report: Proc. of Seminars by the National Fire Academy, Jan. - Feb. 1976. Rockville, Md.: NCJRS Microfiche Prog., 1976.

"Target: Arson; Arson, the 'Easiest Crime,' Is Under Renewed Attack; Three New Arson Proposals Show Why." J.Am.Ins., 53 (Winter 1977/1978), 12-15.

Tauber, S.J. Arson Control - A Review of the State of the Art with Emphasis on Research Topics. Washington, D.C.: GPO; 1978.

Thamch, Ronald N. "Automated Analysis of Fire Samples." Arson Anal. Newsl. 1, No. 5 (1977), 13-23.

"Gas Chromatographic Analysis of Nonvolatile Accelerants." Arson Analy. Newsl., 3, No. 1 (1979), 9-15.

"The Use of Differential Spectroscopy in the Analysis of Fire Debris." Arson Anal. Newsl., 1 (1976), 11-20.

Thozet, H., and J.J. David. "Interest in the Study of Gas Chromatography in Certain Criminal Investigations." Bull. Med. Leg., 20, No. 3 (1977), 201-4.

Touched Off By Human Hands, Bloomington, Ill., Illinois Advisory Committee on Arson Burning, 1978.

U.S. Cong. Senate. Committee on Governmental Affairs.
Permanent Subcommittee on Investigations. Arson-
for-Hire: Hearings. 95th Cong., 2nd sess. Washington,
D.C.: GPO, 1978.

Arson-For-Profit: Hearings. 96th Con., 1st sess.
Washington, D.C.: GPO, 1979.

U.S. Cong. Senate. Committee on Governmental Affairs.
Subcommittee on Intergovernmental Relations.
Arson-For-Profit: Its Impact on States and
Localities: Hearings. 95th Cong., 1st Sess.
Washington, D.C.: GPO, 1978.

Vreeland, Robert G., and Marcus B. Waller. The Psychology
of Firesetting: A Review and Appraisal. Chapel
Hill, N.C.: North Carolina Univ.: Dept. of Psychology,
and National Engineering Lab. (NBS), Washington,
D.C. Center for Fire Research, Dec. 1978.

Verdict - Guilty of Burning, Northbordly, Ill., Allstate
Ins. Company, 1979.

Walsh, Robert E., "Inner City Arson", FBI Law Enforcement
Bulletin, Oct. 1979.

We Are All Victims of Arson. U.S. Dept. of Justice,
Washington, D.C., 1979.

Webster, S.H., and K.E. Mathews. Survey of Arson and
Arson Response Capabilities in Selected Jurisdictions.
Cambridge, Mass.: Abt Associates, Inc., 1979.

Weston, P.B. Criminal Investigation-Basic Perspectives,
2nd ed. Englewood Cliffs, N.J.: Prentice-Hall, 1974.

Wilson, David. "A Unified Scheme for the Analysis of
Light Petroleum Products Used as Fire Accelerants."
J.Forensic Sci., 10, No. 3 (1977), 243-52.

Winter, Bill, "Federal Courts at Odds over RICO Law",
ABA Journal, Dec. 1980.

Wise, M.K. "Arson-What Three Cities Are Doing About
Arson." Fire Chief, 21, No. 4 (April 1977), 53-57.

Woycheshin, Steven, and John DeHaan. "An Evaluation of
Some Arson Distillation Techniques." Arson Analy.
Newsl., 2, No. 5 (1978), 1-16.

Zoro, J.A., and K. Hadley. "Organic Mass Apectrometry
in Forensic Science." J.Forensic Sci. Sco., 16,
No. 2 (April 1976), 103-114.

END