Arson Prevention And Control

U.S. Department of Justice
Law Enforcement Assistance Administration
National Institute of Law Enforcement and Criminal Justice
Office of Development, Testing and Dissemination

Program Models are a synthesis of research and evaluation findings, operational experience, and expert opinion in a criminal justice topic area. Each report presents a series of programmatic options and analyzes the advantages and disadvantages of each. The intent is to provide criminal justice administrators with the capability to make informed choices in planning, implementing, and improving efforts in a program area. The Models may also serve as the basis of LEAA testing and demonstration efforts.

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Arson Prevention And Control

Program Model

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CHAPTER 1: INTRODUCTION

> On September 12, 1976, a young boy burned to death during an apartment building fire on Boston's Symphony Road. That blaze was the twenty-second suspicious fire in that area in two years. Motivated by fear and anger, concerned residents in the Symphony Road area met that same night and began investigating the histories of the burned down buildings.[1]

The results of the Symphony Tenants Organizing Project (STOP) are now well-known: the uncovering of an arson-for-profit ring responsible for as many as 35 fires that destroyed $6 million worth of property. Perhaps more importantly, media coverage of the arrest of 33 individuals participating in the ring (including a retired Fire Chief, a police officer, attorneys, insurance adjustors, and real estate operators has increased public awareness of the crime of arson, a crime in which little interest previously existed.

Similar investigations in a number of other cities and the concerted data collection efforts of the U.S. Fire Administration, the Law Enforcement Assistance Administration, the National Fire Protection Association, and other interested agencies, are only now beginning to provide a more complete picture of this crime which caused an estimated $1.3 billion in losses in 1977 alone.[2] These studies have shown that the Boston experience is by no means unique. Most cities, in fact, are now experiencing similar arson problems, the complexities of which are typified in the following scenarios developed by the Massachusetts task force on arson:

- The landlord of a large apartment with high costs (in a market that will not bear high rents) applies for a section 8 award from HUD to subsidize low income residents after renovation. The present tenants protest the section 8 award because they are too well off to qualify for subsidy but too poor to afford the higher rents that will be charged after renovation. Fires are set to "burn them out" so renovations can take place.

- Real estate speculators buy a property at a low price from a white family and sell at a high price to a minority family with an FHA mortgage. Operating costs are high, the new owner becomes unemployed and is forced to abandon the home. The property joins the city's growing list of vacant buildings and becomes a target for vandals who set fires for the thrill of watching the fire department at work.

- A fire in a multi-family home is set by a 15-year-old who is slow in school, overweight, has learning disabilities and family problems at home. The child has been previously responsible for small fires in the home but these have been covered up by the mother. Psychological tests administered in school have uncovered the child's general problems, but his fire setting history is unknown.

Across the country, communities are increasingly experimenting with innovative approaches to controlling and preventing this complicated crime. Seattle, for example, has received considerable attention for its community targeted efforts which include neighborhood arson patrols and rewards for information leading to the arrest of arsonists. Similarly, Philadelphia has been successful in its combined city and federal government (Bureau of Alcohol, Tobacco and Firearms) task force approach. Such strategies, combined with prevention efforts, a solid diagnosis of the arson problem, and a well-coordinated investigation and prosecution process, offer the hope of reversing the trends of the last fifteen years.

1.1 Focus and Development of the Report

This Program Model document focuses on three approaches which currently appear to hold the most promise in the fight against arson. The report is directed to fire departments, law enforcement agencies, and community groups involved in prevention and control efforts, as well as to federal and state level agencies concerned about the arson problem. Suggestions for future program development are presented, based upon a synthesis of the experience of existing arson programs, the opinions of leaders in the field, and available research findings.

In preparing the document, both a mail survey and on-site inquiries were conducted in selected cities:

- All fire departments in cities with a population of 50,000 or more (413) were surveyed by mail with an overall response rate of 60 percent. The findings of this survey

are referenced throughout this report and have been published in a separate document entitled "A Survey of Arson and Arson Response Capabilities in Selected Jurisdictions."

- From the 179 survey responses, six cities were selected for on-site observation: New York City, Philadelphia, Seattle, Dallas, Denver and New Haven. Both in the nature and magnitude of their arson problems and in their responses to those problems, these cities represent a range of experience potentially applicable to problems in other jurisdictions.

  In brief, New York has made extensive use of arson patrols to check arson in the South Bronx and has developed a program to coordinate the arson investigation process under the direction of the Bronx District Attorney. Philadelphia has developed a strong cooperative relationship among the police, fire, prosecution and the federal ATF. Seattle has combined a strong public relations campaign with the coordination of arson patrols and a cooperative investigative effort. Denver and Dallas have also mounted aggressive public relations efforts and New Haven has focused on the development of an arson early warning data system with the cooperation of the insurance industry. Appendix A outlines some of the basic characteristics of the arson problem and response in each of these cities.

- In addition to the cities selected for formal on-site inquiries, informal discussions were held with other planners and program developers involved in the organization of arson response campaigns. These contacts included representatives of Massachusetts' state-wide arson task force as well as insurance organizations and related interest groups.

Since most systematic efforts to combat arson are relatively young, this report can only represent a snapshot in time. The recommendations presented can be expected to be modified in the future as further research is conducted and as communities continue to experiment with new approaches.

1.2 Scope of the Problem

Efforts to prevent and control arson have been constrained by a number of related factors. First, and perhaps most obvious, is the low priority traditionally given to arson by the community, law enforcement, and fire control agencies. This, in turn, is confounded by the second factor:

the complexity of arson. The crime known as arson actually includes any number of distinct and unrelated fire setting behaviors, each of which may demand very different responses from government, the community, and public protection agencies. Finally, arson control programs have been hampered by a lack of knowledge concerning the true scope and incidence of this crime. These problems are examined below.

1.2.1 Low Priority Given to Arson

In part, arson may receive little attention due to two significant perceptions about this crime: (1) that the prosecution of arson is very difficult and mostly unsuccessful; and (2) that it is a property crime rather than a crime of violence.

The perception that arson is a difficult crime to investigate and prosecute may, in fact, be justified. Four factors in particular may account for this:

(1) It is difficult to establish that a crime was committed. In most other crimes, whether against the person or property, there is a victim who comes forward and reports the crime. Not so for arson. Many arson fires are contrived to appear accidental. Even when a fire is obviously incendiary, the owner rarely receives an insurance payment. Thus, in many cases the apparent victim may actually be the perpetrator.

(2) At a minimum, the investigation of arson requires a collaborative effort among police, firefighters, prosecuting attorneys and insurance executives. Yet the roles of each of these groups are seldom defined in a manner that encourages interagency cooperation and information sharing.

(3) The real culprits are not always the firesetters, but may be, as in the Boston experience, a group of seemingly innocent citizens who manipulate the complexities and weaknesses of insurance laws for their own economic gain.

(4) Finally, even if arson is established as the cause of a fire and a suspect is apprehended, it may be difficult to obtain a conviction. In most cases, the prosecutor must be able to (1) establish exclusive opportunity or (2) produce a witness--two elements which are exceedingly difficult to provide in crimes such as arson.

However, the perception that arson destroys only worthless property is without foundation. For example, it has been estimated that 1000 people in 1974 alone died in incendiary and suspicious fires.[3] Further, in a survey conducted for this report, it was estimated that the national losses due to arson total some $1,293,996,000.[4] Many of these losses included peoples' homes, businesses, and schools.

In addition to these direct losses, arson causes other, indirect financial impacts:

- death and injury to citizens and firefighters;
- increased insurance premiums;
- increased taxes to support fire, police, and court services;
- loss of jobs at factory and business arson sites;
- lost revenue to damaged businesses and industries;
- loss of adequate public facilities (particularly schools) as a result of arson fires;
- loss of housing for inner-city residents; and
- erosion of the municipal tax base.

Given the extraordinary financial damage that arson inflicts on the community, it is not surprising that so many communities are now instituting new anti-arson initiatives.

1.2.2 The Complex Nature of Arson

Most people believe that arson is one simple crime--the act of "maliciously burning the building or the property of another, or of burning one's own for some improper purpose, as to collect insurance."[5] While such a definition establishes the basic elements of the crime, it cannot convey the diverse motivations, targets, and actors which are all part of arson. It might be argued, in fact, that there is no single crime called arson; rather, there are acts of vandalism involving fire, insurance frauds, assaults which use fire as a weapon, crime concealment efforts, and so on. Similarly, the simple definition noted above cannot express the very distinct activities which communities must undertake to address the arson problem in all its many manifestations--public awareness activities, criminal investigations, mental health screening and counseling, and arson patrols, just to name a few.

The arson taxonomy presented in Figure 1.1 illustrates the complex nature of this crime and the varied responses which may be made in attempting to control the problem. As this illustration shows, there are two very general arson types: those motivated by some sort of psychological gain, and those motivated by economic gain. Within these two major classifications are several more narrowly defined fire setting behaviors. Response strategies include both those efforts designed to prevent the crime and those which seek to identify and apprehend the criminal. It should be noted that response strategies also include specific data collection activities, as the acquisition of information is key to both prevention and law enforcement.

Although this taxonomy is far from complete, it does provide some indication of the varied nature of the arson problem and the range of responses which communities may undertake. More importantly, given the low budgets typically provided for arson control--even those cities that have developed the most sophisticated anti-arson programs usually allocate no more than 1 percent of their fire department's budget to these efforts--the importance of a community's examining the nature of its own arson problem prior to implementation of any arson prevention program is apparent. The planning approaches and types of data which may be collected for such a needs assessment are examined in Chapters 2 and 7 respectively.

1.2.3 The Scope and Incidence of Arson

The magnitude of the arson problem is exceedingly difficult to estimate. In the absence of a reliable nationwide data base on the reported incidence of the crime, estimates are generally based on survey data collected by different organizations and from different respondents. Moreover, although these estimates suggest that reported arson has increased dramatically, it is not known how much of the increase is due to improved detection strategies and how much should be attributed to increases in the actual incidence of the crime. The National Fire Protection Association indicates that in 1964 the number of fires of incendiary origin (intentionally set) and suspicious origin (suspected of being incendiary) was only 30,900.[7] The survey conducted in conjunction with this report estimated that there were approximately 212,000 such fires in 1977.[8] In the last six years, per capita arson rates have also shown substantial increases. From 1971 to 1977, the number of reported building fires per hundred thousand population increased about 11 percent in cities over 100,000 (465/100,000 in 1971 to 517/100,000 in 1977), while fires classified as incendiary and suspicious increased 130 percent in the same cities (39.9/100,000 in 1971 to 91.8/100,000 in 1977).

For the most part, information on the motives for incendiary fires is also confined to rough approximations which are based on the impressions of survey respondents or case counts from conviction records. Since both sources of

FIGURE 1.1[6]
ARSON TAXONOMY

			Response Strategies		
Motive/ Arson Type	Perpetrators	Typical Targets	Prevention	Enforcement	Co-Implementation Agencies
Pyromania	Individuals who obtain some psychological gain (such as anxiety reduction) from setting fires. Some research suggests that alcoholism is frequently associated with pyromaniacs.	Any object or type of property may be burned.	Screening individuals exhibiting fire setting tendencies. Counseling/ treatment for known pyromaniacs.	Maintain file of individuals with known tendencies towards pyromania. Immediate canvassing of witnesses and bystanders.	Police agencies. Mental health/medical agencies. Arson Squad. Fire Department.
Juvenile vandalism (Type I) based on anger	Juveniles who obtain psychological gain (such as displaced aggression) from setting fires.	Any object with symbolic value, ranging from personal articles to buildings.	Counseling/treatment for identified juveniles.	Examine juvenile records for previous fire setting behavior. Interviews/ conversation with neighborhood residents.	Mental health agencies. Schools. Police Department. Fire Department. Arson Squad.
Juvenile vandalism (Type II) gang or peer group	Youths (usually males aged 10-17) with strong peer group or gang ties. Youths gain acceptance or group approval from fire-setting activities.	Vacant cars, abandoned buildings, woods, fields. Any object which appears safe to burn without being caught or hurting anyone.	Public education and awareness on effects of arson. Anti-arson campaigns led by individuals respected by the juveniles (sports figures, television personalities, etc.). Identification and protection of likely targets.	Examine juvenile records for previous fire setting behavior. Interviews/ conversation with neighborhood residents.	Arson Squad. Community groups. Youth agencies. Police Department. Schools.
Revenge	Any individual wishing to inflict physical harm or financial damage as a means of revenge or punishment. May include lovers, relatives, persons involved in social or interpersonal disputes, tenants, etc.	May be any object which is of value to the victim or which presents a high possibility of harming the victim when burned.	Community-based dispute resolution services. Counseling services.	Investigative methods would parallel those for assault or homicide.	Dispute resolution services. Crisis intervention services. Police Department. Arson Squad.
Extortion, coercion, intimidation	Building owners seeking to remove tenants, organized crime, business competitors, striking employees and employers.	Businesses, residences, factories, warehouses, etc.	Modify laws which provide incentives to remove tenants (such as tenancy decontrol in cities with rent control). Identify and monitor vulnerable properties.	Collect information on financial status of owner and buildings, business contacts and competitors, etc. Compare arson methods to those of known arsonists. Interview neighbors, business associates, tenants, etc.	Arson Squad. Police Department. Fire Department. Federal Agencies such as ATF, FBI. State and local legislative bodies.
Crime concealment	Any criminal who seeks to destroy evidence of some other crime.	Any structure or object which may contain or provide evidence of a crime. These may include residences, businesses, automobiles, or places where evidence (such as financial records) may be stored.	General crime prevention efforts.	Training of police and fire department personnel to recognize signs of crime concealment. Investigative methods will depend on type of crime being concealed.	Police Department. Fire Department. Prosecutor. Arson Squad.
Stop Loss	Individuals on the verge of financial ruin or bankruptcy.	Objects which are the direct cause of the financial difficulty, such as failing businesses, deteriorating rental properties, etc. Objects which offer quick insurance payoffs which may then be used as a means out of financial difficulty.	Identify individuals, properties, and businesses which appear to be in financial trouble. Initiate special patrol efforts for these properties. Offer specific intervention efforts which may reduce financial pressures on owner (tax abatements, low interest loans, etc.)	Collect information on financial status of buildings and owners including vacancy rates, insurance levels, tax abatements, tax arrearages, liens, mortgages and loans, etc. Interview neighborhood residents/business associates.	Police Department. Fire Department. Prosecutor. Arson Squad. Neighborhood groups. Housing Department. Tax Department. Chamber of Commerce. Registry of Deeds.

FIGURE 1.1 (CONT'D)
ARSON TAXONOMY

			Response Strategies		
Motive/ Arson Type	Perpetrators	Typical Targets	Prevention	Enforcement	Key Implementation Agencies
Insurance fraud	May include building owner and associates, insurance beneficiaries, accomplices.	Properties for which insurance benefits are greater than the real value of the property	Collect data on property to identify high risk properties. Publicize facts to building owners, insurance companies, fire departments, police, tenants, etc. Prevent insurance companies from over-insuring properties (limitations on valued policy laws). Establish preferences concerning insurance proceeds for amount of tax lien incurred. Allow insurance companies to delay payments on suspected arson cases (changes in unfair trade practices act). Permit greater latitude in refusal or cancellation of insurance (modify FAIR Plans). Arson patrols for high risk buildings.	Collect data on property, including tax information, mortgages, liens, insurance limits, financial status of owners, previous owners of buildings, sale record of building, other fires in buildings held by the property owner, etc. Compare arson methods to those of known arsonists. Interview neighborhood residents, tenants, business associates. Enact arson reporting immunity laws.	Arson Squad. Police Department. Fire Department. Prosecutor. State and Federal legislative bodies. Housing Department. Tax Department. Chamber of Commerce. Registry of Deeds. Neighborhood Groups.
Parcel Clearance	Building developers who wish to acquire certain properties for new business ventures.	Property on or adjacent to proposed sites for new development.	Promulgation of rules governing the assembly and development of land. Collect data on vulnerable property and notify owners, developers, prosecutors, police and fire departments.	Collect information on developers. See above.	Arson Squad. Police Department. Fire Department. Local or State legislative bodies. Housing Department.
Property improvement or rehabilitation.	Building owners, tenants, property managers.	Properties in need of improvement, where the insurance benefits resulting from a partial loss fire will cover the cost of improvements.	Collect information on buildings to determine vulnerable sites. Notify owners, tenants, neighbors, police and fire departments, insurance companies. Legislation permitting rent withholding for use on improvements.	See insurance fraud.	Arson Squad. Police Department. Fire Department. Housing Department. State-local legislative bodies.
Tax fraud	Building owners.	Buildings which must show substantial losses to serve as a tax shelter	Collect information on condition of building, financial status of owner. Furnish information to owner, police department, fire department, prosecutor.	See insurance fraud.	Arson Squad. Police Department. Fire Department. Tax Department.

information tend to rely upon the apprehension of arsonists, however, both may understate or distort the real nature and magnitude of the problem. As limited as the sources may be, the following estimates have been derived for these major types of arson:

- Pyromania - Data suggest that 6 to 25 percent of all arsons fall into this classification.

- Vandalism - Estimates of the magnitude of this problem range from 35 to 50 percent of all identified arson.

- Revenge - Data indicate that between 10 and 30 percent of incendiary fires are motivated by spite or revenge.

- Arson-for-profit - No reliable information is available on the incidence of specific types of arson-for-profit, such as stop-loss or insurance fraud. Taken as a whole, however, arson motivated by economic gain may account for 3 to 19 percent of incendiary fires, depending on the source of information used. Yet because economic gain may motivate substantial numbers of undetected arson, many observers speculate that the rate of arson-for-profit may be as high as 40 percent in some jurisdictions. And frequently, the dollar losses from this type of fire may account for a disproportionate amount of a community's total arson losses.

- Crime Concealment - According to most estimates, crime concealment is the motive for approximately 7 to 10 percent of all arsons.

Given the low priority of combatting the crime, the difficulties in detecting it, the problems of coordinating its investigation, and the covert methods of many of its perpetrators, it is not at all surprising that arson has been permitted to flourish.

1.3 Federal Research and Action

Over the past five years, both the U.S. Fire Administration and the Law Enforcement Assistance Administration have sponsored research and convened study groups to determine the most effective response to the growing problems of arson prevention and control.

- In 1973, America Burning, a Report of the National Commission on Fire Prevention and Control, documented many of the weaknesses in the public response to arson. Pre-

cognizing the need for explicit federal leadership, this report stimulated the creation of the National Fire Prevention and Control Administration (NFPCA) within the U.S. Department of Commerce.

- In 1974, LEAA's National Institute of Law Enforcement and Criminal Justice published a research study by Randall Noll entitled Arson, Vandalism and Violence: Law Enforcement Problems Affecting Fire Departments. Based on a nationwide survey of fire departments, Noll stressed the need for better police and fire coordination, more training to improve investigations, increased staffing for arson units, and greater recognition by government officials of the arson problem.[10]

- In 1977, a second study was commissioned by LEAA's National Institute entitled Arson and Arson Investigation: Survey and Assessment. This study, conducted by the Aerospace Corporation, surveyed arson investigators on technical aspects of arson detection and evidence preservation, reviewed a large number of journal articles, and further analyzed the data collected by Randall Noll. The study stressed the need for a uniform arson reporting system and recommended increases in training, manpower, data collection, accelerant research, and public awareness efforts.[11]

- A third National Institute study in 1978 by Stephen Tarzber is entitled Arson Control--A Review of the State of the Art With Emphasis on Research Topics. This study included interviews with many officials in the arson field as well as an analysis of state laws and policies. The study delineated a range of recommended topics for research on the legal, judicial, psychological, sociological, analytical and technological factors related to arson.[12]

- In 1976, the Battelle Columbus Laboratories conducted "Leadership Seminars for Developing a Coordinated Attack on Arson" for the National Fire Prevention and Control Administration of the U.S. Department of Commerce. These seminars included representatives of fire, police, and insurance agencies. The recommendations for action were outlined by this group in a monograph entitled Arson: America's Malignant Crime.[13] Nine specific areas of need were identified: development of a task force approach to arson in which the roles and responsibilities of each participant would be clearly defined; reclassification of arson as a Part I crime; the development of public education programs; increased emphasis on job-related training programs; improvement of data collection and analysis procedures; promulgation of uniform laws and regulations;

identification and development of funding sources; development of a larger research base on the detection and investigation of arson; and agreement on a uniform arson terminology. Similar recommendations emerged from a conference sponsored by LEAA's National Institute in July 1978.

- In February 1979, the Law Enforcement Assistance Administration, under the leadership of its new administrator, Henry Dogin, sponsored a two-day workshop to develop a national strategy for combatting the problems of arson.[14] Representatives of the U.S. Fire Administration, the insurance industry, prosecutors, city police forces, local fire departments, private security, and State Fire Marshals attended and contributed to the recommendations of the workshop. The participants called for:

  (1) the establishment of policy level task forces at the state and local level;

  (2) the improvement of data collection, analysis and problem diagnosis;

  (3) the improvement of arson investigative capabilities through training;

  (4) the development of proactive prevention strategies; and

  (5) the provision of more disincentives to arson for profit.

- In response to these recommendations, LEAA is allocating approximately $8 to $9 million in discretionary funds for a new Arson Control and Assistance Program. The program is intended to promote state, regional, county, and local arson control capabilities and to improve knowledge regarding arson control techniques and the actual incidence of this crime. In addition, approximately $715,000 of LEAA funds are being used to support arson-related training efforts conducted by the NFA, the FBI, and ATF. For example, the NFA is developing arson detection training for firefighters, week-long training classes for police and fire arson investigators, a program for prosecutors held in conjunction with the National College of District Attorneys, a guide for volunteer firefighters, and a training program on the nature and development of arson task forces. With LEAA funds, the FBI is sponsoring nationwide arson seminars, laboratory examiners' seminars on methods pertaining to arson evidence, and a national symposium of criminal

justice system personnel with arson control responsibilities. Finally, ATF is establishing training programs on the investigation of arson-for-profit.

There has also been considerable Congressional interest in arson control in recent years:

- In October 1978, the FBI, at the direction of Congress, reclassified arson from a Part II to a Part I crime in its Uniform Crime Report.

- On October 5, 1978, Congress amended the Fire Prevention and Control Act of 1974, creating Section 24 entitled "Federal Programs to Combat Arson." Under this section, the U.S. Fire Administration is charged with:

  (1) the development of arson detection techniques;

  (2) the provision of arson training and instructional materials;

  (3) the formulation of methods for collection of arson data compatible with methods of collection used for the uniform crime statistics of the FBI;

  (4) the development of programs for educating the public on the arson problem;

  (5) the development and implementation of programs for improving the collection of nationwide arson statistics within the National Fire Incident Reporting System; and

  (6) the development of handbooks to assist federal, state and local officials in arson prevention and detection.[15]

- Bills have also been introduced in the Congress to provide funding for state and local arson programs through LEAA,[16] amend the Federal Code of Criminal Justice, including its provisions relating to arson,[17] establish an Office of Fire Investigation,[18] and authorize USFA to investigate any fire anywhere in the country if it is of a serious, recurring nature.[19]

Finally, at the programmatic level, the Bureau of Alcohol, Tobacco and Firearms of the U.S. Treasury Department has become involved in the arson control effort under terms of the Explosives Control Act of 1970 and is participating in arson task force operations in 17 cities. The FBI, in addition to its role in UCR data collection, is using the Rochester

Influenced and Corrupt Organizations (RICO) Statute to investigate several arson-related unlawful acts. In addition, the FBI is providing training to state and local personnel in arson and the investigation and control of arson committed by organized crime. Further information on recent arson initiatives in the United States is contained in the U.S. Fire Administration's 1979 Report to Congress.[20]

1.4 State and Local Needs

Despite recent movements toward the development of a national response to the problems of arson, many unfilled needs remain at the state and local levels. As the preceding section has indicated, there are several recurring themes in any discussion of the requirements for an effective fight against arson. Each of these will be addressed in this report:

Data Collection and Analysis. Clearly, one of the most significant obstacles to an effective public response is the lack of reliable data on the incidence, motivations and characteristics of arson. The designation of arson as a Part I crime begins to address the broadest of information gaps. Similarly, increasing state participation in the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS), and implementation of the Property Insurance Loss Register (PILR)--see Chapter 7--are steps in the right direction. Yet to call attention to the need for additional resources and to allocate those resources wisely at the state and local levels, the collection and analysis of more detailed information on fire incidents is essential.

Information Exchange. The need to address legal barriers to the exchange of information between insurance companies and law enforcement officials is critical to the development of a coordinated attack on arson-for-profit. Although many states have enacted laws permitting this exchange, these decisions need to be communicated more widely and procedures established to ensure their effective application. Furthermore, many investigators are hampered by current practices which do not require that the names of actual owners and principals be listed on records pertaining to certain corporations and holding companies. New legislation is needed to facilitate investigators' efforts to break those corporate shields.

Interagency Coordination. The need to improve organizational relationships among police and fire departments, prosecutors, federal agencies, and insurance companies is another common theme in the literature of arson prevention and control. Exact responsibilities for dealing with criminally caused fires may vary from jurisdiction to jurisdiction but diversification of authority is common. A report prepared for the National Fire Prevention and Control Administration (now the U.S. Fire Administration) has suggested that "arson

is both like an orphan and like a child whose separated parents are fighting constantly over its custody."[21] The fire department has primary responsibility for the fire itself and usually determines the cause and origin. If arson is a possibility, an investigation may be performed by the fire department, the police department, and/or the State Fire Marshal, depending on the procedures established in each state. Sometimes more than one of these organizations may be responsible for an investigation and efforts may be duplicative or at cross-purposes with one another. In addition, insurance companies usually conduct their own independent inquiries. Finally, the prosecutor who will handle the case if charges are brought may also be involved to varying degrees in the investigation. Since a collective response is essential, the careful definition of the roles and responsibilities of all participants is particularly critical.

Training. All of the participants in the arson investigation process require highly specialized training in the roles they are to perform. An example of the consequences of the lack of adequate training can be seen in the following scenario developed by the Massachusetts arson task force:

> Firefighters at the scene of a fire in an apartment building concentrate on putting out the fire. No special effort is made to identify or preserve evidence and no witnesses watching the fire are questioned. The next day an investigation concludes that the fire started over a fuse box and the incident is classified as an electrical fire. The actual source of the fire (in a pile of trash) is not identified because it was disturbed by firemen or unnoticed by investigators.

The specialized training needed for firefighters who are first to arrive at a fire scene includes how to observe the fire scene to detect arson possibilities and preserve evidence. The fire investigators who make the cause determination must be trained in criminal investigation procedures and must be aware of rules of evidence needed for successful prosecution, including a defendant's rights. Police investigators, on the other hand, must be trained in the technical skills of identifying fires caused by accelerants. Prosecutors must know the techniques of economic crime prosecution and the particular evidentiary requirements of insurance fraud cases. In addition, they should receive training on the forensic aspects of arson investigation.

Insurance Regulation. Efforts to reduce the economic incentives for arson require a collaborative effort of public and private sector agencies. The arsonist who burns to collect the insurance is too often supported by laws, regulations or policies on the part of federal, state and local governments that have negative impacts on both the ability and the desire of the insurance industry to mount and maintain effective arson prevention and investigation programs."[22]

Arson Prevention. Finally, more information is needed on the effects and consequences of a range of preventive strategies. Public information programs, aggressive code enforcement efforts, patrol and surveillance techniques, target hardening, and citizen participation strategies are among the measures suggested or endorsed at different times by various communities. Yet, in the absence of systematic experimentation with these alternatives, the resources required to mount a preventive program may be ineffectively or inefficiently allocated.

1.5 Content Guide

In this report, each of these problem areas is discussed in greater detail in order to provide guidance to those involved in efforts to strengthen state and local arson response capabilities.

Chapter 2 discusses the kinds of planning that should precede implementation of a concentrated arson prevention program and examines the role of the task force in this planning process. Used primarily as a vehicle for coordinating the efforts of all agencies concerned with the problem of arson, the task force can play an essential part in establishing an arson program and ensuring its successful operation. The chapter outlines the approaches adopted by each of the cities visited and provides a general guide for the formation of similar groups in other jurisdictions.

Chapter 3 is specifically devoted to the administration and organization of the arson unit—the operational group responsible for day-to-day arson prevention and control activities. Issues discussed include the traditional division between fire and police agencies, appropriate roles and training requirements for both agencies, and the crucial need for prosecutorial involvement in investigative operations.

The investigation process is the subject of Chapter 4. Issues of deciding which fires to investigate for arson, the allocation of staff resources to investigative tasks, the procedures employed during the course of the inquiry, and the need for supportive technological resources are explored.

Chapter 5 provides information on prevention strategies including patrols, media campaigns, and the enforcement of existing codes.

Chapter 6 discusses the current laws on insurance, criminal penalties and jurisdictional authorities. It lists new laws that provide immunity for the exchange of information between arson investigators and insurance companies.

References to model arson penal codes and measures proposed or adopted to reduce economic incentives for arson are also provided.

Chapter 7 presents a data system that can be used to diagnose a community's arson problem and make resource allocation decisions accordingly. It includes a description of data needs, potential sources of these data, and suggested formats for their analysis.

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CHAPTER 2: THE ARSON TASK FORCE

The most important development in anti-arson efforts in the last five or six years has been the realization that a local fire department, or local fire and police, cannot be expected to control the arson problem alone. Many fire departments have found it impossible to keep pace with the increased incidence of arson--let alone experiment with measures to curb incendiary fires. The dramatic increases in incendiary fires in buildings have absorbed increasing numbers of man-hours for investigations of the cause and origin of fires, the interrogation of suspects, and the analysis of evidence. Similar strains have been placed on prosecutorial resources for case preparation and trial.

At the same time, the twofold increase in the percentage of total fires attributed to arson (10 percent according to Kendall Mcll's survey of 1971 data and 20 percent according to our survey of 1977 data), has sharpened the concern of the press, political leaders, and the general citizenry--accelerating the demand for a visible, coordinated effort to reduce arson losses. In response, government and business leaders in many jurisdictions have developed an independent, interagency capability or task force to control and direct the diverse community resources necessary for arson prevention and control. In concept, these task force efforts all share the recognition that arson is a complex crime that goes far beyond the jurisdiction of a single agency. In practice, the task force has taken on a variety of forms, depending on the local environment:

- In Philadelphia, the task force is a special cooperative effort between the police and fire investigation unit and the federal Bureau of Alcohol, Tobacco and Firearms. This investigative effort is strengthened by prosecutorial help from the U.S. Attorney's Office and has been recently joined by the Economic Crime Unit of the local District Attorney's Office.

- In New York City, the task force is a city-wide effort that includes police, fire, housing, and insurance industry authorities involved in the Fair Access to

Insurance Requirements Plan, as well as the District Attorney and Deputy Mayor for Criminal Justice. This effort has emphasized the development of proactive strategies such as arson patrols, electronic surveillance, and city ordinances reducing the profitability of arson.

- Seattle's task force includes members from eight agencies with active participation from both the public and private sectors. In its initial operations this group focused on defining roles and responsibilities for arson investigations.

- In Massachusetts, the task force is a state-wide arson prevention committee with a diverse membership organized in three subcommittees: one on the economic and government institutional factors that create a climate for arson, a second on the motivational or psychological factors that are behind noneconomic arson, and the third on developing an adequate investigative capability.

From 1974 to the present, fully 70 percent of all cities over 300,000 have adopted some variation of the task force concept. This chapter focuses on the important role the task force may take in shaping the community's response to arson and the tools it must develop to carry out this role. Specifically, in Section 2.1 the task force is defined, and its role as the major planning and coordinating group for arson prevention and control is decribed. This is followed by a discussion of the various ways in which task forces may be formed--the motivating circumstances which have prompted communities to assume this new approach to arson control. The actual structure and membership of the arson task force, its activities, and its effects in several communities are detailed in the final sections of the chapter.

2.1 The Planning Role of the Task Force

In the past, most communities responded to an arson problem with fragmented, short-term, and small scale efforts to alert citizens to the problem or apprehend arson offenders. A clear alternative to this approach is now available--one which not only attempts to improve traditional law enforcement responses, but also to monitor arson characteristics and apply appropriate preventive measures. In every case, the key to successful implementation of this new approach has been the systematic, community-wide planning carried out through the forum of the arson task force.

Simply defined, the arson task force is a cooperative effort which brings together a number of city agencies and private interests for planning purposes. Normally, the task force does not take responsibility for program operations, but rather serves to define those responsibilities among member agencies. It is set up for problem solving, resource acquisition, and agency coordination, and may also serve to stimulate accountability among its implementing agencies. Although in most cases the task force is established at the municipal level, other configurations are also used, including state-level, regional, or sub-city task forces. Since the basic activities and goals of these alternate configurations are generally identical to those of the municipal level task force, this report examines the task force from the municipal perspective.

An idealized planning process which the task force might follow in establishing a comprehensive arson program is outlined in Figure 2.1. In the following discussion, each aspect of the planning process is briefly described.

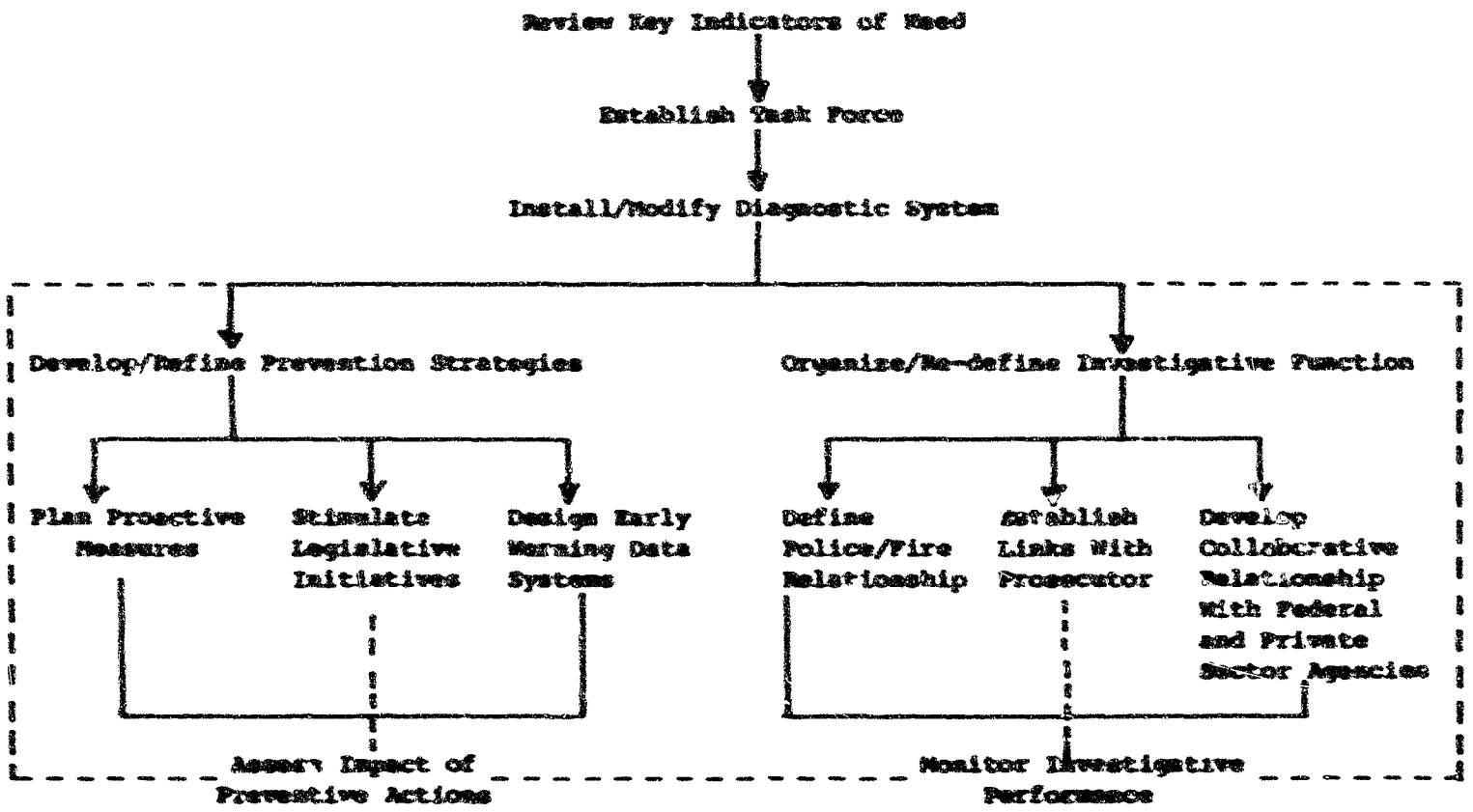
The initial step in any planning process is, of course, to determine that a problem exists and to assess the possible means to address it. In the case of arson, a review of key indicators of need may be accomplished by a police or fire agency, a concerned community organization, or the city executive's office. This needs assessment will typically include statistics on the incidence of incendiary and suspicious fires in the community, the number of fire deaths occurring annually, the dollar losses resulting from fires in the community, the most prevalent arson targets, and types of offenders apprehended for arson. The review should also extend to existing resources—current activities of police and fire departments, number of personnel involved in anti-arson activities, and the existing public and private agencies which should logically be involved in the fight against arson.

At this point, the actual arson task force may be established. The functions, membership, and structure of the task force will be largely determined by the results of the needs assessment. (Methods of establishing and operating the task force are examined in the remaining sections of Chapter 2.)

After the arson task force has been established, the needs assessment should be continued to reveal the specific characteristics of fire setting in the target jurisdiction. This can be accomplished by instituting or modifying a diagnostic data system (see Chapter 7) which can identify the nature and magnitude of the arson problem. Information from this system may then be applied in the selection or modification of arson reduction strategies. Successful development of the diagnostic system will depend on the collaborative efforts of such diverse groups as the police, fire department, tax assessor, registrar of deeds, city clerk, building department, and board of health. While the task force will have no direct responsibility for operation of the system, it can play a vital role in clarifying the types

Figure 2.1

Overview of the Planning Process



of information needed, determining what data are available, and coordinating the efforts of participating agencies to establish and operate the system.

Drawing on the resources of its member agencies, the task force is also uniquely capable of planning and coordinating a variety of prevention strategies. Proactive measures, for example, may involve such diverse activities as media campaigns, arson patrols, and counseling programs. The task force can provide the forum for assessing which measures will best meet community needs and for mobilizing the government, community, and private industry resources necessary to implement these programs. (Further information on these measures is provided in Chapter 5.)

Another prevention strategy involves the identification of new legislative initiatives which promote arson prevention, control, and deterrence (see Chapter 6). As the one interagency and community-wide group involved in the fight against arson, the task force has both the expertise and authority to identify needed reforms and lobby for their passage.

The design of early warning data systems, discussed in Chapter 7, also constitutes a prevention strategy. Similar in many respects to the diagnostic data system described above, these systems also coordinate fire service data with information obtained by other agencies. However, they seek to predict likely fire occurrences through early identification of "arson-prone" property and individuals. Again, the task force is the instrument for identification of necessary data items and coordination of interagency efforts required to establish such a system.

The second major initiative in the planning process is a redefinition and reorganization of certain aspects of the traditional law enforcement and investigative functions. Although the task force is not involved in actual program operations, it can provide the neutral forum necessary for planning such revisions. In addition, the task force can play an important role in monitoring and coordinating new agency responsibilities.

Both the police and fire department have a legitimate claim to jurisdiction over arson cases. Thus, a key planning activity of the task force will be to examine the respective roles of these departments and to assist in the establishment of an arson squad which makes use of the services and skills of both groups. Unlike the task force, which is involved only in planning and coordination, the arson unit is the operational component of the community's arson response. The major planning issues which must be resolved in formation of the arson unit include placement, size, staffing, and training. (These issues are examined in greater detail in Chapter 3.) In addition, the task force bears the primary responsibility for defining and promoting the relationship of investigative/law enforcement agencies with the prosecutors involved in arson cases.

Finally, an optimum strategy for the investigative process should be designed. Although police, the fire department, and prosecutors must take the lead in this activity, the task force may serve as the medium for their interaction. Key planning issues to be addressed must include the selection of cases for investigation, staff allocation, investigative procedures, and use of equipment and laboratories. (The investigative process is examined in detail in Chapter 4.)

2.2 Task Force Initiation

In many cities, increases in the number of incendiary and suspicious fires provided the impetus for developing a task force. In others, action resulted from fatalities or injuries to either firefighters or civilians and the entrance of organized crime into arson-for-profit. In some cases, one particularly significant event triggered the efforts of a task force.

In Philadelphia, that event was an attempted arson at the Adelphia Pipe Company. Arsonists hired to fire bomb the plant had decided to make the destruction appear as if a gas main had exploded. A large truck loaded with 50-gallon drums of gasoline had been driven into the plant over a special plank that avoided the wires of the alarm system. The gasoline drums were placed strategically throughout the entire plant, which spanned about one full city block. Each drum was tipped, allowing some gasoline to spill out, and a hot plate was placed on the spilled gasoline. Timers were attached to each hot plate and connected to a line that would be plugged into the plant's electrical system. The timers were set to allow the arsonists sufficient time to leave the scene before the explosions. To ensure that the fire would not be quickly extinguished, plastic explosives were attached to the main pipe leading into the sprinkler system. However, while these explosives also were to be detonated by the timer system, they were mistakenly hooked directly into the line with no timing devices. Consequently, when the arsonists were ready to leave the building they plugged in their network, the sprinkler system detonated prematurely, and the fire department was alerted. The arsonists fled the scene, leaving behind their tools for massive destruction.

When the firemen arrived they found all the evidence of the aborted fire bombing completely intact: the hot plates, the spilled gasoline, the 50-gallon drums spread around the plant. In fact, the potential for destruction was so great that they could not dismiss the possibility that this had been the act of terrorists. To aid in the investigation, the fire and police departments called upon the federal Bureau of Alcohol, Tobacco and Firearms (ATF). ATF felt that it had legal authority to enter the case based on the Gun Control Act of 1968 and the Explosives Control Act of 1970, which gave the agency the authority to investigate any case involving bombs or gasoline devices that had the potential to explode. This case was eventually brought

to a successful conclusion after many months of joint investigation. The cooperative arrangements that were forged became the basis for subsequent investigative efforts. Now, when the conditions of the case are right (i.e., large dollar loss and organized crime involvement or the presence of a potentially explosive device), this cooperative effort is undertaken automatically.

In Massachusetts, the efforts of a small citizens' group formed the basis for what has become an active state-wide task force. As indicated in Chapter 1, this group, the Symphony Tenants Organizing Project, was formed by individual tenants who were alarmed by the number of fires that were occurring in their neighborhood. The group was dissatisfied with the efforts of law enforcement officials to establish a cause for the fires. On their own, the tenants' group launched an investigation into the ownership and tax status of buildings, and examined the effects of rent control. They brought this information to the State's Attorney General, who subsequently proved that a conspiracy had been contrived to buy and sell property for the purpose of inflating its insurance value, to pay off law enforcement officials, to drive tenants from the buildings, and, ultimately, to collect insurance proceeds.

Some members of the tenants' group later formed a non-profit corporation to study urban problems and received a grant from the U.S. Fire Administration to develop an early warning system to identify potential arson targets. The Lieutenant Governor's Office has served as the administering agency for the grant. In order to explore the arson problem from the broadest possible perspective, a small part of the grant was used to pay the costs of forming a state-wide arson task force. This task force has produced an exhaustive list of recommendations which are being refined in order of feasibility, priority, and the availability of funding.

Similarly serious problems have triggered task forces in other cities. The burning of the South Bronx by an unprecedented number of arson fires, leading to massive destruction of the housing stock and serious erosion of the tax base, provided the basis for New York City's task force. The final impetus was the looting and arson that took place during the 1977 blackout. In Houston, the outbreak of fires in public schools accelerated that city's implementation of the task force concept. In Seattle, the impetus came from the increasing dollar losses due to arson fires, which rose from 21 to 51 percent of all fires between 1970 and 1974.

Other cities simply seized unique opportunities for cooperation or special funding that presented themselves, particularly from insurance associations. Denver joined a state-wide task force with the Independent Insurers of Colorado as a member. The task force was prompted by the successes reported by a similar program in Seattle. In Dallas, the local chapter of the Independent Insurance Agents provided funding for an Arson Awareness Campaign (multi-media coverage) as well as a reward fund.

The task force concept is not limited to large cities. Some cities with populations of roughly 100,000 have found the task force to be a useful way to combat their growing arson problems. For example, New Haven, Connecticut discovered that its number of suspicious fires had increased by 400 percent from 1973 to 1976, outstripping the fire department's capacity to cope with all the necessary investigations. A grand jury investigation culminated in a report by a New Haven superior court judge which indicated that 18 suspicious fires in a blighted neighborhood of the city over a two-year period were all economically motivated. The proceedings revealed that landlords had tried to unload worthless property through insurance fraud. Moreover, the judge pointed out that it should have been possible for municipal officials to identify all the building sites as high risk arson targets before the fires were ever set: frequent reports of building and housing code violations, long-standing property tax arrearages, high or increasing vacancy rates, and the limited and declining means of the buildings' tenants provided all the necessary warning signs. Four months later New Haven joined a growing list of cities by implementing the first phase of its task force.

2.3 Task Force Leadership and Sponsorship

While the task force itself is composed of several member agencies and organizations, one of these participating members must generally assume sponsorship of the task force for administrative purposes. For similar reasons, one specific individual within the group should be designated as the leader or chairperson.

Choice of both the sponsoring agency and task force leadership may have important implications for the effectiveness of the group, particularly in terms of its ability to marshal the support of the entire community and provide a strong mandate for cooperative action. Thus, the following issues should be addressed when considering sponsorship and leadership options:

- the ability and willingness of candidate agencies to make the commitment of resources which is demanded of the sponsoring agency;
- the administrative authority of agencies, as demonstrated by their ability to secure cooperation and action from all sectors of the community and government; and
- the nature of interagency relations in the community and the potential repercussions that specific sponsorship and/or leadership placements may have for the participation and cooperation of other agencies.

Generally, the agency which meets the criteria of resources, authority, and neutrality is the Mayor's Office or City Council. Both would have the administrative authority to marshal support of all agencies, while neither would raise the potential for interagency conflicts or "turf" considerations which might arise under police, prosecutor, or fire department sponsorship. In addition, any involvement of the Mayor or City Council would affirm the notion that arson is not solely the problem and the responsibility of law enforcement agencies. In the sites visited in the course of preparing this report, sponsorship by the Mayor is in fact the most common approach. Typically, the Mayor assigns a chairman with authority to speak for the city and to secure the cooperation of all participating agencies. The chairman is a Deputy Mayor or individual functioning at that level, although in some cases the Fire Chief or Commissioner himself may be appointed to lead the task force effort.

Although less common, other sponsorship and leadership arrangements may be equally viable in some communities. The Battelle Conference report referenced in Chapter 1 suggests, for example, that the District Attorney may assume such a role. Participants in the conference noted that the task force concept involves the development and definition of responsibilities for investigation and that the prosecutor can use his offices effectively to coordinate the functions of police and fire departments. This office may well provide the most effective leadership in sub-city areas where resources must be devoted primarily to arson control through investigation and only secondarily to preventive programs. In New York City, for instance, segments of the Bronx have been systematically destroyed by incendiary fires, requiring an intensive, localized, investigative effort. There, the District Attorney leads the Bronx Coordinated Arson Program to provide an immediate command for this area of the city under the overall direction of the city's arson force.

2.4 Task Force Membership and Organization

The membership and organization of task forces vary greatly from one city or state jurisdiction to another. Membership need not follow a prescribed standard to produce an effective working group. However, the representation of certain agencies can provide unique advantages. For example:

- Fire department representatives can coordinate fire department efforts and provide valuable information on the technical determination of fire cause and origin. Because their primary function is the prevention and suppression of fires, members of the fire department display an overriding commitment to the deterrence and apprehension of arsonists.

- Police department representatives can provide critical information on the technical aspects of criminal investigations of arson and related crimes. They can also direct the coordination of police efforts with others involved in the investigation process.

- Representatives from the Prosecutor's Office are responsible for reviewing and coordinating the prosecution of all arson cases, and ensuring adequate involvement at the earliest stages of case investigation.

- Banking and insurance industry representatives can assist in implementing industry programs to complement government and community efforts, especially if economic disincentives are to play a part in an arson control strategy.

- The cooperation of building and health department representatives is critical in any efforts to monitor code violations or seal or destroy vacant buildings.

- Representatives from city, state, or federal agencies such as the State Fire Marshal or the FBI can provide vital funding and assistance in prevention and investigation efforts.

- Representatives from community groups, schools, and human service organizations can establish programs capable of identifying and controlling many aspects of the arson problem through counseling, education, and information gathering efforts.

It is critical that the representatives of each agency have the power to commit that agency to donating resources or adhering to policies adopted by the task force. In addition, each member should have a specific role with defined obligations and responsibilities.

Individual task forces may be composed of representatives from several of these agencies or from only two or three. At one end of the spectrum, Massachusetts' state-wide task force includes:

- 7 fire department and law enforcement personnel from the cities and towns of eastern Massachusetts;

- 14 representatives of various state agencies including: the Attorney General's Office, the State Police, the State Fire Marshal, the Departments of Youth Service, Mental Health, Public Safety, Insurance and Banking;

- 2 officials from Boston city agencies;
- 10 representatives of state-wide associations including the FAIR Plan, savings banks, and professional firefighters;
- 4 members from individual insurance companies and banks;
- 2 District Attorneys;
- 13 representatives of private non-profit community agencies; and
- federal agency officials.

Because the Massachusetts task force represents an unusually large and diverse membership, it was organized into three subcommittees, each composed of about 20 members and focusing on a different aspect of the arson problem: economic and government institutional factors, motivational or psychological factors, and investigative capability. The number of representatives serving on most task forces, however, is not sufficient to necessitate the type of formal internal organization which was adopted in Massachusetts.

At the other end of the spectrum from Massachusetts, Dallas' task force primarily involves the fire department in a special cooperative effort with the insurance industry. Other task forces generally fall between Massachusetts and Dallas in terms of size and diversity of membership.

Seattle's task force provides a particularly forceful example of the benefits of multi-agency participation. It is chaired by the Fire Chief and includes members drawn from eight agencies: the Mayor's Office, the fire department, the police department, the Prosecutor's Office, the insurance industry, the Sheriff's Office, the Chamber of Commerce and the Public Safety Committee. Each agency has a specific function and contribution to make as part of the task force.

The Seattle task force provides each of these groups with an opportunity to have an impact on the arson problem in a way that each can be the most constructive. The involvement of prosecutors in the task force has proven to be particularly important. As a direct result of their participation, the Prosecutor's Office made a commitment to assign one staff member as the sole contact for arson cases. Thus, arson cases are no longer simply given to the next available assistant prosecutor but are handled by a specialist in this area. In addition, the Prosecutor's Office has made an increased commitment to provide training on the legal aspects of arson case preparation.

New York City's task force is similar in composition to Seattle's. Chaired by the Deputy Mayor for Criminal Justice, membership includes the fire department, police department, the District Attorney, the department of housing and the FAIR Plan. For the most part, the functions performed by each of the city departments are the same as those in Seattle. Representatives of the housing department are particularly important in New York because one major prevention strategy involves boarding up and razing vacant and vandalized buildings. These buildings must be condemned by the building department before the fire department can take final action.

The FAIR Plan is also represented in New York because so many of the buildings in the city cannot meet conventional insurance risk standards. The FAIR Plan guarantees that any building owner whose property meets certain minimal standards may obtain insurance from a pooled fund with financial interest shared by all the major building insurers. While this plan is beneficial for poor homeowners in declining neighborhoods, it may also guarantee insurance to those who are unscrupulous or who find themselves in unexpected financial difficulty and might be tempted to "sell" their property to the insurance company for substantially more than its actual market value. Thus, the cooperation of the FAIR Plan is important in seeking ways to reduce the incentive for fraud fires in an area where the insurance industry is particularly vulnerable.

New Haven originally began its task force under the leadership of the Mayor or his chief administrative officer with representatives from the fire department, the police department and an outside consulting firm for technical assistance. After the initial planning phase was complete, it became obvious that representation from the insurance and banking industries was necessary to wage an effective campaign against arson resulting from decaying neighborhoods.

2.5 Task Force Activities

As the preceding sections have implied, the primary function of a city- or state-wide task force is one of team building—forging interdepartmental working relationships that will provide the basis for a continuing collaborative effort to combat arson. More specifically, the task force must become involved in planning, problem solving, resource acquisition, and agency coordination. As a planning vehicle, it must respond to the inadequacies of present anti-arson strategies which are documented through needs assessments. Problem solving frequently involves the resolution of jurisdictional problems which can impede the investigation process. Resource acquisition entails the procurement of additional supplies and funding from various government and private sources, as well as the gathering and allocation of existing resources. As a body for agency coordination, the task

force is charged with determining the distribution of responsibility between member agencies and providing a forum for information dissemination. It is also highly desirable for the task force to encourage general public awareness and involvement. The Seattle task force, for example, has generated a great deal of publicity and focused public opinion on the arson problem. This has been important to efforts to obtain local citizen cooperation, both in the investigation of cases and in campaigns for arson prevention.

In the early stages of a task force operation, intensive communication will normally be required in order to reach a common understanding of the scope of the problem and the roles of the agencies represented on the task force. Weekly meetings are not uncommon at the start of a task force effort and throughout the problem definition and initial planning stages. Once a response program is established, the intensity of the task force effort generally diminishes: meetings are no longer held weekly but take place only when new problems arise or new funding initiatives are developed. This pattern has prevailed in many cities:

- In Seattle, the task force met once a week for twenty weeks to discuss and develop proposals to improve the city's capability to investigate arson. At the conclusion of this initial planning phase, a report was submitted to the Mayor detailing the final consensus of the task force on the organization of an arson investigation unit and outlining an arson investigation training program. These recommendations were approved by the Mayor and City Council and the task force then turned its attention toward the development of a research program on arson in King County and the exploration of techniques for arson prevention.

- In New Haven, the task force met weekly for the first six months and then, after filing a complete report of anti-arson activities during that period, began to meet less frequently. The initial report focused on the organization of the investigation function and the development of a supporting information system. The task force is now convened only to address new developments or to discuss new initiatives that require funding support. However, the working relationships that were established during the original task force continue to form the basis for the city's day-to-day management of the arson problem.

- The New York task force, first established in 1975 to coordinate the city's arson control efforts, was noted for instituting arson patrols and surveillance activities, coordinating the demolition of vacant buildings that had become arson targets, and developing a neighborhood stabilization program. With changes in leadership, these

activities began to wane and the long tradition of conflict and rivalry between the police and fire departments resurfaced. In 1977 the task force was reformed under a slightly different name and charged with resolving the jurisdictional conflicts. Several months later the task force recommended that the police assume responsibility for the continuing investigation function. In view of the magnitude of the coordination problems city-wide, the task force has continued to meet on a regular basis to review the city's various arson initiatives.

Although the reports of a task force need not be extensive, a written record of all agreements and recommendations is clearly advisable so that responsibilities are clear and the plans can live beyond the tenure of the original members. Even after the initial planning phase, regular meetings are also advised. Although formal action may not be required unless a new problem or funding opportunity arises, periodic meetings can serve as a forum for monitoring the progress of a city's arson initiatives and strengthening the collaborative relationships established at the outset.

2.8 Some Accomplishments Stemming from a Focus on Arson

A community focus on arson has generated considerable progress toward combatting the arson problem in many jurisdictions. Adequate funding, equipment, and manpower to complement anti-arson prevention and investigation efforts will become a reality more readily if a task force has been established to fulfill the planning function and the community has demonstrated interest and concern. In many cases, new requests for funding, whether from city, state, or federal sources, were endorsed by the task force and this may have been instrumental in obtaining such funds. For example, many fire departments received at least a modest amount of new resources subsequent to the formation of the task force. Those resources often took the form of direct funds or a new cooperative arrangement with an outside agency. The survey of cities undertaken for this report indicated that 50 percent of fire departments received additional staff as a result of the task forces, 56 percent received help through a new organizational structure, and 33 percent received new equipment. The paragraphs which follow describe the accomplishments of several cities which were visited in the course of preparing this document.

In absolute terms, New York City allocated the most manpower to its new anti-arson effort. It must be remembered, however, that New York City experiences six times the number of arson fires of the next largest city. Through city government funding, New York received 80 additional fire marshals, the latest in surveillance equipment, including electronic intrusion detection devices, and vans used for surveillance. In addition, a total of $1,125,000 in grant funds was obtained from LEAA to provide top staff to the task force, formulate a data gathering capability, and purchase some of the equipment.

New York City mobilized a substantial effort to combat arson in its la[illegible] most decayed urban neighborhoods. That effort consisted of organizing the new fire marshals and an equivalent number of city police officers to conduct investigations, surveillance, and arson patrols. At the same time, a major effort was undertaken to seal vacant buildings and, in the most extreme circumstances, to condemn and demolish vulnerable property. These tasks were accomplished through the coordinated effort of the central task force staff, the city housing department, and the city health department. Federal assistance financed the actual demolition effort.

The computer is an important aspect of the anti-arson program in New Haven, where a model Arson Warning and Prevention Strategy (AWPS) is being developed. The model will identify high risk buildings or groups of buildings as targets for short-term deterrence strategies such as arson patrols and contacts with owners to encourage rehabilitation of their properties. This model will be completed by the Fall of 1979 and may be applicable to other cities of similar size. (Further information may be obtained from the New Haven Fire Department.) New Haven has also assigned additional staff resources from the police department to arson investigation.

The Seattle program also uses a computer to deploy arson patrols and has achieved notable success in generating publicity to arouse the general citizenry to combat arson. The public education effort includes a state-wide proclamation of "arson month" during which the radio and television stations do free spots on arson, and operation of a toll-free number which citizens use to phone in information on recent fires and tips on possible future fires. The Washington State Insurance Council provides the funds for this hotline and has contributed $5,000 a year in reward money for arson informants. (See Chapter 5 for further information.) The insurance industry has also established funds for new training programs.

In Dallas, a new combustible gas detector was purchased and a $5,000 reward fund was established after the formation of a task force.

Philadelphia concentrates on the investigation and prosecution aspects of arson control. As a result of its focus on arson, the city government provided the fire department with four additional full-time police department detectives to serve as liaison between fire investigators and precinct detectives. In addition, a new gasoline detection component was purchased along with a new investigative van. The city has developed a close cooperative arrangement between the police department, the fire department, ATF, the U.S. Attorney's Office and the Philadelphia District Attorney's Office. ATF authorities take over the complicated fraud fire cases involving either large losses or repeated losses by the same owner. They are able to devote more time to a case (an investigator can work full-time on a case for six months if necessary) and have broader authority to gather evidence. In bringing

cases into U.S. District Court, they also have a different set of charges that may be brought (e.g., mail fraud).

The Massachusetts task force has adopted a different approach. As described in Section 2.4, the committee has very broad representation. It was formed as much to seek general solutions to the arson problem as to forge working relationships. The task force charged its three subcommittees with producing recommendations for strategies to prevent arson and improve investigation. The subcommittees composed a number of scenarios (as illustrated in Chapter 1), which form an interesting basis for looking at fires that share common characteristics and suggest common solutions. The Massachusetts task force produced a total of 172 recommendations for preventing and detecting arson which appear in its draft, "Report of the Massachusetts Arson Prevention Task Force," issued by the Office of Lieutenant Governor Thomas P. O'Neill III, on December 13, 1978.

The recommendations included:

- providing State Fire Marshals with access to the data banks of insurers with appropriate safeguards;
- conferring on insurers immunity from punitive damages if payment of claims is withheld due to suspected arson;
- requiring insurance companies to make inspections prior to issuing policies;
- allowing FAIR Plans to deny or cancel policies for buildings on which taxes are not paid and building code standards are not met;
- establishing "code enforcement coordinating councils" composed of housing, health, fire, police, and urban development officials;
- adopting the Pittsburgh Plan, whereby tenants in housing with serious code violations may pay rent to an escrow fund which may only be used by the landlord to correct the violations; and
- urging HUD to adopt a plan to reduce the length of time that abandoned FHA-insured buildings remain vacant.

The diversity of these recommendations clearly demonstrates that states and municipalities that are tackling the arson problem are willing to consider the complex origins of an arson problem. More than a law enforcement problem, it is a problem that requires government officials to confront the

central issues of urban decay and the myriad regulations which govern the quality of city life. As a forum that brings together a variety of agencies with many different perspectives, the task force can play a crucial role in recognizing and responding to those issues.

2.7 Summary

Regardless of where the specific authority to investigate suspicious or incendiary fires may lie, arson is clearly a cross-jurisdictional problem that requires a multi-agency response. The organization of a task force is a firm acknowledgement that no single agency can control an arson problem without the assistance and cooperation of a variety of public and private sector groups.

The following ideas for the organization and management of a task force have been suggested by the experience in selected sites:

(1) Task force sponsorship should be vested in an agency with broad executive authority in order to stimulate the cooperation of all relevant public and private sector organizations. In most jurisdictions, this can be accomplished by organizing a task force at the direction of the Mayor or City Council.

(2) Similarly, task force leadership should normally be held by an individual in an executive position--a Deputy Mayor or individual functioning at that level. Where a favorable climate for cooperation exists between police and fire departments, the Fire Chief or Commissioner may be appointed to lead the task force effort.

(3) At a minimum, task force membership should include representatives from police and fire departments, as well as state and local Prosecutor's Offices and the insurance industry.

(4) Depending on the nature of a jurisdiction's arson problem, the participation of building and housing departments, the banking industry, community groups, youth agencies, and related human service organizations is also advised. While these groups will not be critical to any efforts to define investigative responsibilities, their participation is essential in sessions devoted to planning preventive strategies.

(5) Each member should have a specific role with defined contributions and obligations.

(6) The representatives of each agency should have the authority to commit their agency to contributing resources and implementing policies required by the task force.

(7) Enough publicity should be generated to gain quick cooperation from whomever must be called upon to aid the anti-arson effort, whether they are institutions outside the task force or the general citizenry.

(8) A written record of all agreements and recommendations should be maintained by the task force. In addition to the periodic reports that may be managed by the implementing agency, it will be useful to confirm the roles and responsibilities of participating agencies in memoranda circulated to all members.

(9) Frequent meetings will be required during the initial planning phase that will normally be devoted to problem identification, the resolution of any outstanding jurisdictional issues, and the development of related training plans. Following this phase, a regular schedule of meetings should be held to monitor and refine the initial plans, to work on the development of longer-term preventative strategies, and to maintain an environment for continuing interagency cooperation.

CHAPTER 3: ARSON UNIT ORGANIZATION AND ADMINISTRATION

An effective arson control effort requires two major components: a planning and coordinating body (the arson task force) which establishes the community's arson response priorities and facilitates their implementation; and an operational component (the arson unit) which is responsible for day-to-day arson prevention, control, and investigation activities. Chapter 2 focused on the development and operation of the task force. In this chapter, the organization and administration of the arson unit are examined.

Since the daily operations of the arson unit draw on the traditional capabilities of police, firefighters, and prosecutors, key issues in the establishment of the unit must include: (1) the degree and nature of police and fire department involvement in the arson unit; and (2) the relationship of the prosecutor to the arson unit. Thus, the initial sections of this chapter focus on these points. The remaining sections explore such internal concerns as the organizational placement of the unit, unit size, functions and responsibilities, personnel recruitment, and training.

3.1 Distribution of Responsibility Between Police and Fire Departments

Arson presents a unique situation in the field of public safety. In one sense, it is obviously a concern of the fire department--it involves, after all, a fire incident which must be contained and investigated like any other fire. In another sense, however, it is a concern of law enforcement, since it involves a crime which must be investigated. Given the legitimate interest of both departments, it is not surprising that the optimal distribution of responsibility for arson between those agencies has been a matter of some debate--and in fact, some bitterness. Composition of the arson unit, as the operational group responsible for arson investigations, has naturally been included within the scope of the discussion.

Three methods of distributing responsibility between police and fire departments are currently being used in the United States. In the first, the fire department assumes all responsibility for arson investigations, from the cause determination through lengthy and complex criminal investigations. The second approach is to place exclusive responsibility for arson investigation with the police. Finally, communities may choose to divide investigative responsibilities among the police and fire departments. Included within this latter option are a number of distinct approaches for allocating specific investigative tasks.

Data from the survey conducted in the course of developing this document make it clear that the responsibility for arson investigation usually resides either with the fire department solely or with the two departments jointly. The police alone are in charge of investigations in only 3 percent of the cities surveyed. Larger cities are more likely than small ones to locate the investigative function in the fire department alone, primarily because the budgets of departments in small cities tend to make shared responsibility a necessity. About half (51 percent) of the cities over 150,000 assign fire departments full responsibility for arson investigations, while only about one quarter (24 percent) of those under 150,000 do so. The specific advantages and drawbacks associated with each of these options are examined below.

3.1.1 Fire Department Responsibility

Many believe that the fire department should be solely responsible for arson cases because its personnel are more experienced in determining the causes of fires and are more committed to apprehending arson offenders. In addition, exclusive fire department responsibility for arson can ensure that investigators have at least a basic familiarity with forensic aspects of the fire investigation and that lines of communication and authority during the investigation are simple and direct.

Of the sites visited during the field study for this program model, only Dallas and Denver place responsibility for arson investigations exclusively on the fire department. Firemen recruited to the arson squad receive police training and are sworn as police officers. In each city the fire department had in the past relied on police department cooperation in conducting arson cases, but problems of coordination and jurisdictional disputes impaired the working relationship. Officials concluded that direct control and clear lines of authority within the fire department were more important than the use of police department expertise and manpower. This arrangement has not precluded cooperation with the police in arson-related matters other than on-scene investigation, however. In Denver, for example, the arson unit has access to police laboratories, forensic equipment, and records, and when arson cases also entail major felonies such as homicide, the police are

automatically involved. In addition, police training programs are readily available to fire officers.

Unfortunately, there are also disadvantages associated with this approach. Perhaps the most important of these is that fire department investigators may lack some of the skills required for criminal investigation. As one veteran fire investigator commented, "Firemen are used to helping people in a friendly way. They are good at community relations and talking up fire prevention, but are not good at playing Columbo." In fact, few fire officials have the training or experience necessary to interrogate recalcitrant suspects or elicit information from reluctant witnesses. Clearly, then, extensive training in criminal investigation procedures is required if the investigative function is to be located solely within the fire department. (Training practices in a number of cities are discussed in Section 3.3.)

2.1.2 Police Department Responsibility

Among the large cities which responded to the survey questionnaire, only Chicago and Milwaukee give full investigatory responsibility to the police department. Here arson is viewed primarily as a crime problem requiring police expertise and clear lines of command rather than the skills available in the fire department.

Generally, however, placement of arson investigations with the police department only is viewed with little enthusiasm. According to fire officials, locating the investigative function entirely in the police department may pose substantial problems:

- Response time to the fires by police may be slower than it would be for fire officers.
- Detecting arson requires training and experience that a police officer usually does not have.
- Police are reluctant to do the dirty work of moving burnt timbers and debris to uncover evidence at the fire scene.
- Fire departments seldom get any feedback on the investigations from police investigators and hence find it difficult to develop preventive strategies.
- Arson investigation is only one of many competing demands on police time and may receive a lower priority than other criminal matters.

3.1.3 Shared Responsibility

A final option is to share responsibility for the arson investigation between the police and fire departments. Advantages of this approach are obvious: the special expertise of each group may be applied to arson investigation; training needs for both groups will be reduced; neither fire department nor police department budgets will need to be greatly expanded; and the resources and support services of both departments (records, equipment, laboratories, etc.) may be applied to the arson investigation.

The difficulties that may be encountered in the attempt to share responsibility for arson are also self-evident. Police and fire department relations have often been characterised by "turf" battles resulting from interagency jealousies or the shirking of responsibilities by both agencies. These turf problems may be exacerbated if police personnel are asked to report to fire department officials, or if firefighters must answer to police management. Finally, communications between the two agencies have traditionally ranged from poor to nonexistent. It is clear that a successful attempt to share responsibility between agencies must first solve the problems of interagency jealousy, turf conflict, coordination, and communication.

Many cities have successfully resolved these problems and constructed viable and effective organizational structures in which the police and fire departments share responsibility for arson investigations. Generally, such joint participation of police and fire departments follows one of two models:

- Police and fire officers conduct investigations as a team; both departments are involved in all phases of the arson investigation.

- Police and fire officers clearly divide responsibility for the arson investigation. While fire investigators assume the initial cause and origin investigation, responsibility for continuing investigations is either divided between police and fire officials or placed exclusively with the police department. (For further information on arson investigation, see Chapter 4.)

Seattle and New Haven provide examples of the first method. In Seattle, the 11-man arson unit is composed of two police detectives and nine fire department investigators. Fire investigators receive formal police training as well as specialized training in fire investigation. They also learn criminal investigation techniques from police detectives who work with them in the field. In turn, the detectives (who are members of Seattle's police force but are supervised by the fire department) are instructed in arson detection by their partners. Both sides have benefitted from this collaboration: "Fire investigators say that because of the new respect and the personal contacts

they have built up with the police, they can obtain information, manpower and equipment more easily than they did before. Also having detectives as their partners helps them simply because they know their way around the police department better than firemen." The police, in turn, have commented on their "pleasant change of role" from cops, who are generally perceived as adversaries, to firemen, who are thought of as helpers. In this role, they have received more information, cooperation, and sympathy than they might otherwise expect.

While police and fire department members of Seattle's arson unit are involved in all phases of the arson investigation, the police detectives are also responsible for ensuring close coordination with the police department and optimum utilization of its resources (including additional manpower for stakeouts, access to police records, laboratories, and training facilities). Under this arrangement, the police department works with the arson squad on arson cases involving burglary, larceny, and homicide, while bombings are investigated by the police bomb squad. The arson unit conducts all other arson investigations, requesting additional assistance from the police department as needed.

In a smaller city, New Haven, the arson unit is comprised of two police detectives, two fire investigators, and a fire department lieutenant. A team consisting of one detective and one fire investigator works on each arson case, following it through to prosecution and conviction, if appropriate. Assistance from the police department is requested in major arson cases, where manpower requirements are heavy, and in cases where felonies other than arson are involved. Since New Haven's unit is small, the team approach has provided a stronger investigative capability than either department could support on an independent basis.

Philadelphia provides an example of the second method of sharing responsibility (clear division of investigative duties among police and fire department personnel). There, coordination of the arson investigation is enhanced by the liaison work of four police detectives included in the 23-man arson unit. Once a fire investigator determines that a fire has been caused by arson, the case is turned over to one of the detectives, who reviews it for probable motive. If the fire seems to be the result of juvenile vandalism or revenge in the wake of a domestic argument, the case will probably be turned over to the police, who can use their networks of neighborhood contacts to advantage. The arson team detective will monitor progress on the case and ensure that it is concluded properly. On the other hand, if the fire seems to be the result of arson-for-profit or the work of a pyromaniac operating in several sections of the city, investigators in the arson unit will handle the case, sometimes with the assistance of agents from the federal Bureau of Alcohol, Tobacco and Firearms (ATF). This appears to provide a useful model for larger units (15 professionals or more) responding to a diversity of arson cases. Within this arrangement, the unit is constantly aware of the progress of a given case without overburdening fire investigators with all continuing investigations.

In New York, both fire marshals and the police traditionally had the authority to investigate arson. Lack of coordination between the two departments, however, has caused many problems, prompting the formation of a new program in the Bronx. Under this program, fire marshals are charged with determining the cause and origin of a fire; if arson appears to be involved, the case is turned over to the police department. The police then work closely with the Bronx District Attorney's office, which has a special unit for prosecuting arson cases (described in more detail in Section 3.2).

Of the three approaches examined above--fire department responsibility, police department responsibility, and joint responsibility--the joint approach appears to be the most promising. Unlike the other two, this method has the potential to offer the most effective arson response for the smallest investment in new resources (personnel, equipment, training, and facilities). However, this approach does demand an investment of a different sort: an ongoing commitment to cooperation and coordination among the agencies involved. Given the poor interagency relations in some areas, communities should remain flexible when designing this aspect of their arson response. The optimum distribution of investigative responsibility will ultimately depend on the manpower commitments that each group is willing to make and the nature of interagency relations in that community.

3.2 The Role of the Prosecutor

Frequently, fire investigators complain that prosecutors in the local District Attorney's Office are overcommitted and unresponsive to arson cases--that the attorneys take time to acquaint themselves with only the basic facts of a case without examining physical evidence, reviewing expert testimony, coaching witnesses, or piecing together circumstantial evidence. Thus, the definition and coordination of the roles of police and fire departments must be only the first organizational issue to be resolved in the development of the investigative function. Of equal importance is the role of the prosecutor and his relationship to the arson unit.

Prosecutorial involvement in the fight against arson may take place on several levels. The most basic of these is to encourage prosecutors' involvement in planning and coordination by securing their participation in the arson task force. Issues relating to task force membership and activities are examined in Chapter 2. At a second level, the Prosecutor's Office may become more actively involved by dedicating specific resources (such as a special prosecutor) to these cases--an approach taken in Philadelphia, Seattle, and Dallas. Finally, on a third level, prosecutors may take a lead

role in the community's arson response, directing the arson investigation and prosecution, as is the case in the Bronx Coordinated Arson Program.

The special prosecutor approach offers a number of advantages. First, it ensures that arson prosecutions will receive the priority they deserve. Second, it can guarantee that prosecutors trying arson cases will have (or will develop) the necessary expertise in these prosecutions. Finally, it can give arson investigators ready access to needed legal advise during the course of their investigations.

The experiences of cities using this approach bear out its value. In Philadelphia, for example, the arson prosecutor is affiliated with the Economic Crime Division, which focuses on insurance fraud cases. Typically, these cases are very difficult to prosecute, as there is only a paper trail of evidence implicating the owner. This evidence must be presented carefully to convince a jury that the defendant planned and carried out the destruction of his own property. Gathering evidence in such cases may involve many months of investigation and extensive documentation. Presenting the evidence to an unsophisticated jury may require weeks of planning and the involvement of the prosecutor in the evidence-gathering process. The Economic Crime Division in Philadelphia provides both the time and prosecutorial involvement necessary to prepare arson cases. One prosecutor is assigned to cover all arson cases. He is able to spend time with the investigators on a regular basis, is constantly briefed on new cases that are in progress, and gives direction on the type of evidence that would be most appropriate to aid his prosecution.

As noted in Chapter 2, the Seattle task force also saw the need for the full-time assignment of a prosecutor to cover arson cases. Seattle fire investigators had previously been forced to "walk the halls" of the Prosecutor's Office to find an attorney willing to prosecute their cases. Now the prosecutor assigned to the task force has the responsibility for reviewing and coordinating the prosecution of all arson cases. In addition, he helped design Seattle's training program for arson investigators.

One issue which must be considered when planning the prosecutor's role in arson cases is the possibility that arson investigators may resist any sudden upsurge of early prosecutorial interest or involvement in their activities. While early involvement may be exceedingly valuable--particularly in complex arson-for-profit cases--such participation may be viewed as an infringement upon the "turf" of the arson investigator. Discussions among the arson task force members and frequent contacts between the special prosecutor and arson investigators may help to forestall such problems.

In Bronx, New York, a different approach to prosecutor involvement in arson investigations has been taken. There, frustration with the inability of the fire and police departments to develop a satisfactory working relationship,

combined with the continued high incidence of arson in the Bronx, led to the development of the Bronx Coordinated Arson Program (BCAP) in the summer of 1978. Confronted with an intense arson problem, the Bronx District Attorney persuaded the New York City arson task force to support an investigation and prosecution effort controlled by his staff and operating in the section of the Bronx experiencing the highest incidence of arson. As noted earlier, under this plan fire marshals investigate only the cause and origin of the fire. The continuing investigation of all identified arson cases is the responsibility of police detectives (all selected from the department's organized crime control force) with assistance from investigators and prosecuting attorneys from the D.A.'s Office. An Assistant District Attorney supervises the investigative process as overall coordinator of the BCAP.

The police and District Attorney's Office believe that this experimental program is a success because it reduces jurisdictional conflicts, promotes a more professional approach to the investigation process, and improves the prosecution's court testimony. They also consider the police more experienced than fire marshals at gathering evidence and testifying in court and cite their better arson arrest and conviction record to support this contention. At the same time, the BCAP coordinator emphasizes the important role of the fire marshal in cause determination and believes it can be used to best advantage if marshals are not overburdened with continuing investigations. Fire marshals, on the other hand, do not support these contentions. They believe that their knowledge, skills, and commitment to arson prevention and control provide a force competent to handle the entire investigation process. They are also less supportive of the new effort because it does not emphasize the preventive measures employed with some apparent success in the South Bronx and Brownsville/Bushwick sections of the city. They cite the fact that fires in the target area have increased 11 percent since the project began, with no increase in arrests. BCAP officials counter that their efforts were specifically targeted on an area with a rapidly increasing arson rate, and that without their intervention fires would have increased at a much greater pace.

Given New York's continuing history of jurisdictional disputes between police and fire marshals, the catastrophic arson losses suffered in the South Bronx, and the inherent difficulties of achieving day-to-day cooperation through a city-wide task force, there was a clear need in this sub-city area to place the investigative function under the executive control of the D.A.'s Office. While a similar arrangement may be advisable in cities experiencing a comparable combination of problems, under most circumstances a formal link between the city's arson unit and the District Attorney's Office will provide the best means of coordinating investigative and prosecutorial efforts. If a liaison position is established to coordinate fire and police investigative efforts, this same position can provide the link to the prosecution. Combined with the assignment of one or more prosecutors to work regularly on arson cases, this arrangement can facilitate the effective involvement of the prosecutor in the continuing investigation.

In addition to establishing a link with local prosecutorial resources, communities should not overlook opportunities to collaborate with federal prosecutors. Some U.S. Attorney's Offices across the country have made a commitment to prosecuting arson cases, particularly cases in which it is easier to prove violation of a federal law (such as mail fraud or laws of interstate commerce) than to prove arson under a state law. The involvement of the U.S. Attorney's Office can be especially valuable in states which do not have a grand jury system, and hence do not give the prosecution the opportunity to subpoena evidence and obtain testimony from key witnesses prior to trial. In these cases, the Federal Grand Jury system may provide a valuable resource.

3.3 Unit Location and Size

Under ideal conditions, placement of the arson unit and the number of personnel assigned to the unit would be determined solely by the demands of the arson prevention and control effort. Unfortunately, this is seldom the case. More frequently, the amount of available resources, the nature of interagency relations, and concerns for administrative convenience dictate these characteristics of the arson unit.

The most basic placement decision for the arson unit is the choice of the sponsoring or supervising agency. While the responsibility for the investigation function may be shared with the police department, in most cities the arson unit is located in the fire department and headed by a fire official. This is not the only option, however. In some cities (e.g., Chicago), the unit is currently under the jurisdiction of the police, while in the Bronx, the District Attorney's Office supervises all arson investigations. As described in the preceding section, however, choice of a prosecutor placement in the Bronx resulted from several atypical circumstances not likely to be repeated in other jurisdictions.

Of these three options, supervision of an arson unit by the fire department appears to be preferable. Because its primary purpose is preventing and fighting fires, the fire department possesses a degree of commitment to combatting arson that cannot be found elsewhere. Moreover, fire officials are in the best position to receive immediate information about fires of suspicious origin and to dispatch investigators to the scene quickly. They are also readily able to collect data on arson, develop arson prevention programs, and provide public information on the subject.

Assuming placement within the fire department, a choice must then be made concerning the location and status of the arson unit within the department's structure. Generally, one of the following approaches is taken: placement

in an existing division; establishment of the arson unit as a separate division; or creation of a special status for the arson unit within the department structure.

The decision regarding which organizational location is best for any given arson unit is to a great extent a function of the manpower resources available. Thus, units of less than 7 full-time personnel will most likely be placed within existing divisions. The optimal approach for larger size units is the establishment of a separate division; however, if this is not feasible, departments should consider assigning the arson unit special status within the organization, (for example, by having the head of the unit report directly to the Chief). This latter approach has been taken by such cities as Seattle and Denver.

Since most arson squads are small (as demonstrated in Table 3.1), they are typically located in the fire prevention division, along with code enforcement, in part because inspection is basic to both. The arson squad is generally supervised by a captain or lieutenant who reports to the fire marshal in charge of the division. In many instances, code enforcement activities and arson squad functions are complementary. Inspectors checking for compliance with fire safety codes can also assess the risks of arson while making their rounds. Moreover, fire inspections conducted to determine cause and origin can produce recommendations for preventing accidental fires as well as detecting arson. However, in the cities visited for the report, placement in the fire prevention division seemed to result in inadequate attention to arson prevention. Publicity tended to concentrate on such things as the usefulness of smoke detectors and the dangers of careless smoking.

Table 3.1

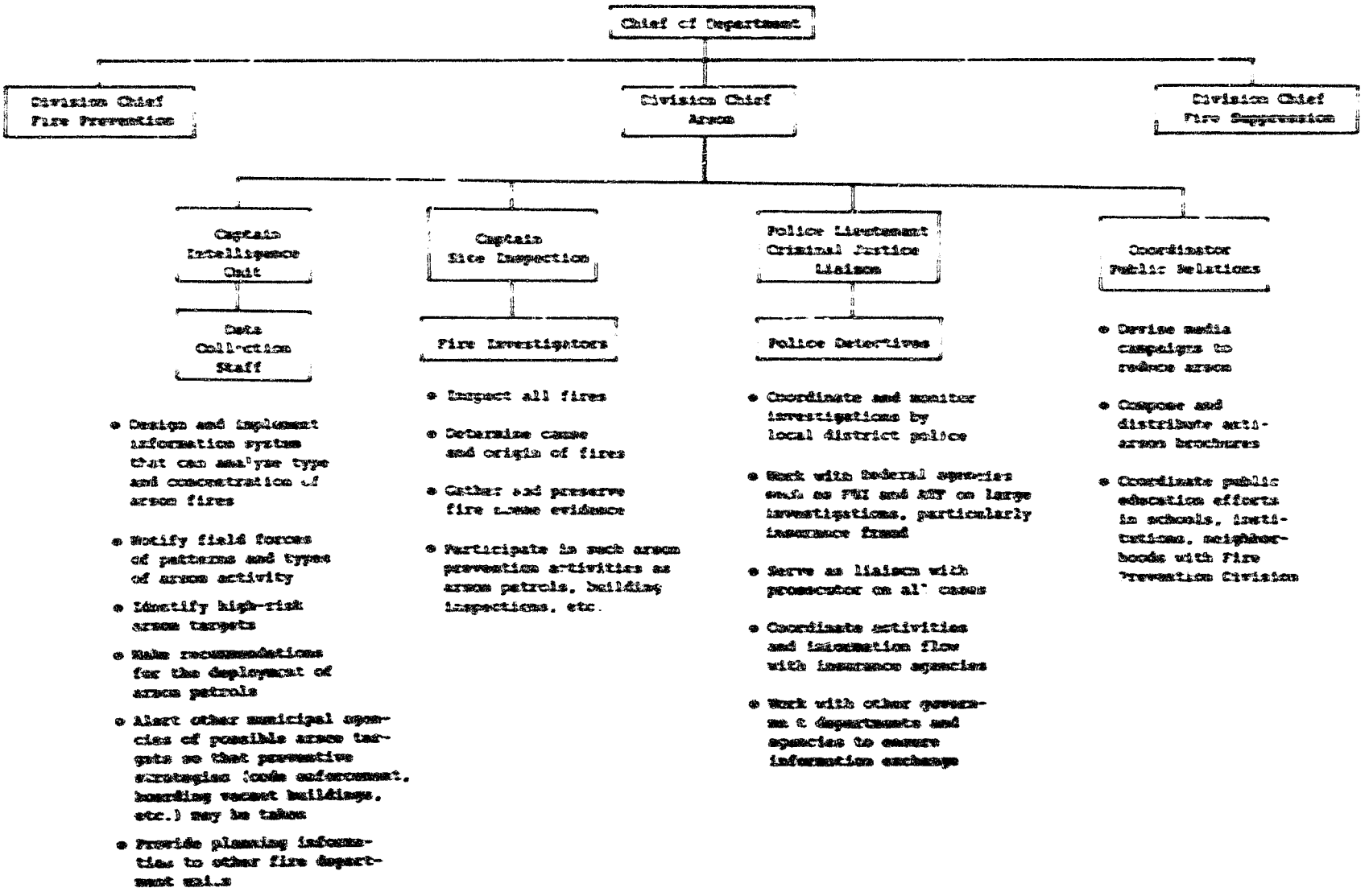
Size of Arson Units by City Size

City Size	Median Number of Arson Unit Personnel
50,000 - 100,000	3
100,000 - 500,000	5
500,000 - 1,000,000	9
Over 1,000,000	26

It appears that the best way to overcome these weaknesses and achieve maximum effectiveness in larger cities is to place the arson unit sufficiently high in the organizational hierarchy to be publicly visible and to command the resources necessary to produce quality performance. This would normally be accomplished by according the arson unit division-level status similar to the organizational model shown in Figure 3.1. Figure 3.1 also indicates some of

Figure 3.1

ARSON PROGRAM—FULL ORGANIZATIONAL MODEL



the activities which the arson division may undertake. Large units may assume all these functions, assigning one or more individuals to each. However, smaller units (which often have lower caseloads) may not need to carry out each of these activities, and may also find that a single individual can take responsibility for several of these functions at once.

There are a number of arguments for assigning division-level status to the arson unit. First, this may ensure that the squad will have sufficient staff to collect and analyze arson data and to initiate proactive strategies which might be conducted by the fire inspection unit, the police, the public relations section, or the fire prevention division. Second, arson inspection should be organizationally distinct from inspection for fire code violations. The methods, circumstances of inspection, and training required are quite different. Moreover, the steps in an arson case after the initial inspection diverge even more from routine fire prevention activities in that they often involve criminal investigations. Third, the unit should have liaison staff to coordinate all the components of the investigative function. Finally, an effective arson squad needs a strong and well articulated public awareness component. This may be as effective as any other function in reducing the incidence of arson and obtaining assistance in identifying suspects. Unfortunately, such an organizational arrangement is clearly beyond the means of most fire departments. Of the units visited for this study, only New York's constitutes a regular division with the division head reporting to the Chief of Department.

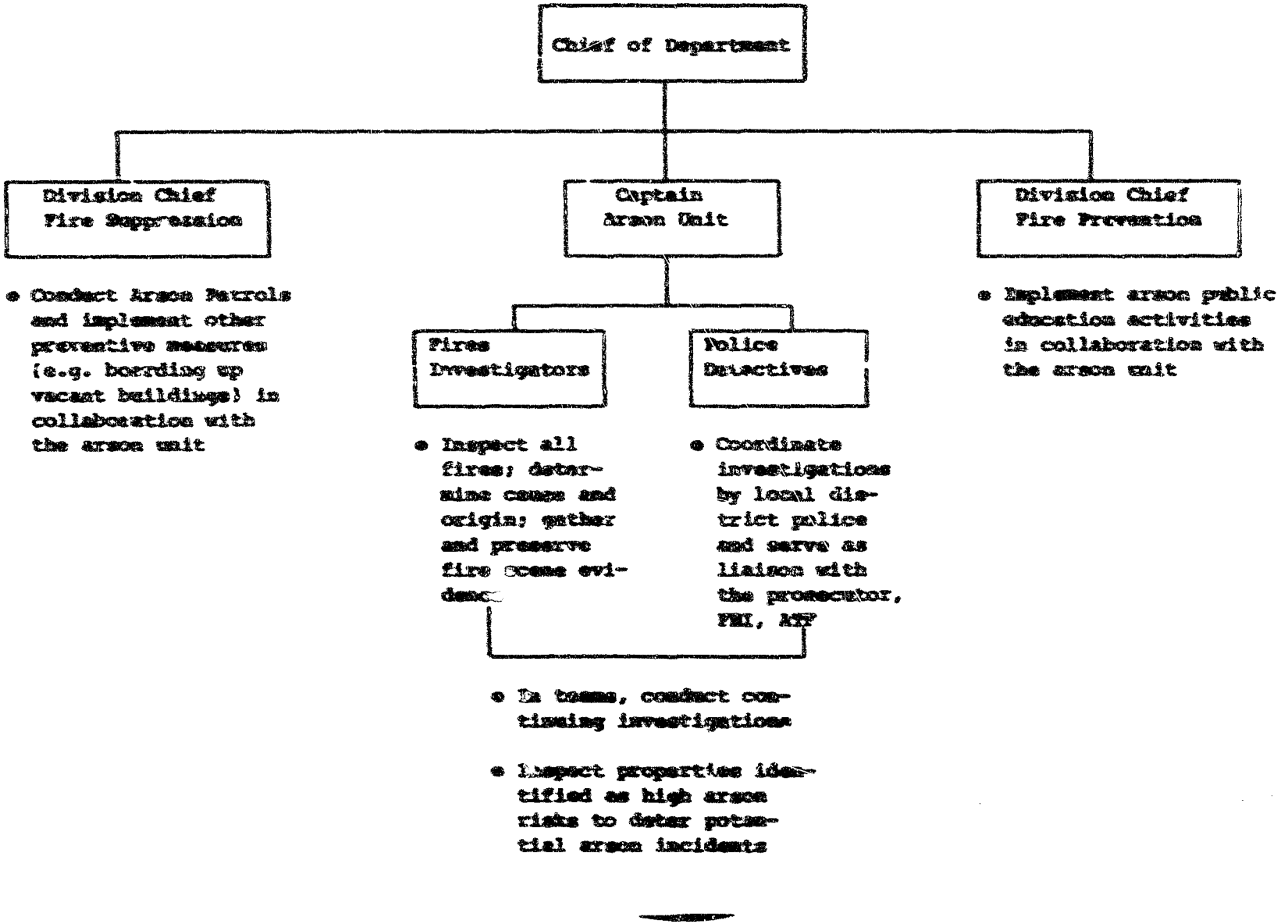
As a compromise, however, it is possible to provide adequate status and authority to the arson unit through other organizational arrangements (such as those shown in Figure 3.2). A similar placement is given to the arson units in Seattle and Denver making it clear that an arson unit does not have to constitute a division in order to have division-level status. In both cities, the arson squad is a small unit headed by a captain who reports directly to the Fire Chief. In addition to increasing the visibility of the unit, this arrangement implicitly enhances its authority.

3.4 Functions of the Arson Unit

Only in the largest cities is there any formal differentiation of function within arson units. For example, in New York City, where 186 fire officers are assigned to arson duty, the central arson division has three subunits—surveillance, major case, and intelligence; routine arson cases are handled by investigative offices in Brooklyn and the Bronx. As a rule, however, arson units have no organizational subdivisions.

Figure 3.2

ARSON PROGRAM—SMALL DEPARTMENT MODEL



Among the major functions which may be carried out by arson units (no matter what their size or structure) are:

- preliminary investigations, including cause and origin determinations;
- continuing investigations, including witness interviews, suspect identifications, and records searches;
- proactive measures, such as arson patrols or code enforcement activities;
- liaison activities with other groups such as the District Attorney or federal agencies involved in arson control activities;
- intelligence and data collection activities; and
- public relations efforts, including arson information materials, media campaigns, and hotlines.

Based on data obtained from the cities visited in the course of preparing this document, Table 3.2 illustrates the functions of the arson unit and the amount of time dedicated to each by the personnel of these selected units.

As the table demonstrates, preliminary and continuing investigations demand the greatest proportion of arson unit members' time. A discussion of the specific activities and requirements associated with arson investigations is provided in Chapter 4. Proactive measures (examined in detail in Chapter 5) are generally accorded a relatively small percentage of the units' time. In many cases this may be due to the substantial time demands of the units' investigative function. Liaison activities of the arson unit are often carried out in conjunction with the task force operations, or in the course of other activities of the arson unit (such as public relations, investigations, and data collection). Finally, intelligence activities and public relations are the means by which the arson unit traces the arson problem in the community and informs the public of the nature of the problem and the means to counteract it. Since these functions offer essential support to all other activities of the arson unit, they are examined in greater detail below.

3.4.1 Intelligence

Intelligence involves the collection, maintenance, and interpretation of arson data. All arson units perform this function to some extent, even though separate intelligence sections are rare. Intelligence, as defined here, is essential to an arson unit's planning and operations. Some information about the distribution of fires geographically and temporally, for

TABLE 3.2

FUNCTIONS OF ARSON PERSONNEL (BY PERCENTAGE OF TIME)

Functions / CITY/PERSONNEL	Preliminary Investigations (Initial Inspection Cause, Origin, Determination)	Continuing Investigations (Interviewing witnesses, identifying/arresting suspects, searching property records, etc.)	Proactive Measures (Patrols, surveillance, boarding up bui'ding etc.)	Information System Operations (Collection, Analysis and Dissemination of Data)	Liaison With Police, FBI, ATF, DA, etc.)	Public Relations (Brochures, media campaign, etc.)
NEW YORK						
1 Chief in Charge					25%	25%
1 Chief Fire Marshal	25%	25%			25%	20%
2 Deputy Chief Fire Marshal	50%	25%			10%	10%
17 Supr. Fire Marshals	13 @ 75%	1 @ 75%		1 @ 75%	13 @ 10%; 1 @ 1 %; 1 @ 50%; 1 @ 12.5%; 1 @ 12.5%	13 @ 10%; 1 @ 5%; 1 @ 50%; 1 @ 12.5%
145 Fire Marshals	145 @ 67%	145 @ 13%; 10 @ 100%	145 @ 20%	10 @ 100%		
Other: Outside Department or Within Department but Outside Arson Unit		55 Police Department Arson Specialists Police Department General Investigators Bronx D.A.'s Arson Unit			Bronx D.A.'s Arson Unit	
NEW HAVEN						
1 Captain	5%	7%		10%	5%	5%
2 Fire Investigators	20%	60%	10%	5%	5%	
2 Police Detectives	20%	60%	10%	5%	5%	
Other: Outside Department or Within Department but Outside Arson Unit	Fire Marshal Fire Inspector	Fire Marshal	Fire Marshal Director of Planning and Information Services		Fire Marshal Director of Public Rel. & Community Relations	Fire Marshal

Functions / City/Personnel	Preliminary Investigations (Initial Inspection Cause, Origin, Determination)	Continuing Investigations (Interviewing witnesses, identifying/arresting suspects; searching property records, etc.)	Proactive Measures (Patrols, surveillances, boarding up buildings, etc.)	Information System Operations (Collection, Analysis and Dissemination of Data)	Liaison (with Police, FBI, ATF, DA, etc.)	Public Relations (Brochures, media campaign, etc.)
SEATTLE						
1 Fire Captain				50%	50%	
8 Fire Investigators	35%	45-50%	10-15%			5%
2 Police Detective Investigators		100%				
Other: Outside Department or Within Department but Outside Arson Unit		Public Relations Specialist in Chief's Office D.A.'s Office Insurance Industry			Public Relations Specialist in Chief's Office	
DALLAS						
1 Division Chief	1%	5%	1%	10%	5%	10%
1 Assistant Division Chief	10%	20%	1%	25%	6%	10%
11 Captains	35%	45%	5%	15%	2%	5%
3 Lieutenants	35%	90%	5%	10%	1%	1%
1 Fire Prevention Officer		50% interrogative, polygraph, arrest inv.				
Other: Outside Department or Within Department but Outside Arson Unit	Department Photographer (50%)					
DENVER						
1 Captain	10%	5%-35%	1%	35%	30-50%	5%
1 Lieutenant	10%	45%	1%	25%	16%	10%
11 Investigators	10 @ 25%	10 @ 55%	10 @ 8%	1 @ 100%	10 @ 10%	10 @ 2%
Other: Outside Department or Within Department but Outside Arson Unit	2 Photographers in Chief's Office (60%)	2 Photographers in Chief's Office (30%)	Fire Prevention Bureau	Colorado Bureau of Investigation		

example, is necessary for the effective scheduling and deployment of personnel. Knowledge about the risks of arson by time, location, and type of fire may also be useful in developing preventive measures. Finally, information about individuals repeatedly associated with fires may facilitate the identification and apprehension of suspects.

In most arson squads, the intelligence function is not highly systematized. While all of the fire departments responding to the survey indicated that they maintain arson records, for example, only 26 percent of them use computers for data processing. At first it would seem that the size of most arson units would not be sufficient to support a well developed intelligence system, but New Haven's arson squad is a case in point to the contrary. Although the unit is comprised of only 5 professionals, it maintains a thorough intelligence system, designed by the City Controller's Office. Arson data are stored in the city's central computer and accessed through a remote terminal in fire headquarters. Taking another approach, Denver's arson squad makes extensive use of police intelligence, having assigned one of its officers to work as liaison with the intelligence section of the police department. Substantial advantages can be gained by explicitly organizing the intelligence function as a section within the arson unit or as the assigned responsibility of one unit member.

This section or individual would have three primary tasks: 1) data collection and analysis; 2) generation of reports on arson incidence; and 3) identifying and recommending proactive response strategies. While collection and analysis of arson data would be conducted primarily by the intelligence section, other city departments may also be able to help with these tasks. Building inspection departments, for example, might analyze data from their records to help identify likely targets for arson. These agencies could also be helpful in implementing preventive strategies designed to encourage property owners to bring their structures into conformance with building and fire codes. Chapter 7 discusses the basic components of an arson information system; some of the proactive strategies which might be directed by such a system are described in Chapter 5.

In its capacity as an information resource, the arson intelligence unit might typically 1) provide the Fire Chief with information on prior analyses of arson risks geographically and over time which would assist in scheduling the deployment of arson patrols to certain areas; 2) provide information to the public relations unit to be used in targeting media campaigns; 3) provide information to the fire prevention division about abandoned buildings that should be boarded up; and 4) alert supervisors of other units and divisions to a variety of situations requiring proactive measures. Data collected by this unit can also be used in a range of planning activities by the investigative division--for instance, in varying the assignment of investigators according to fire risks over time.

3.4.2 Public Awareness

As distinct from intelligence activities, public awareness efforts do not currently seem to be a routine function of arson units. For example, the survey conducted during the course of this study showed that only one-third of the arson squads reported publicizing their phone numbers; only 42 percent offered rewards for information leading to the arrest and conviction of arsonists. The typical arson unit probably does not have a sufficiently large staff to devote much time to public information.

Nevertheless, public awareness may be a valuable weapon in the fight against arson. Fire setting by youngsters may be discouraged by a climate of negative public opinion and by the knowledge that arson is a crime with serious consequences. In addition, apprehension may be increased as a result of information provided by alert citizens. Funding opportunities for the arson unit may increase as public support for its activities grows. More generally, public support for efforts to reduce arson may be enhanced by a greater awareness of the problem. (Public education activities are discussed in further detail in Chapter 5.)

Two methods of establishing an arson public awareness capability within the fire department have been developed. In the first, the arson unit itself controls this function, by creating a public relations subunit or by designating one individual as a public relations officer. This unit or individual would be responsible, among other things, for developing media campaigns to inform the public about the magnitude of the problem, to warn potential offenders, and to indicate what steps concerned citizens could take to help prevent arson or facilitate apprehension. Work would also be carried out with the fire prevention division to help coordinate public education efforts in schools, institutions, and neighborhoods. Finally, the arson unit would prepare and disseminate literature on the subject for a range of different audiences.

The second approach vests responsibility for arson public awareness in the public relations unit located in either the Department Chief's Office or the division of fire prevention. For this variation to work, those in charge must believe that anti-arson campaigns can be effective and must give them active support. The campaigns in the cities visited were well supported, creative, and effective. The organizational location within the fire department of the public relations effort in each of these cities is indicated in Table 3.3.

Table 3.3

Public Relations Activity

City	Organizational Location
Dallas	Fire Marshal's Office
Denver	Arson Squad and Chief's Office
New Haven	Chief's Office
New York	Community Relations Unit
Philadelphia	Division of Fire Prevention
Seattle	Chief's Office

3.5 Recruitment of Arson Unit Personnel

Most fire departments recruit arson squad personnel from within their own ranks. While there are many criteria, both implicit and explicit, for selecting fire investigators, there is some agreement that three criteria are essential.[3] The most important consideration is the attitude and interest of the candidate. Arson investigation is dirty, tedious, demanding work, and most cases are not solved. Without strong motivation, the new recruit will not be a good investigator and may not continue in the position. Second, the ability to elicit information from witnesses and suspects at the scene is important in arson investigations, especially because the physical evidence is often destroyed by fire. Third, arson investigators must be seen as credible expert witnesses in court. Thus they should be good communicators--articulate and in command of the facts. These three criteria, at a minimum, are important to the selection of good investigators, whether from the fire department or the police department. Other qualifications, such as familiarity with arson data (for intelligence purposes) or adeptness in interpersonal relations (for liaison work) may also be desirable.

Once chosen, arson investigators usually remain in their positions for a considerable length of time. In departments where the investigator's position represents the top of the career ladder, investigators average over 10 years' experience. There is some controversy over whether such long tenure is healthy for an arson unit. Those opposed to long tenure argue that the investigative position becomes a retirement spot for men who no longer want to fight fires but are unable to advance in the department. Those supporting long tenure argue that length of experience is an important factor in the quality of work done by an investigator and that investigation is actually more demanding than fire fighting. The tenure question may be a difficult one for some departments. Obviously, the emphasis should be on ability and dedication, regardless of length of service. Careful attention to the selection process and a system for ongoing review and assessment can help ensure that the calibre of the investigative staff will be high.

3.8 Training

Arson investigation is a complex job requiring specialized training. Fortunately, most communities have recognized this fact, as evidenced in the survey conducted as part of this study; most arson unit managers mentioned training as their number one priority for the expenditure of funds. Almost all cities give at least some training to their arson investigators.

The list of training topics useful to arson investigators is almost endless. At a minimum, however, it would appear necessary to include the following: cause and origin investigations; recognizing arson; laws relating to arson; and investigative techniques. Of course, a number of more specialized topics may also be very valuable, including evidence gathering and forensic techniques, methods of interviewing witnesses, and specific investigative procedures and information sources for arson-for-profit cases.

Generally, communities may rely on two sources of training for fire investigators: local or regional programs sponsored by fire departments or local governments; and more general or national-level training programs sponsored or conducted by federal agencies. Local training programs can include a variety of structures, topics, and methods. Examples of some of the most innovative or advanced local training efforts are provided below. Programs sponsored by federal agencies often focus on specific aspects of the arson investigation or concentrate on advanced techniques. Several programs of this type are also described below.

3.8.1 Local Training Programs

The Philadelphia fire department conducts its training at the Roxborough Fire College, which offers courses in arson investigation as well as the other aspects of fire fighting. Unlike most other cities, Philadelphia tries to train a large number of its fire suppression staff as inspectors. This has a number of advantages. When the fire inspection load is too heavy or an investigator is sick, a trained firefighter can fill in. If vacancies occur among the investigators, there is a ready source of replacements. More important, most fire suppression battalions will have personnel capable of identifying arson fires at the scene, so that physical evidence is more likely to be preserved while the fire is being put out.

Denver has been conducting an annual one-week "Advanced Arson Investigation Seminar" for the past six years. Key arson personnel from Denver attend the seminar; interested staff from other cities are also invited to attend for a fee. The seminar covers such topics as the role of the insurance company,

probable cause, search and seizure law, plea bargaining, advanced structure scene investigation, search techniques, and accidental causes. The most interesting aspect of the program is a mock court trial which involves a re-enactment of actual arson cases. Staff from the District Attorney's Office run the sessions, demonstrating the pitfalls that an investigator may encounter when testifying in a court of law.

Of the cities visited for this report, the most thoroughly developed training program for arson investigation is conducted in Seattle. The arson investigation team there is structured so that all its members--police and fire--must be able to conduct all phases of an investigation. Therefore, each investigator receives training commensurate with those responsibilities. The training occurs in three phases. The first is the 11-week Basic Law Enforcement Course taught by the Seattle Police Department Academy. This course emphasizes:

- report writing;
- arrest, search and seizure law;
- rules of evidence;
- the U.S. Constitution; and
- the criminal justice system.

The second phase of the training is a course in Crime Scene Investigation--a course that is routinely provided to police detectives at the Academy. This one-week course emphasizes physical evidence gathering (including trace evidence), photography, fingerprinting, and use of the laboratory, with some attention to interviewing witnesses and canvassing neighborhoods.

The third phase is designed to relate and tailor the skills learned in the two police training courses to specific aspects of arson investigation, including:

- determining point of origin and cause;
- recognizing arson;
- the motives for incendiary fires;
- the investigative process;
- reports and records; and
- court procedure.

This phase is an 80-hour course given over a three week period. At the end of the training many of the essential aspects of investigation have been covered. The chart attached (Figure 3.3) lists the topics according to their position in the investigative process. It is interesting to note that Battle makes a distinction between "fire investigation" and "arson investigation." Basically, fire investigation covers the cause and origin of the fire and arson investigation covers evidence gathering, intelligence, and case preparation. This distinction is discussed further in Sections 4.2 and 4.3.

3.8.2 General or National-Level Training

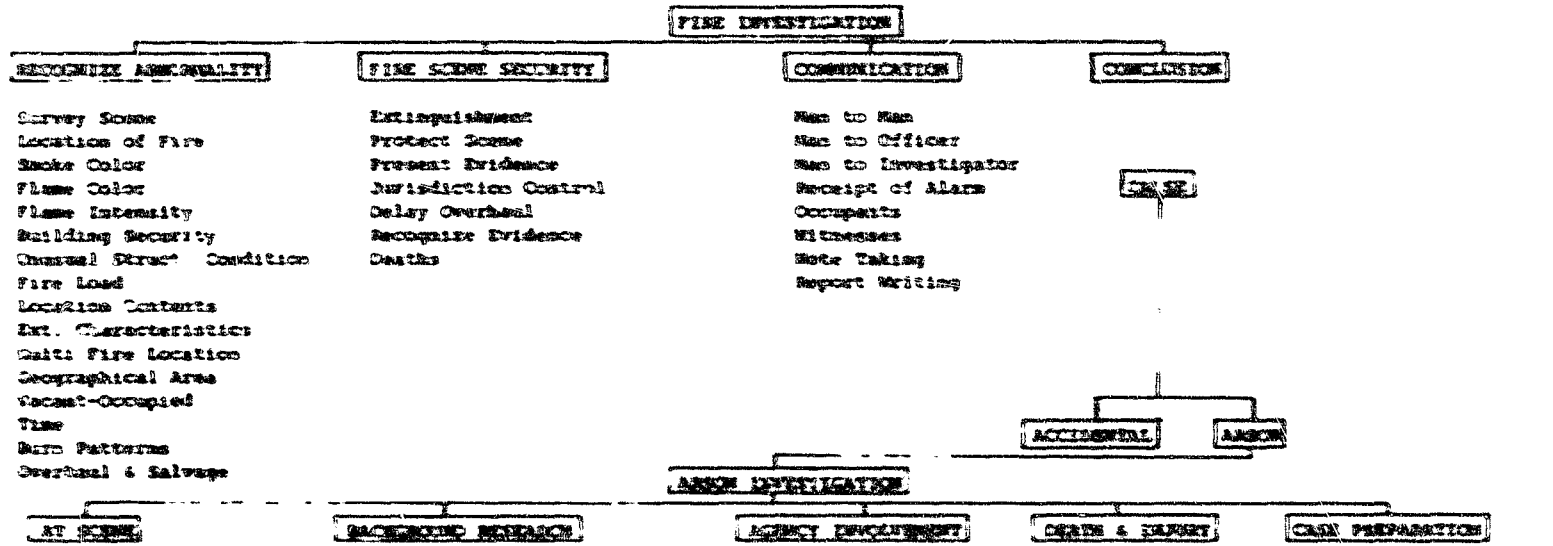
Turning to more generally available sources of training, the U.S. Fire Administration conducts courses on all phases of fire service management, including a two-week course on arson investigation. The course, offered four times a year in four different locations around the country, covers determination of origin, evidence collection and preservation, motivation of the firesetter, interviewing, interrogation, and providing testimony. LEAA has transferred funds to the USFA to expand this training capability to more law enforcement personnel. LEAA has also transferred funds to the Bureau of Alcohol, Tobacco and Firearms (ATF) to provide training for the investigation of arson-for-profit cases. In addition an arson-for-profit manual is being developed by the Battelle Institute under an LEAA grant. The manual will assess the state-of-the-art in arson-for-profit investigation and propose techniques for its control and prosecution.

The Federal Bureau of Investigation also provides specialized instruction on arson. The FBI Academy gives several courses to FBI personnel: Basic Arson Investigation, Arson Instructor Training, and Organized Crime and Arson, a course on the application of the Racketeer Influenced Corrupt Organizations (RICO) Statute. Courses for non-agency personnel are also offered. The 59 FBI field offices are sponsoring 175 minicconferences for investigators and prosecutors. These conferences, which will extend from two days to one week, will focus on the recognition and handling of arson-for-profit cases. Each conference will be designed to deal with specific problems being experienced in the area in which the course is being given. In December 1979, the FBI will conduct a National Symposium on Economic Arson for prosecutors, fire service personnel, and law enforcement officers. In addition, the FBI Academy conducts an Arson Investigators School (a 40-hour course given three to four times a year) and the Forensic Science Training Unit offers an Arson Evidence Examiners' Course for laboratory personnel.

The National Fire Protection Association is also developing a training program for arson investigators. Slide presentations and instruction manuals will be available on topics including firefighter responsibility, determining

Figure 1.1

SEATTLE TRAINING—OVERALL COURSE CONTENT



origin and cause, conducting a full-scale investigation, and court requirements and interrogation procedures. The entire instructional package will cost approximately $400.

Training in the prosecution area is also being provided. Under the joint sponsorship of the National College of District Attorneys, the National Fire Academy (an agency within the U.S. Fire Administration), and LEAA, a pilot test program was recently concluded for prosecutors. Three additional courses were also conducted. The course, which covers all aspects of preparing and prosecuting an arson case, is divided into 10 lectures with funding provided by LEAA.

Finally, the California District Attorneys Association (CDAA), a non-profit organization dedicated to the improvement of the criminal justice system in California, has received a grant from the Aetna Insurance Company to publish a manual on the investigation and prosecution of arson. The manual, titled "Arson Investigations and Trial Practice," will consist of chapters written by experts from throughout the nation on all phases of fire investigation and prosecution. The manual is scheduled for publication in 1980. At the time of publication, CDAA will conduct training sessions at various locations in California. Guest lecturers will be invited to instruct prosecutors and fire agency personnel at weekend training seminars.

3.3.3 General Considerations for Arson Training

Regardless of the sources and methods of training, there is general agreement among training providers that each agency involved in arson investigation should be trained in all aspects of the process. Some firefighters should receive investigative training; fire marshals should receive some police detective training and detectives should receive instruction in cause and origin investigation as well as federal investigation and prosecution. In addition, specialized training should be given to prosecutors to increase their knowledge of and appreciation for the circumstances and problems of the other members of the investigative team. Preferably, interagency training should be conducted by employing members of each agency to train personnel of the other agencies involved. In this way, each agency should become sensitive to the needs of the next, contributing to a fully integrated system of investigation. Following the example set in Philadelphia, it may also be advisable to train a substantial number of fire suppression staff as inspectors to provide department-wide support to the arson investigation function. Similarly, it may be helpful to train fire Battalion Chiefs in cause and origin determinations to minimize the demands on fire marshals and increase early detection of arson.

3.7 Costs of the Arson Unit

The major costs of the arson unit include personnel salaries, equipment, training, and support services such as data collection and analysis systems. The actual expenditures necessary to support an arson unit will, however, depend on a variety of conditions, including:

- the size of the community;
- the extent of arson in the community;
- the nature of arson in the community;
- the degree to which certain resources (such as laboratories, equipment, and training programs) may already be available through local, state, or national sources;
- the range of arson control activities to be undertaken;
- budget limitations;
- rank of personnel involved in the arson unit; and
- local economic conditions, including the wage scale of the community.

Since communities will vary widely along each of these conditions, it is virtually impossible to predict the exact level of staffing that would be needed in a given community or provide specific guidelines for the expected costs of initiating and operating an arson squad. It is possible, however, to indicate the range of costs which some arson units have incurred. To the extent that a community's characteristics parallel those of the jurisdictions examined below in Table 3.4, the information may provide a very general indicator of the costs associated with the arson squad.

Although the limitations in the data prohibit any firm conclusions, it is possible to note the following trends:

- Arson unit expenditures appear to be quite modest. Less than 1 percent of all fire department expenditures are dedicated to the arson unit.
- Salaries constitute the largest single expenditure of the arson unit. In the jurisdictions examined in Table 3.4, salaries accounted for approximately 81 to 89 percent of the unit's budget.

TABLE 3.4

ARSON UNIT EXPENDITURE DATA FOR SELECTED JURISDICTIONS

	DALLAS	DENVER	NEW HAVEN	NEW YORK	SEATTLE
TOTAL FIRE DEPARTMENT EXPENDITURES (AS OF 1/78)	30,400,000[A]	21,049,000[A]	9,147,000[B]	395,840,000[D]	25,862,000[A]
TOTAL FIRE DEPARTMENT SALARY EXPENDITURES (AS OF 1/78)	27,139,000[A]	19,401,300[A]	8,515,300[B]	285,843,000[D]	20,635,000[A]
TOTAL ARSON UNIT EXPENDITURES FY78	230,000	233,188(FY77)	95,000	4,536,412	197,899
FY79	260,000	249,511	97,000	4,600,000	219,276
TOTAL ARSON UNIT SALARY EXPENDITURES (APPROXIMATE, AS OF 11/78)	392,016[E]	203,000	81,040	4,176,294	195,218
NUMBER OF ARSON UNIT PERSONNEL	17	15	5	186	11
ARSON UNIT EXPENDITURES (FY78) AS PERCENT OF TOTAL FIRE DEPT. EXPENDITURES (1/78)	.8%	1.1%	1.0%	1.1%	.8%
ARSON UNIT SALARIES (11/78) AS PERCENT OF ARSON UNIT EXPENDITURES (FY78)	NA[E]	81.4%	83.5%	90.8%	89.1%
SOURCES OF FUNDING	MUNICIPAL	MUNICIPAL	MUNICIPAL, INSURANCE CO.; AND LEAA PROVIDE FUNDING FOR THE ARSON DATA SYSTEM	MUNICIPAL, LEAA AND VAFAC PROVIDE FUNDING FOR SPECIAL PROGRAMS.	MUNICIPAL

[A] FIRE DEPARTMENT EXPENDITURE DATA WERE OBTAINED FROM THE MUNICIPAL YEAR BOOK 1979 (WASHINGTON, D.C.: INTERNATIONAL CITY MANAGEMENT ASSOCIATION, 1979), P. 187, 188, 189.

[B] FIRE DEPARTMENT EXPENDITURE DATA WERE OBTAINED FROM THE MUNICIPAL YEAR BOOK 1978 (WASHINGTON, D.C.: INTERNATIONAL CITY MANAGEMENT ASSOCIATION, 1978), P. 164.

[C] PRESENTS FY78 ARSON UNIT EXPENDITURES TOTAL FIRE DEPARTMENT EXPENDITURES AS OF 1/77.

[D] OBTAINED FROM DIRECTOR OF THE BUDGET, NEW YORK CITY FIRE DEPARTMENT.

[E] DURING THE LATTER HALF OF 1978, SALARY EXPENDITURES FOR DALLAS' ARSON UNIT WERE GREATLY INCREASED. THUS, A COMPARISON OF CURRENT SALARY EXPENDITURES WITH THE FY 1979 ARSON UNIT BUDGET IS NOT FEASIBLE.

- Municipal funds are the primary source of support for arson units. Special efforts such as data systems or extensive arson unit activities may be funded through other soures, including grants from LEAA, HUD, and insurance companies.

3.8 Summary

The fact that there are often obstacles to cooperation between the fire department, police department, and Prosecutor's Office suggests that a strengthening of liaison is one of the more important steps an arson squad can take to improve the effectiveness of an anti-arson program. To support the functions of investigation and criminal justice liaison, carefully defined intelligence and public awareness activities should also be an integral part of arson unit operations. Finally, with the need to involve at least three agencies in the process of arson identification and investigation comes a related need for comprehensive training to prepare each agency for its role and to strengthen overall communication and coordination.

Several guides for addressing these issues within the organization of an arson unit have been suggested in the preceding sections.

(1) A relatively large arson unit should have separate division-level status within the fire department. Four constituent units are recommended: arson intelligence, site inspection, criminal justice liaison, and public awareness. (The functions of each of these subunits are summarized in Figure 3.1.) Following the determination of cause by fire inspectors, criminal investigations stemming from arson would be the responsibility of police detectives in the affected police precincts or subdivisions. Detectives assigned to the arson unit (and responsible to its division chief) would coordinate and monitor cases assigned to local police authorities, participate in the continuing investigation of selected cases, and serve as liaison with the prosecutor.

(2) Although most arson units are not large enough to permit formal subdivision, most of the functions performed in a larger unit can also be performed by personnel of a smaller unit. Although an arson unit of less than 7 members cannot reasonably comprise a division, it can and should be made directly responsible to the Fire Chief's Office and thus have an organizational status comparable to that of a division.

(An organizational model for smaller departments is shown in Figure 3.2.) Following the determination of cause by fire inspectors, the continuing investigation could be conducted by two-man teams of fire inspectors and police detectives working under fire department jurisdiction. One member of the arson unit (preferably a police detective) would serve as liaison with the police department and Prosecutor's Office, allowing selected cases to be assigned to local police authorities as appropriate. Another member of the arson staff should be assigned at least part-time to intelligence activities. An effort should be made, as in New Haven, to draw upon agencies outside the fire department for the development of a data system and for data processing services. Public awareness efforts are probably beyond the capability of a small arson unit and should be conducted by the fire prevention division. To heighten the salience of arson prevention in this division, the Fire Chief should specify that a certain portion of the division's resources be devoted to increasing public awareness of arson.

(3) Whenever possible, one or more attorneys in the District Attorney's Office should be assigned to arson cases, as is done in Seattle, Philadelphia, and Dallas. Such an assignment policy can facilitate the development of prosecutorial expertise in arson cases and can provide clear lines of communication between the arson unit's investigators and prosecuting attorneys.

(4) To the extent possible, federal resources should be used to augment state and local training and investigation efforts. The ATF, FBI, and U.S. Attorneys' Offices are potential sources of federal support to be considered in developing an arson response capability.

(5) Formal training opportunities as well as on-the-job training procedures should be developed to upgrade the skills of all participants in the investigation process. Fire investigators as well as fire suppression staff must be trained in the detection and preservation of arson evidence. Fire investigators must receive additional training in basic police skills as well as criminal investigation procedures and their relation to arson investigation. Police must be trained in arson detection and investigation and prosecutors must understand the evidentiary requirements of arson cases and the particular techniques of economic crime investigation and prosecution.

(6) In addition to training in their specific roles, each participant should be familiarized with the roles and responsibilities of the others in order to support the development of a cohesive team effort.

(7) The costs associated with the arson unit are affected by several factors and the amount of required funding varies from jurisdiction to jurisdiction. However, data indicate that the extent of actual expenditures is rather modest, generally less than 1 percent of the entire fire department budget.

References

1. A subsequent survey by Police Magazine identified two additional jurisdictions where the police are primarily responsible for arson investigation: Richmond, Virginia and Los Angeles County, California. See Kevin Krajik, "The Arson Epidemic: Who Should Investigate," Police Magazine, July 1979, p. 8.

2. Kevin Krajik, "The Arson Epidemic: Who Should Investigate," Police Magazine, July 1979, p. 16.

3. See Ilene Greenberg and Peter Olivieri, Organization, Training and Information Systems for Arson Investigation in the City of New Haven (Cambridge, MA: Abt Associates, Inc., 1977), p. 13.

CHAPTER 4: ARSON INVESTIGATION

As shown in the preceding chapter on organization and administration of the arson unit, the investigation of the arson incident is one of the unit's key responsibilities. This chapter focuses on the investigative process. First examined are the many methods cities may employ to determine which fires warrant an initial arson investigation. This is followed by two separate sections on the cause and origin investigation and the continuing investigation. Finally, issues of concern in both the initial and continuing investigations are explored--staff allocation methods and equipment and laboratories.

4.1 Selecting Cases for Arson Investigation

There is evidence that many cases of arson go undetected, in part because the usual methods of selecting fires to be investigated are not very efficient. Results of the survey conducted in the course of preparing this program model show that in most of the responding cities, the arson unit investigates fires for cause only when the battalion chief at the scene identifies the fire as one of suspicious origin. In these cities, less than 20 percent of the reported fires were classified as incendiary. On the other hand, five of the cities participating in our field study inspect fires independent of any determination by the battalion chief. Some inspect <u>all</u> fires; others use specific criteria, but these tend to be all-inclusive. Table 4.1 lists the criteria for investigation in all five cities, together with pertinent 1977 statistics on fires in buildings, fires inspected, fires classified as incendiary or suspicious, arson unit personnel, and workloads.

The rates of identified arson in these cities range from 25 percent to 45 percent (with a mean of 30 percent) of all fires in buildings. When compared with the 20 percent arson detection rate in the other cities surveyed, these data suggest that in most cities a substantial number of arsons may indeed go undetected because of inefficiencies in the usual screening processes. Evidently, sole reliance upon the experience and judgment of the battalion chief to select cases for investigation may lead to the exclusion of a

Table 4.1
Detection of Arson Fires

City	Criteria for Inspection by Arson Squad	Number of Fires-in-Buildings	Fires-in-Buildings Inspected by Arson Squad/		Fires-in-Buildings Classified as Incendiary or Suspicious		Number of Investigator/ Available for Site Inspections	Number of Fires-in Buildings Inspected per Investigator
			Number	Percent of Fires in Buildings	Number	Percent of Fires in Buildings		
New Haven	All fires referred by fire company line officer Fire Inspector, or Fire Marshal.	543	288	53%	245	45%	2 FD/2 PD	61
Denver	All fires for which fire suppression cannot readily determine a cause, or suspicious fires plus multiple alarms, large loss, death or serious injury.	2,024	1397	69%	866	43%	10 FD	140
Seattle	All fires over $1,000.	1,712	696	41%	518	30%	8 FD	87
Philadelphia	All fires involving loss of life, injury or damage to property.	6,834	6834	100%	1869	27%	13 FD	526
Dallas	All fires.	3,212	3212	100%	799	25%	14 FD	229

significant number of arsons at the beginning of the process. As the screening procedures developed in the five sites appear to offer some advantages in terms of improved arson detection, they are the focus of this section.

Clearly, the most effective method of detecting arson would be to examine every fire—and in fact, this is the procedure used in two of the five cities described below. For many communities, however, the costs of such inclusive policies may be unacceptably high. There is obviously a need to establish formal criteria which will maximize the probability that a case selected for investigation will, in fact, turn out to be arson. Thus, in the final paragraphs of this section an alternative approach to development of a screening system is described—one which makes use of an analysis of the community's fire and arson characteristics.

As noted above, in most cities investigations are initiated only when the battalion chief identifies the fire as suspicious. New Haven employs a variation of this procedure, which increases the number of referrals made for investigation while still allowing investigators to focus on suspicious fires. The fire company line officer makes a determination concerning suspicious fires and these fires are assigned to the arson squad by the Deputy Chief. In addition, however, all significant fires not referred initially to the arson squad are examined by the fire inspector in connection with his fire prevention and safety function. While the fire inspector does not specifically look for evidence of arson, he does refer those fires that appear suspicious to the arson squad. Moreover, the fire marshal personally inspects all serious, multiple-alarm fires and authorizes the arson squad to inspect those fires deemed to be incendiary or suspicious.

A second method of selecting cases for fire investigation (used in Seattle and Denver) is to establish external "fire seriousness" criteria and to investigate those fires which meet or exceed the criteria. In this way the number of required investigations may be matched with the investigative capacity of the arson unit, while still ensuring that the most serious incidents receive the unit's attention. In Seattle, for example, it was estimated that the arson unit could investigate about 450 fires a year. Since the city had over 1200 fires per year, only about 38 percent could be fully investigated. The department therefore decided to establish a criterion to select fires for follow-up inspection and, if warranted, full investigation. By examining fire loss records it was determined that there were only 424 fires with more than $1,000 damage in 1974. Thus, $1,000 became the cutoff point for determining whether or not fires would be investigated. By these means the potential workload was pared to meet the available manpower. In a similar procedure, Denver restricts its investigation to all incendiary and undetermined cause fires with emphasis on those involving large loss or injury.

The third approach, used in both Dallas and Philadelphia, is to investigate all fires. The Dallas fire department policy of conducting an arson inspection of all fires is based on the fact that its fire fighting personnel do not have the necessary expertise to distinguish between accidental and incendiary fires. Although the resulting workload is fairly high, many inspections do not take much time since the arson squad is able to rapidly identify accidental fires. In Philadelphia, all fires involving loss of life, injury or property damage are inspected. As this includes virtually every fire, the workload is from two to nine times greater than that of any other city visited. However, as discussed in Section 4.2, Philadelphia assigns its fire department investigators only to the site inspection function, assigning the remainder of the investigation to police detectives and the other resources which they tap to complement their efforts.

In contrast to the approaches described above, some fire departments may wish to develop an alternative selection procedure which will allow them to concentrate investigative resources on arson cases by increasing the probability that a case selected for investigation will actually involve arson. Parallels to this situation may be found in many municipal service functions. For years police departments responded to almost all reported crimes with some sort of investigation, even though many of these cases were unlikely to be solved. More recently, screening mechanisms have been developed that permit a police department to determine the value of conducting an extensive investigation. These systems can help to ensure that investigative resources are devoted to the most potentially productive cases.[1] Applied to the problem of arson, the goal of a screening system is to determine that particular subset of all fires which is likely to contain the highest portion of all arson fires. The department can then achieve maximum use of its resources by concentrating arson investigations on that group.

Development of screening criteria which will allow the department to identify the high probability subset will require an assessment of the nature and magnitude of the arson problem in the jurisdiction. Specific guidelines on establishing a data collection and analysis capability in support of these (and other) needs are provided in Chapter 7. The list which follows can only summarize the major steps involved in establishing the screening criteria:

(1) The department should first investigate and collect basic information on all fires occurring in the jurisdiction. This information may include type of building, point of origin, cause of the fire, location of building, insurance information, transaction history of the building, and so on. A number of arson fires will most likely be among the fires investigated. Data collection on all fires should continue until the number of documented arson fires is sufficient for a reliable analysis.

(2) An analysis of the characteristics of fires identified as arson should then be carried out. Specifically, the analysis should try to identify the particular characteristics which appear to be correlated with arson fires.

(3) Based on the analysis, it should be possible to list one or more characteristics which are strongly associated with arson fires. These should be used as the screening criteria for selecting fires for arson investigations.

(4) Information gained during subsequent arson investigations should be incorporated in a continuing analysis of these fires. In this fashion the selection criteria may be improved or modified as arson patterns or investigative priorities change.

While a department may still wish to investigate all fires for which fire suppression staff cannot readily determine a cause, it may use these results to establish a range of priorities and to determine the level of investigative resources to apply to certain cases.

4.2 The Initial Investigation

The investigative process begins when the arson unit responds to a fire and opens the initial investigation. Generally, this will include two major activities: a cause and origin determination, and a preliminary criminal investigation which includes taking statements of witnesses, noting descriptions of the scene, and observing possible evidence that the fire was intentional.

Although the initial investigation is probably the least time-consuming aspect of developing an arson case, it is the key to the entire process. First, arson is one of the few crimes in which it is the investigator's responsibility to establish that a crime has in fact been committed. Generally there are no witnesses to the crime. Often no victim will come forward, as the building owners and/or residents may have no idea that a fire involved arson, or may be party to the crime themselves. Thus, the initial investigation offers perhaps the only opportunity to establish the existence of the crime and begin the criminal investigation.

On a second level, in many cases the initial investigation presents the only opportunity that fire or police officers will have to obtain certain types of information, such as witnesses' names, evidence of fire origin, or indications

that a certain individual may have had exclusive opportunity to set the fire. Without facts such as these, subsequent investigative activity is likely to be unproductive.

Generally, the initial investigation is carried out by a fire investigator assigned to the arson unit, although in some communities (such as New Haven), a team consisting of a police officer and a fire officer would be assigned to the investigation. As noted in Section 4.1, the demands of the initial investigation may vary depending on the criteria used to select fires for investigation. In communities such as Dallas or Philadelphia, the investigator is responsible for examining all fires, including both accidental and incendiary fires. In other communities, initial investigations are reserved for those fires which already appear suspicious. In these cases the investigators may spend a great deal more time on each case, as arson investigations generally require substantial investments of time and effort.

A key concern in the initial investigation is the response time of the arson unit. Most arson unit heads want their investigators to arrive at the fire scene as soon as possible--at least within an hour after the suppression units--in order to avoid the potential destruction of evidence. Firefighters, unfamiliar with the signs of arson and in a hurry to put out a blaze, typically remove all objects that are not part of the structure. As a result, evidence of arson is sometimes buried under piles of debris. A knowledgeable investigator who arrives on the scene before the firefighters have entered the building may be able to prevent the destruction of valuable evidence. In addition, the investigator may be able to gain important information on the fire simply by observing its characteristics and noting its progress through the building.

An early response may also help an investigator obtain information from potential witnesses. Witnesses are often anxious to tell what they know about the cause of a fire while caught up in the excitement of watching a burning building. Later, some witnesses may be unwilling to provide information about the fire, and others may be hard to find.

Finally, a minimum response time is important because of the U.S. Supreme Court's decision in Michigan v. Tyler. In this case, the Court held that if evidence is not obtained within a reasonable time after a fire is out, fire investigators are subject to all the laws of search and entry that apply to police (e.g., the premises may not be entered without the owner's permission or a search warrant). Although it is generally a simple matter to obtain permission--even guilty owners will not risk stirring investigators' suspicions by denying entry to a building--it is preferable to conduct the search immediately, before evidence can be lost or removed. Specific methods of allocating personnel to meet this response need are examined in Section 4.4.

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The cause and origin investigation is a traditional and long-standing responsibility of the fire department. Substantial numbers of resources, including training programs, technical guidelines, and research reports have already been produced to help fire investigators improve their performance in this essential phase of the investigation.[2] Readers are advised to consult these sources for specific information and techniques on cause and origin investigations.

The first stage of a cause and origin investigation may actually take place while the fire is in progress. Spectators may have information on the origin of the fire or the activities of the building occupants which may be useful in the later investigation. In addition, characteristics of the fire such as its size, movement, heat intensity, color, or duration of burn may provide at least some preliminary indications of cause and origin.

Once the fire has been extinguished, the fire investigators may begin the task of the actual investigation. If possible, this should be initiated before fire suppression personnel start any clean-up activities, as they may inadvertantly remove or destroy valuable evidence. Generally, the point of origin of the fire will be the area of heaviest damage, so overhaul efforts designed to minimize damage will be of little use in that area in any case. Investigators should carefully review the materials present at the fire origin, working through each "layer" until the floor is gradually uncovered. Specifically, they should inspect the area for characteristic burn patterns, indications of fire temperature and duration, possible sources of ignition, and possible presence of fire accelerants such as gasoline, paint thinner, or alcohol. The particular types of equipment which may be useful in conducting the cause and origin investigation are noted in Section 4.5. Investigators must carefully document their findings and preserve any physical evidence to be analyzed in the forensic laboratory. In this regard, it is important that proper evidence collection procedures be followed. Evidence should be placed in containers which may be securely sealed and each piece of evidence should be labeled. In addition, it must be stored in secure locations and the names of all persons who handle the evidence must be noted. These precautions are essential, since most jurisdictions will not allow evidence to be introduced in court unless it can be demonstrated that the "chain of custody" was maintained--that is, that no one could have tampered with the evidence between the time it was collected and the time it is introduced in court.

In addition to examining physical evidence of the fire, investigators should obtain other types of information which will assist in the later criminal investigation. These may include, for example:

- Observations of doors and windows. Were they locked, closed, or opened? Was there any sign of forced entry?

- Names and addresses of spectators and witnesses. In addition, the license plate numbers of automobiles in the area may also be helpful in later investigative efforts.

- Characteristics of the fire. Did it spread with unusual speed? Was it difficult to extinguish? Were there any unusual smells?

- Materials found (or not found) inside the building. Were there any unusual building contents such as piles of combustible materials, gasoline cans, etc.? Conversely, were building contents such as valuable property or furniture missing?

Some line managers of arson teams feel that there may be disincentives for investigators to classify fires as arson. The arson investigative process is often unpleasant and offers few rewards in terms of the eventual arrest and conviction of the offender. In addition, reporting an arson may mean increased paperwork and a heavier work load. To cope with this problem, many cities follow Philadelphia's example of separating the identification of arson from the investigation of suspects. There, the battalion chief at the scene makes a preliminary determination by using a check-off list on the fire incident report (avoiding the need to complete any long forms); the fire scene inspector gathers the physical evidence, takes photographs of the scene, and fills out all necessary reports. If arson can be established as a cause, the case is turned over to another fire investigator or police detective to identify, locate, and investigate suspects.

4.3 The Continuing Investigation

Once the initial investigation indicates arson, the focus of the investigation shifts from the fire itself to the fire as a criminal incident. During the continuing investigation, then, the arson unit must attempt to discover why the fire was set and who set it. In addition, evidence which establishes both the involvement and guilt of the arsonist must be obtained.

Much of the preliminary information necessary to start the investigation is gathered during the initial on-scene investigation. For example, evidence on the methods used to start the fire or the degree of "professionalism" involved in the arson may narrow the potential list of offenders. If the fire originated in a public area of the building and involved only the ignition of newspapers and rubbish, it may be the work of juvenile vandals; however, if the fire involved sophisticated timing devices or explosives, it is more likely to be the work of a professional "torch." Similarly, results of the initial investigation may yield the names of potential witnesses to be

interviewed or the license plate numbers of suspicious vehicles. Finally, the condition of the building itself may provide several valuable clues: locked doors and windows may point to building owners or tenants as possible suspects, since they alone could have access to the building; fires in abandoned buildings, on the other hand, may indicate vandalism.

The nature of the continuing investigation may be influenced to some extent by the "type" of arson fire being investigated. Thus, a helpful first step in any continuing investigation is to attempt to establish the motive--vandalism, pyromania, revenge, crime concealment, profit, and so on. Cases in which the motive is not thought to be economic gain may be investigated by questioning of neighbors, witnesses, and residents of the building to determine if any suspicious activities were observed or to learn of any unusual hostilities in the area. Similarly, these individuals may be able to provide information on youth groups or problem children who may have been involved in fire setting activities.

Investigations of arson-for-profit, on the other hand, will focus on (1) the physical condition and financial status of the building or business, and (2) the financial status of owners, residents, business competitors, business partners and so on. Some of this information may be determined through interviews with persons associated with the building or business. However, it is also essential that the investigator conduct an analysis of existing financial and property records, concentrating on such trouble signs as deteriorating condition of the building, unpaid loans, past due accounts, poor business conditions, recent histories of repeated selling of the building, overinsurance, or liens on the property. Specific types of information which may be of use in the investigation are described in Chapter 7, Arson Data Systems.

The "paper chase" involved in the investigation of arson-for-profit may demand months of investigative effort, and cities have developed a number of approaches to alleviate the considerable strain which these investigations may place on arson unit resources. One such method, illustrated in the Bronx, is to utilize investigators from all involved agencies--fire, police, and prosecution--and to distribute responsibility for investigations among these agencies such that no one group is overburdened and each group is involved in only those aspects of the investigation which match their specific area of expertise.

As noted earlier, general responsibility for managing the arson investigation process is given to the Bronx Coordinated Arson Project, which is headed by the Bronx District Attorney's Office. However, specific investigative duties are divided among fire inspectors, police detectives, and investigators from the Prosecutor's Office. If the firefighters at the scene suspect arson, both the police and fire marshals are called in. Then, the police, in an attempt to identify possible suspects, immediately canvass the area, look

for witnesses, and later make sketches or take photographs of the fire scene. The fire marshals sift through materials found at the fire ruin and perform forensic tests on the residues to establish the cause and origin of the fire.

The Bronx District Attorney reviews all fire incident reports, preliminary reports from the police, and cause and origin reports from the fire marshals. Based on the legal sufficiency of the existing evidence and the likelihood of uncovering additional evidence, the prosecutor then decides whether or not to proceed with further investigation and eventual prosecution. Depending on the type of arson case involved, investigative responsibility is again divided. If the case involves street crimes or vandalism, the police are charged with the investigation. However, if it appears that arson-for-profit is involved, investigators from the District Attorney's Office are assigned. They take responsibility for the "paper chase," examine public and private records to uncover documentation identifying the true owner, ascertain mortgage and insurance information, and establish a financial profile of the property. The prosecutors also use their negotiating skills to obtain evidence; thus, the District Attorney's Office may negotiate a plea with the "torch" in order to get at the true owner. By dividing responsibilities in this fashion, investigative caseloads for each group are kept within more manageable bounds.

Philadelphia, on the other hand, illustrates an alternate approach to reducing manpower shortages on very lengthy investigations--collaboration with a federal agency. In the case of Philadelphia, the agency involved is the Bureau of Alcohol, Tobacco, and Firearms (ATF). Working with the local police department and fire marshals, ATF agents have been instrumental in solving several arson-for-profit cases in the Philadelphia area. ATF involvement in these cases is authorized through Title II of the 1968 Gun Control Act, which permits ATF to investigate all explosions or unexploded bombs, and Title XI, which permits ATF investigation of fires where organized crime may be involved.

In addition to manpower, ATF offers Philadelphia the following advantages in investigation and prosecution:

- the ability to investigate fires, prosecute related cases, and make arrests across state lines and in counties surrounding Philadelphia (important in Philadelphia, which is a tri-state area);
- the ability to obtain telephone company records for an interstate toll call analysis;
- the ability to convene a Federal Grand Jury and prosecute on federal offenses such as mail fraud;

- the availability of sophisticated electronic surveillance equipment; and

- access to U.S. court dockets which are less crowded and afford the possibility of obtaining stiffer sentences.

In the Philadelphia area alone, ATF is currently investigating 20 fires with combined insurance claims of some $28,000,000. Although the extent of ATF involvement in Philadelphia's arson control program may be somewhat unique, it illustrates the value of a collaborative local-federal effort in the fight against arson.

ATF is also involved in anti-arson activities in other jurisdictions. Currently, it is working with arson task forces in 17 cities in conjunction with the Organized Crime Strike Forces established in those cities by the U.S. Department of Justice.[3] In addition, ATF laboratories are available to any police or fire department that may request support for the forensic aspects of an arson case. Finally, ATF offers training to laboratory technicians, and will respond to general requests for investigative assistance with agents trained in arson investigation.

In general, an effective response to arson-for-profit will normally require resources beyond those available through police and fire departments. In addition to linkages with local, state and federal prosecutors and federal ATF authorities, other potential sources of support for the investigation include the FBI and private insurance companies:

- The FBI under the Racketeer Influenced and Corrupt Organizations (RICO) Statute of 1970 is able to enter any case in which two or more persons commit racketeering acts that involve interstate commerce. The FBI has participated in investigating several cases involving arson under this law. With the reclassification of arson as a Part I crime, it may be expected to increase its attention to arson-related investigations.

- Private insurance companies using their own or independent investigators are also potential sources of highly trained manpower for investigating arson-for-profit crimes. The transfer of insurance company data to government agencies has in the past been limited due to certain legal problems. These problems are now being rectified in many states. (See Section 6.2.)

If general or case-by-case collaborative arrangements cannot be established with other agencies and there is sufficient reason to believe that arson-for-profit is a substantial problem, the need for expertise in conducting "paper"

investigations should be considered in a unit's recruitment policies or training procedures. Specific areas in which skills are required include accounting, insurance law and practices, financial and inventory auditing, corporate structures, and banking practices, especially those regarding mortgages. A knowledge of computers may also be useful since many property records systems are now computerized.

4.4 Allocating Staff

Most organizations have a range of objectives which "compete" with each other for staff time. Arson units are no exception. Among their objectives are:

- to minimize response time in arriving at the scene of a fire;
- to maximize coverage during high incidence hours;
- to maximize the number of cause determinations made;
- to allow adequate time for case preparation and consultation with the prosecutor prior to trial;
- to maximize arrests and convictions for arson;
- to maximize dollar losses cleared by arrests and convictions; and
- to maximize the proactive strategies used to prevent arson.

Developing a staff allocation plan which addresses each of these objectives is not easy. Often, meeting one objective will work to the detriment of another. For example, in order to maximize the number of cause determinations, the investigator should follow an efficient itinerary from one fire scene to the next. (In a large city it can take longer to travel from one fire to another than it does to make the actual inspection.) However, by organizing his workday around the optimal travel schedule, response time is sacrificed.

A second example of this conflict is the arson unit's mandate to increase arrests and convictions for arson and its simultaneous goal of maximizing dollar losses cleared by arrest and conviction. By some estimates, juveniles are responsible for about half of all reported arson cases. Moreover, they tend to be more vulnerable to apprehension, more likely to confess, and more quickly prosecuted than adults. Obviously, then, investigators should concentrate on these incidents in order to maximize arrests. However, in

contrast to insurance fraud cases, juvenile arson is likely to take place abandoned buildings of little value. The greatest value per arrest clearly lies with the investigation of arson for fraud. Fraud cases, however, demand considerable investigative resources and time, and are thus likely to produce few arrests and convictions.

There are a number of staff allocation procedures which may either help to alleviate some of the conflicting pressures on staff time or enable arson units to meet the demands of their highest priority objectives more efficiently. It must be recognized, however, that the optimum strategy for one jurisdiction may be very different from that of another, due to differences in resource availability, the nature of the arson problem in the community, local conditions such as city size and geography, and the explicit or implicit priorities assigned to each objective by local decision-makers. Thus, the following examples can only illustrate some of the many possible staff allocation policies which arson units may employ.

Minimizing response time requires that the investigators be available, on duty or on call, 24 hours a day, seven days a week, and that the dispatcher know exactly where to locate them. The best way of meeting these conditions is to assign investigators to a central facility on a full-time basis. Thus, arson squad members can be easily contacted, either at the station or in radio cars, and dispatched directly to the scene of the fire from the closest point.

Other measures to minimize response time include:

- matching the number of investigative personnel on duty at a given time to the risks of fire at that time (as determined by prior data analysis);
- posting work schedules in several locations, including the office of the fire dispatcher;
- if fire investigators have multiple functions, carefully defining their non-arson-related functions to avoid any conflict in duties in the event of a suspicious fire; and
- developing dispatch priorities, so that arson squad members are first directed to the most serious fires. For example, incidents involving fire deaths would receive top dispatch priority, while vacant building fires with no witnesses might receive a lower priority assignment.

To maximize coverage during high incidence hours, some larger communities have developed sector assignments for fire investigators. Thus, investigators

would normally assume responsibility for only those incidents occurring within their own sector. However, during high volume periods an investigator from one sector may be called into another where the number of incidents exceeds the investigative capacity available at that time. Although such a system demands a well-coordinated dispatching system, it is one effective method of ensuring maximum staff use and efficient coverage for high incidence hours.

This approach may also be useful in reducing response time, as the experience of Philadelphia indicates. There, one investigator is assigned to each of nine areas in the city on weekdays. To provide coverage at night and on weekends, one person is on duty to investigate the largest fires or clearly suspicious fires city-wide; other night-time or weekend fires are investigated during the weekday.

To maximize arrests for arson, some communities assign investigations to different agencies, based on the type of arson involved. In this way they hope to match the demands of the investigation with the skills of each agency. In Philadelphia, for example, police detectives are assigned cases in which the perpetrator is thought to be either a juvenile vandal or someone with a revenge motive. The investigative procedures required for these cases are similar to those used in street crimes and domestic disputes, both of which the police routinely handle. The cases are usually solved by an informant and a confession, rather than by a complex chain of evidence. Arson by known pyromaniacs, one of the most infrequent types of arson, is investigated by detectives on the central arson squad who keep a file with a careful description of the pyromaniac's modus operandi. M.O.'s of arson fires are compared with those in the files in an attempt to identify the offender. Finally, complex arson-for-profit cases are assigned to the arson squad detectives, who work with ATF agents. This enables investigators to spend the necessary months gathering and refining evidence which may lead to an arrest and prosecution. A similar approach to dividing investigative responsibility is taken in the Bronx.

Regardless of which of these organizational configurations is chosen, the crucial task confronting the program planner is to divide and define responsibilities so that each participant knows his or her functions in the investigative process. Once the various functions are defined, operational criteria and performance standards should be established for each. For example, fire inspection may be deemed to require (1) investigating all fires involving more than $1,000 damage and (2) arriving at each such fire within one hour of the initial alarm. Similarly, it may be decided that the investigation of suspects requires one month of staff time for arson fires with losses of over $250,000. The standards that are established for each function can then be compared with actual fire data to determine a staffing level for each function. For example, by knowing the frequency of fires over $1,000 and the amount of time necessary to inspect each one, considering travel, evidence gathering,

laboratory, and necessary down time, the number of staff necessary to conduct fire inspections can be established. The analysis can be repeated for each function and an appropriate staffing pattern may thus be derived.

4.5 Equipment and Laboratories

The survey conducted in the course of preparing this document showed not only that most arson units are small, but that they operate with very little equipment. The smaller cities, of course, tend to have less equipment. Most of the respondents in cities under 150,000 said that they had only hydrocarbon detection equipment, while half of the larger cities reported having an arson van and other more sophisticated equipment. Twenty-five percent of the departments responding reported having no equipment at all.

Each of the cities visited had access to most of the following equipment:

1. Incendiary Detection

   Hydrocarbon indicator
   Gas chromatograph
   Explosimeter
   IR spectrophotometer

2. Surveillance

   Intrusion detection equipment
   Photo surveillance equipment
   Ultraviolet light
   Binoculars

3. Vehicles

   Van for interviews, investigation
   Mobile laboratory
   Patrol cars with two-way radios

4. Regular Law Enforcement Equipment

   Polygraph
   Fingerprinting devices
   Tape recorders

5. Evidence Gathering Equipment

   Cameras
   Core drills
   Collection cans
   Pick and shovel
   Sifting screen
   Sealer tape

The devices listed under Incendiary Detection are primarily lab equipment, with the exception of the hydrocarbon indicator. Most investigators reported that these indicators do not function well. They are difficult to adjust and too imprecise to distinguish between flammable materials present in sufficient quantity to set a fire and those present only in trace amounts. Because of the gross results they produce, hydrocarbon detector readings (taken at the scene) are not admissible in court. Thus, evidence of the cause of a fire is directly linked to the results of laboratory tests. The sufficiency of

physical evidence at the trial, then, depends critically on the quality of laboratory analysis.

Good laboratory support must include accurate analysis and fast turnaround time on results. Arson evidence is said to be difficult to preserve and laboratories are criticized as being poor at identifying substances. The net effect, according to this argument, is that the physical evidence available to the prosecution is inadequate. However, investigators and prosecutors in the cities visited did not universally share this view. While all sites reported some laboratory problem or need, the range of shortcomings varied widely both in degree and kind. Thus, Denver reported no major operational problems, while New York reported substantial difficulties in working with the police laboratory, both in terms of response time and quality of analysis. The other sites reported problems with equipment, manpower, analysis and/or turnaround time that generally fall between these two extremes.

Laboratory support is available from the Federal Bureau of Investigation and the Bureau of Alcohol, Tobacco and Firearms with laboratories across the country. In addition, laboratory support may be found at the state level, the county sheriff's office, or the local police department. The cities visited used a variety of laboratories to analyze evidence. Four used the local police department lab; two of these also used the ATF labs. One relied completely on the state labs, and one used only the county sheriff's laboratory.

4.8 Summary

In most incendiary fires, there is seldom a victim who comes forward to report the fire as a crime and trigger an investigation. Identifying suspicious fires and determining their cause and origin is the key role of the fire investigator. Following the detection of arson, the diversity of possible motives imposes special requirements on the organization of the continuing investigation function.

Several general guides for the application of investigative resources have been suggested by the experiences recorded in this chapter:

(1) The initial investigation of fires for arson should be guided by explicit criteria intended to maximize the probability of arson detection. These criteria may be broadly defined to include all fires of undetermined cause and/or all that involve injury or property damage in excess of a specified amount. Over time, an analysis of the specific characteristics of past fires

identified as arson may assist in narrowing the criteria for future investigations.

(2) The initial investigation is often the key to the entire arson investigation. The following elements are essential:

— Response time to the fire scene should be minimized. Investigators should arrive while the fire is in progress, in order to prevent the destruction of evidence and observe external characteristics of the fire which may assist the cause and origin determination.

— An initial "criminal" investigation should be carried out during this phase of the investigation. Investigators should take the names of witnesses, observe any suspicious actions on the part of spectators, note the condition of doors and windows, and note any unusual internal building conditions such as the removal of valuable items prior to the fire.

— A thorough cause and origin investigation should be made, as an arson prosecution must demonstrate that the fire was not accidental. Any evidence taken at the fire scene must be sealed in appropriate containers and labeled. In addition, the chain of custody of this evidence must be preserved.

(3) In organizing the continuing investigation function, every effort should be made to match the available investigative resources to the needs of particular types of arson cases. For instance:

— Local police authorities may be best suited to investigate and apprehend suspects in cases related to neighborhood street crime or domestic squabbles.

— Members of the arson unit itself may be in the best position to track arson by known pyromaniacs.

(4) The investigation of insurance fraud and related arson-for-profit schemes will normally require specialized skills not available among police and fire investigators. Collaboration with local, state and/or federal prosecutors, federal ATF authorities, the FBI and insurance investigators can help to support the investigation

of these cases, conserving the time of unit personnel.

(5) Laboratory support need not be dependent on local resources if appropriate links are made to state, regional, and federal laboratories.

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4. National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U.S. Department of Justice, Arson Control, A Review of the State of the Art with Emphasis on Research Topics by Stephen J. Tauber (Washington, D.C.: Government Printing Office, 1978), pp. 53-55.

CHAPTER 5: PROACTIVE STRATEGIES

The traditional approach to dealing with arson cases--focusing almost exclusively on the apprehension and prosecution of offenders--is clearly inadequate for controlling today's arson problem. Strategies designed solely to increase arrests and convictions appear to have had little effect on the incidence of arson. Some observers believe that, although justice may be served by arresting and convicting an arsonist, the existence of similar economic or social conditions within a community will incite another arsonist to rise and take the place of the one apprehended.

Given the shortcomings of the traditional focus on apprehension alone, a number of cities have experimented with various approaches to deter potential arsonists. The use of show-of-force arson patrols, media and community relations campaigns, juvenile service programs, community organizations, and improvements in building and health code enforcement are the most common tools employed to reduce the opportunities or motivations for arson. These activities are discussed in the following sections, while the passage of new laws or ordinances to reduce the incentives for arson will be considered in the next chapter.

5.1 Arson Patrols

Preventive arson patrols, designed to deter arsonists by introducing a very visible official presence in high-risk neighborhoods, may be operated by police or fire departments (in the latter case from investigation or fire suppression units). Two men in a squad car usually patrol streets at high-incidence times during the day and in areas that have a recent history of suspicious fires. They stop occasionally to talk with residents or merchants, explaining their presence and requesting information on past or potential fires.

Seattle and New York have employed arson patrols with some apparent success. At one time New York had as many as 100 men on patrol in special target neighborhoods which were plagued by vacant building fires, especially areas in the South Bronx and Bushwick/Brownsville in Brooklyn. With the presence of the patrols, arson fires in these areas were reduced by 40 percent. The patrols consisted of fire marshals in patrol cars making unpredictable visits to the target neighborhoods and removing squatters from vacant buildings. The patrol routes were established by examining the fire patterns over a one-month period. Pin maps were constructed to indicate the location of arson fires, with the pins coded by type of structure and week of occurrence. The structure code distinguished among occupied residential, vacant residential, institutional, and commercial buildings. When one week's pins were added, the pins which had been posted four weeks earlier were removed, as information more than one month old was considered to be of little value in determining the route for the following week's patrols.

Seattle arson patrols are conducted in a similar manner. Recent data are analyzed for clusters of arson fires and compared with computer listings of prior incidents to determine the boundaries of districts for patrol assignments. Unlike New York, where patrols are staffed by new personnel assigned to the investigative unit, the Seattle patrols are staffed by the fire suppression units, thereby utilizing staff who would otherwise be unoccupied at the fire house. When a battalion is called to a fire, however, firemen must abandon their arson patrol duties to respond to the fire. Seattle's arson patrols function on a city-wide basis, although sections experiencing a very high incidence of arson fires receive the most attention. The patrols in Seattle are also provided with information on specific suspects or vehicles linked to previous fires, thus enhancing the chances of making an arrest.

In general, the arson patrol technique is only cost-effective when applied to a highly concentrated arson problem. Rarely, if ever, are professional torches detected by an arson patrol. It may be especially effective, however, in deterring juvenile vandals in groups of vacant or partially occupied buildings. Officials may also choose to implement patrol strategies because of their projected success in minimizing overall response time.

Covert patrol is a related technique which is used to a limited extent in a number of cities. It involves placing a particular building under surveillance because it represents an extremely high arson risk. Surveillance may include the use of intrusion detection devices or night infrared lenses designed to "see through" dark windows. These devices are used in conjunction with a "stake-out" by detectives or investigators in a nearby building.

No arson unit claims to have made a substantial number of arrests using this technique, but many cities can cite at least one instance in which an important case was cracked through the use of surveillance. Successful covert

actions usually involve placing a particular building under surveillance based on a tip that a known torch is going to set fire to it. This may be the only technique available when there is insufficient evidence for previous fires to obtain the conviction of a known suspect.

5.2 Media Campaigns

Efforts to reduce arson by using the media to inform the public are relatively new. Seattle has made perhaps the greatest effort of any city to elicit support from its citizens through media use. A public relations specialist in the Fire Chief's Office has major responsibility for public relations activities with the Chief and the arson task force playing advisory roles. Undertaking a campaign called "Arson Alarm," the public relations effort has made arson a visible public issue in an effort to marshal all available resources to combat the problem. Building upon interest generated by the formation of its arson task force, Seattle used television, radio, and newspapers to get a single message across:

> If you start an arson fire in Seattle, you stand a good chance of being caught. And if you get caught, you stand an even better chance of going to jail.

The campaign was developed with the assistance of a public relations firm which only charged the city for its actual production costs. Presently, the effort to combat arson through public education is combined with the department's other media efforts.

Complementing the public education effort are a hotline and a reward program. The hotline number is listed in directories, announced in advertisements, and printed on posters which are nailed to buildings where arson fires are known to have occurred. Informants using the hotline know that they need not identify themselves. Seattle received 31 calls on the hotline in the six-month period following its initiation. While this does not seem like a large number, it represents information on some 12 percent of the total arson fires during that period and approximately $100,000 in fire losses.

In Seattle, both the hotline and the reward program are sponsored by the State of Washington Insurance Council, which provides $5,000 per year in rewards for information leading to the arrest and conviction of arsonists. Although the entire $5,000 is awarded each year for information which led to convictions in the previous year, not every informant receives an award. Police and fire departments throughout the state submit names of informants to the Arson Alarm Foundation Board, which selects the recipients on the basis of the seriousness of the crime, the circumstances under which the information was given, and the persons involved. It is expected that, as

of September 1979, the amount of money to be awarded annually will be increased to $7,500.

In addition to these general campaigns, the fire department searched for a public relations strategy that would reach the youth of the city. Two approaches were developed: a "Name the 'Arson Rat' Contest" and public service announcements by professional athletes playing for Seattle teams. A local insurance company donated the posters and entry blanks for the "Arson Rat" contest, for which four thousand entries were received. The winning slogan, "Stop Sinder Sid," was emblazoned on T-shirts sold to benefit the anti-arson programs of the fire department.

The professional athletes donated their time for 30-second T.V. spots. All announcements began with film of the athlete himself, playing and describing the demands of his sport. The film proceeded to the scene of a fire, illustrating the demands placed on a firefighter. Finally, the athlete made a personal appeal to youths not to start fires. After completing these media campaigns directed at juveniles, Seattle reported a decrease in all fires caused by vandalism and especially those set in school buildings.

Denver and Dallas have also developed public awareness campaigns. Dallas chose a more dramatic slogan, "Burn an arsonist for cold cash," to publicize its reward program for informants. Both cities also set up hotlines and established their reward programs with funds donated by the insurance industry. A flat sum is donated for rewards. An annual review of all cases that were solved with the help of informants is conducted and the total reward sum is then divided among the informants who are deemed qualified.

While these media efforts appear promising, they were not designed to permit statistical validation and it is therefore difficult to attribute changes in the incidence of arson to any particular strategy. It is interesting to note, however, that Seattle's arson fires decreased 22 percent and total dollar losses from arson decreased 47 percent in the year following the implementation of its arson prevention efforts. Similarly, Dallas reported a 28 percent reduction in arson fires following its media campaign. While these changes may not be due to the efforts described above, it is clear that a well-planned public awareness campaign can assist in the immediate detection and investigation of arson. These functions should be considered along with the long term goals of prevention and deterrence in the development of specific campaign strategies.

5.3 Juvenile Service Programs

In addition to broad public relations efforts geared to reach the juvenile arsonist, school-based education and counseling programs offer another opportunity to address this target group. A profile of 713 cases of juvenile arson and false alarms in San Diego has generally confirmed common wisdom on the motivations for these offenses. "Both false alarms and arsons were found to be 'little boy' problems not limited to any socio-economic group or ethnic category. Most of the offenses were committed by young children who were playing or experimenting with fire, or by older youths, usually in their teens, who became involved for more complex reasons--typically of a family or personal crisis nature."[1]

To address these problems, fire safety education sessions, often combined with "ride along" programs to demonstrate the consequences of an arson fire, have been implemented sporadically in many communities. Recognizing the need for more effective management of the juvenile arson problem, members of the Los Angeles County Fire Department collaborated with mental health professionals to develop a program which would aid fire service personnel in the identification and referral of young children with fire setting tendencies. A manual describing the techniques used in the Los Angeles program was published recently by the U.S. Fire Administration.[2] Sample child and parent interview forms are provided in the manual, along with some basic guidelines for determining whether educational intervention or professional counseling is most appropriate in individual instances. The manual stresses the importance of parental cooperation, especially when the target child is very young and possesses a limited understanding of the destructive consequences of fire.

In Seattle, the fire department's community organizer works with fire investigators to identify children with dangerous fire setting tendencies. Young children are referred to a United Way Family and Child Service counseling agency, while children over 12 must be sent to juvenile court. The referral service is widely publicized and parents who suspect that their child may have a fire setting problem are encouraged to notify the Investigation Unit of the Seattle Fire Department. Groups of youngsters are also involved in clean-up efforts in areas that are prime targets for juvenile vandalism. Directed by the community organizer, these groups often receive payment for their services from the property owners.[3]

5.4 Community Organizations

Organizing communities to reduce arson, or utilizing existing community organizations for that purpose, appears to be another promising approach. The most visible example of a successful community effort is the Symphony

Tenants Organizing Project (STOP) in Massachusetts, which led to the apprehension of an arson-for-profit group that had destroyed $6 million worth of property. STOP developed a three-phase program for combatting arson. First, a group of tenants and VISTA volunteers examined insurance information on buildings in the neighborhood. Second, insurance companies and city code enforcement agencies were notified about suspicious activities of landlords and fire and safety hazards. Third, the group is presently working with the Department of Housing and Urban Development to redevelop the neighborhood and retain ownership of buildings among neighborhood residents.

If resistance was met at any stage, the media was called upon to arouse public interest and break the impasse. This strategy was employed successfully when the chief investigator of the State Fire Marshal's Office convinced news reporters that the fires on Symphony Road were set by drunks and vandals. The STOP group's case was heard through television and radio appearances, resulting in action by the Attorney General and the subsequent conviction of the chief investigator who was implicated in the arson-for-profit ring.

In a continuing effort to mobilize neighborhood resources against arsonists, the Seattle task force publishes a "Community Assistance Bulletin," an open letter to residents of a neighborhood in which an arson fire has recently been set. The letter identifies the time and place of the fire, provides detailed information already known to the fire department (e.g., a description of suspects or suspicious vehicles known to have been in the area at the time of the fire), reminds citizens of the reward fund, and provides a telephone number to call with information that will be held in strictest confidence if requested.

A number of other cities have organized block watches by neighborhood citizens' groups during times of heavy arson activity. Residents devise a system of monitoring the neighborhood and communicating with the fire department or, when appropriate, providing information on suspicious activities, arsons in the making, and evidence that may lead to the arrest and prosecution of arsonists. Other community groups, such as HART in Hartford and The Woodlawn Organization (TWO) in Chicago, have proven effective in reducing the incidence of arson and eliciting support from city, state, and federal agencies.

TWO is a multi-service umbrella organization for community groups in Woodlawn, a neighborhood located in the south side of Chicago. These groups are involved in a variety of social service and anti-crime programs. Under TWO's Greater Woodlawn Crime Prevention Program, funded by LEAA, a crime watch organization of neighborhood residents was formed. Through slide presentations and workshops run by the police and fire departments, residents learn about detecting and reporting signs of criminal activity.

Several workshops have been devoted to the problems of arson and abandoned buildings. Following a rash of arsons three years ago, TNO was instrumental in obtaining improved fire prevention and protection services from Chicago Fire Department.

HART is a non-profit community organization operating in three blue-collar neighborhoods adjacent to the Capitol area in Hartford. The organization is headed by a Board of Directors consisting of neighborhood residents and, like TNO, it deals with a variety of neighborhood problems. The structure of HART is a network of "block clubs," each composed of 20 to 40 people who live within a one or two block area and meet regularly (every four to six weeks) to discuss and handle neighborhood problems. In the arson area, HART has adopted the arson early warning system developed in Boston. Each block club maintains a manual file on all neighborhood properties, identifying any arson warning signs (e.g., absentee owners, back taxes, code violations, empty apartments) associated with them. The file is updated at each meeting and, when a warning sign surfaces, the block club acts to remove the negative factor. The club first confronts the owner with a request to remedy the situation, which may lead to an immediate resolution of the problem. Even if it does not, however, the owner becomes aware of the neighborhood concern and thus may be less likely to consider arson. If the owner does resist in correcting the situation, HART can use a number of means and resources to achieve the desired result. One tactic is to get the bank holding the mortgage on the property to pressure the owner through threat of foreclosure. HART may also organize the owner, bank, and neighborhood residents to locate a new owner-occupant and to secure refinancing for the new owner.

5.5 Code Enforcement

Building and health departments conduct inspections parallel to those of the fire department. Building inspectors check for structural, electrical, plumbing, and gas line defects to ensure that the users of a building are not subject to risks of death or injury. Health code inspectors check public facilities (e.g., institutions, restaurants, and public restrooms), primarily to determine if health hazards exist. These inspections are important to prevention in three ways. First, the installation of fire detection and extinguishing equipment reduces the potential damage from an arson fire and increases the likelihood that evidence of arson will be uncovered. Second, the failure of a particular building to meet code standards may indicate that the building has lost its economic viability and therefore is a possible target for an arson fire. Finally, the mandated upgrading of a building, if completed, reduces the profitability of an arson fire because of increased investment in the property by the owner. If the mandatory improvements are not made, subsequent inspections remind the owner that his actions are being scrutinized and deliberate destruction of his property is not likely to go undetected. It must be noted, however, that naive or indiscriminate implementation of this strategy could result in the precise behavior it was

designed to combat. Sudden strict code enforcement in an area where deterioration has gone unchecked in the past might lead a building owner to torch his own property rather than incur the considerable expense of extensive upgrading.

Officials in New Haven and Massachusetts are convinced that arson can be greatly reduced if concerted efforts are made to check the deterioration of buildings before their economic value has eroded completely. Both jurisdictions are working on data systems to identify signs that a building will be vulnerable to arson. Once a vulnerable building is identified, an appropriate response strategy might include code enforcement efforts. The system in New Haven, called the Arson Warning and Prevention Strategy, has been funded by private insurance interests and the United States Fire Administration.[4] In Massachusetts, a private non-profit corporation, Urban Education Systems, is developing a system called the Arson Early Warning System in five cities.[5] This project is funded by the U.S. Fire Administration through the State Lieutenant Governor's Office.

When completed, both the Massachusetts and New Haven systems may be used to trigger a strategy which confronts landlords and business owners who have property meeting the high arson risk criteria. Fire officials will contact owners for three purposes: (1) to warn them that code violations must be corrected; (2) to persuade them that rehabilitation is economically viable; and (3) to inform them that the city will support neighborhood improvement efforts or link them with sources of low-cost financial assistance for rehabilitation. In Seattle, a variant of this strategy has already been used to curb the incidence of arson for insurance fraud:

> When "pull tabs," a sort of instant lottery, were banned from Seattle taverns several years ago, fire officials expected some tavern owners who had depended on the pull tab income to burn their businesses for insurance. After finding out who would be hardest hit, fire marshals ... repeatedly inspected likely targets. They let the owners know that "accidental" fires would be considered highly unusual by fire investigators. After several visits from fire marshals, owners called to complain that the fire department was harassing them and trying to put them out of business. "'Oh, no, we're trying to keep you in business. You haven't had any fires lately, have you?' ... That's what we told them," laughs Chief Ramsey.[6]

The New York situation represents the end of the urban decay cycle, when the condition of the building stock in an area has declined past the point where enforcing codes could help to arrest deterioration. Many fire departments board up isolated buildings that are considered fire hazards, but other cities have not had to face the burning of vacant buildings on the same scale

that New York did in the South Bronx and Bushwick/Brownsville. The city had to have property condemned by the appropriate code enforcement departments and then decide whether to simply board up a building or expend urban renewal funds to have it torn down. This necessitated extensive cooperation from agencies represented on the task force, particularly the housing department and the fire department. The Deputy Mayor for Criminal Justice assisted in the passage of city ordinances to prohibit building strippers from selling stolen goods to junk dealers since strippers frequently used arson fires in New York City to scare out tenants and gain access to vulnerable buildings.

Decisions to implement any one or more of the strategies outlined here must be based on a sound understanding of the nature of a target community's arson problem. The deployment of an arson patrol requires information on the time, location, and concentration of suspicious fires. Similarly, information on the common targets and motivations of arson is required to select appropriate public education strategies or to make decisions to monitor code violations and other characteristics of high risk properties. Chapter 7 provides an outline of a system to address these information needs.

5.3 Summary

The crime of arson is characterized by many different motives, strategies, and types of perpetrators. Just as investigative resources must be suited to the needs of specific cases, it is important to tailor prevention and deterrence programs to the needs of a given jurisdiction.

(1) If the arson problem is sufficiently concentrated, <u>arson patrols</u> may be effective in deterring and possibly apprehending perpetrators. Arson patrols in New York and Seattle are deployed to provide a high-visibility presence in high-risk areas, particularly those where vandalism is frequent.

(2) <u>Covert patrols</u> may be used if vulnerable buildings are known or to apprehend suspects on whom tips have been received. The targeted building is "staked out" and placed under surveillance through the use of sophisticated equipment such as infrared lenses and intrusion devices. Covert patrol techniques have been employed in New York and Philadelphia to arrest professional torches in the act of committing a crime.

(3) <u>Media and public relations</u> efforts may also prove effective in reducing the incidence of arson. By making arson a visible public issue and arousing

community interest, adult focused media campaigns can assist in creating a climate of opposition to the crime, facilitating citizen cooperation in the reporting of evidence and participation in subsequent investigations. A media campaign aimed at juveniles was successfully implemented in Seattle, involving sports figures, T-shirts, and a "Name the 'Arson Rat'" contest.

(4) Rewards may be offered to deter or apprehend torches and building strippers. These rewards can be publicized along with hotline numbers in an effort to encourage potential informants to come forward. Reward-hotline programs are used in Seattle, Denver, and Dallas.

(5) Juvenile service programs can be effective when juvenile arson and vandalism are evident. School-based arson education programs may be developed through collaboration between the fire department and the school. Another strategy involves the early identification of youth who exhibit fire setting tendencies for referral to counseling programs within the school or community. Finally, efforts to organize community youths to clean up junk-filled lots or deteriorating residences may also assist in reducing the opportunities for vandalism and arson.

(6) Community organizations can provide valuable assistance by collecting property and insurance information, maintaining an alert stance, and reporting any suspicious individuals or vehicles seen in the neighborhood. Citizens in Massachusetts, Seattle, Chicago, and Hartford have demonstrated the potential success of community-based efforts designed to combat local arson problems.

(7) Finally, strict code enforcement can help to reduce the likelihood of owner-initiated fires by checking the decline of a building and the neighborhood in which it is located. If buildings retain their economic value there is nothing to be gained by burning them. Code enforcement efforts are being developed in Massachusetts and New Haven, where computer-supported data gathering techniques are used to pinpoint neglected buildings that may become arson targets. Officials must act with extreme caution, however, if a building is not identified until after substantial deterioration has occurred,

when the demands of code-mandated upgrading could place a severe financial burden on the owner and lead to, rather than discourage, arson attempts.

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CHAPTER 6: LEGAL ENVIRONMENT

To a large extent, state statutes determine the range of options available to public and private sectors in combatting arson. This chapter focuses on the three major aspects of the statutory framework: penal statutes, laws affecting insurance practices, and laws relating to anti-arson jurisdictional authority.

6.1 Penal Statutes

At common law, arson was defined as "the malicious burning of the dwelling of another."[1] Some of the common law elements of the crime have persisted to the present day, often impairing the effective prosecution of arson. For example, absent insurance fraud, a person may not be charged with arson for burning his own property in Texas.[2] Statutory arson is typically divided into several degrees of seriousness. First-degree arson often requires that the property burned be a dwelling.[3] Burning a non-dwelling is second-degree arson, to which a lesser penalty is attached.[4] Moreover, the term "dwelling" is typically limited to mean a residential habitation. Thus, one could commit an act of arson under circumstances involving great danger to human life, yet still be charged only with second degree arson if the building was classified as a non-dwelling. However, it is true that if other facts are present, such as a reasonable likelihood that life will be endangered[5] or knowledge on the part of the defendant that another person is present,[6] the burning of a non-dwelling is first-degree arson in most states.

Another problem associated with arson penal statutes concerns their sentencing provisions. In some instances, penalties may be too light to constitute an effective deterrent. Until recently, the sentence for burning a dwelling or non-dwelling in California was only two, three, or four years.[7] Conversely, penalties may be ineffectively severe in terms of obtaining a conviction. Thus, in Alabama[8] and New York,[9] one may be sentenced to life imprisonment for committing arson under certain circumstances.

There are two uniform arson laws in existence: the Model Arson Law published in 1948 by the National Board of Fire Underwriters, and the arson section of the Model Penal Code drafted by the American Law Institute (ALI) in 1960. Together, these laws have formed the basis for all of the arson statutes in the United States--27 states have adopted a modified form of the Model Arson Law, whereas 23 have adopted a revised version of the arson section contained in the Model Penal Code.

Recognizing the present laws' inadequacies and the need for uniformity between states, the Alliance of American Insurers, the American Insurance Association, and the National Association of Independent Insurers have drafted a new model arson law to be used as a guide in states where improved arson statutes are sought. The law is reproduced in Appendix B. Proponents of this new model law believe that it can be modified successfully to suit the needs of states which have adopted either the 1960 ALI Code or the 1948 Model Arson Law.[10] Its provisions include penalties for: attempted arson; aiding, counseling or procuring an arsonist; explosions and bombings; causing or risking a catastrophe through the use of nuclear or other destructive forces; and failing to control or report dangerous fires. The establishment of an aggravated arson category provides for the imposition of stricter penalties on those involved in fire setting acts which threaten lives or actually result in death or injury.

Specific state legislative efforts designed to recognize the potential severity of the crime of arson include amendments in Illinois and Ohio establishing a category of aggravated arson. In Illinois, aggravated arson occurs when the arsonist knows or has reason to know that persons are present in the structure and such persons are subsequently injured as a result of the fire or explosion.[11] Under Ohio law, one commits aggravated arson if he creates a substantial risk of serious physical injury to any person or causes physical harm to any occupied structure by means of fire or explosion.[12]

Several states have also increased the penalties for arson. In California, the sentence was raised to two, four, or six years.[13] Indiana changed the felony classifications of the various degrees of arson from a class B to a class A felony and from a class C felony to a class B felony.[14] The corresponding increases in sentences were from 10 years to 30 years and from 5 years to 10 years, respectively.[15]

6.2 Laws Affecting Insurance Practices

Insurance fraud is a frequent motivation for arson, creating a vital need for legislation which can effectively prevent arsonists from reaping a profit. "When insurance is functioning properly, there is...no incentive for arson.

The insured and the insurer have the same interest in the house that a would want a fire to occur."[16] Efforts must be made to eliminate economic incentives for arson and to maximize the effectiveness of the investigative process. Some existing laws which were designed to protect insurance consumers may actually encourage arson, while others serve to constrain its investigation. For example:

- Laws requiring insurance companies to pay an owner the full cash value of his policy if fire damage to his property renders it a total loss. Property which is overinsured in relation to its actual fair market value thus becomes a prime arson target.

- Laws providing punitive damages if insurance claims are not settled within a limited time. An owner tempted to torch his property to obtain insurance proceeds knows that, without concrete proof that he has committed the crime, the insurance company will not be likely to delay the payment of a claim.

- Laws permitting certain ownership arrangements which effectively conceal the identity of true property owners from arson investigators.

- Mandatory Fair Access to Insurance Requirements Plans (FAIR Plans), which may operate to preclude companies from denying insurance to any owner of property, regardless of its high risk as an arson target.[17]

The enactment of new laws capable of combatting arson has also been proposed in several states. For example:

- Laws permitting the withholding of rent payments from owners for use on mandatory improvements which will bring buildings up to code standards.

- Laws creating preferences for insurance proceeds, requiring the payment of back taxes on the property prior to payment of the owner's claim.

- Arson reporting immunity laws to increase the flow of vital information between insurance companies and law enforcement officials without subjecting them to liability for invasion of privacy, thus facilitating the investigation process.

Legislative initiatives pertaining to the above are considered in the remainder of this section.

6.2.1 Elimination of Valued Policy Laws

Valued policy laws require that, in the event of a total loss, the insurer must pay the property owner the full face value of the policy even if the property is overinsured in relation to its fair market value. These laws were originally designed to protect insurance consumers from paying premiums in good faith on a policy with a certain dollar amount and then, in the event of a total loss, receiving a settlement representing a lesser amount. However, property is sometimes overinsured deliberately by the owner, who plans to torch it and reap a profit. Other times property becomes overinsured simply because it depreciates in value due to deteriorating neighborhood conditions. Thus an owner may find that the insurance policy is the only aspect of his property that is maintaining its value and so may decide to "sell" his property to the insurance company.

To address this problem, Oregon does not have a valued policy law and prohibits an insurance company from knowingly issuing a fire insurance policy for an amount which, together with any other insurance in place, exceeds the fair market value of the property insured.[18] In addition, the statute limits insurance proceeds to the extent of the actual cash value at the time of the loss or the amount that it would cost to repair or replace the property, whichever is less.[19] Other states without valued policy laws include New York, New Jersey, Illinois, and California.[20]

6.2.2 Changes in Unfair Trade Practices Acts

The National Association of Insurance Commissioners (NAIC) drafted the Unfair Trade Practices Act in 1972, which permits the imposition of penalties on insurance companies if they fail to settle claims promptly. Approximately 34 states have adopted legislation of this type, with the specific time restriction for claim settlements varying from state to state. While the Act was developed to provide protection to insurance consumers, it may not afford insurance companies sufficient time to thoroughly investigate a suspected arson case.[21]

In some states, it is now being recognized that such laws can serve to encourage arson attempts and impede its investigation. The Massachusetts arson task force, headed by the Lt. Governor's Office, has recommended changing the law to provide insurers with immunity from punitive damage suits for delaying payments on claims if arson fraud is suspected.[22] The task force also recommended that corresponding regulatory changes be instituted to ensure the cooperation of the state's insurance divisions with insurers in holding back claims payments in suspected arson situations.[23] In addition, the task force recommended further study of the effect on prosecution efforts of the statute requiring payment of claims without delay.[24]

8.2.3 Disclosure of True Property Ownership

The identity of property owners is generally critical information in revealing the perpetrators in arson-for-profit schemes. In some instances, however, records of the identity of property owners may not be readily available to arson investigators. If a building is owned by a corporation, it may list only the corporate name on ownership records, rather than the names of the individuals who are the actual owners. Therefore, it may be extremely difficult for arson investigators to locate this important information. In addition to ownership by legitimate corporations, a landlord may establish a bogus corporation simply to avoid personal liability or suspicion.

Straw party arrangements constitute another legal method which may be used to conceal the identity of property owners. Under such arrangements, an individual or company may be listed as the property owner, while actually serving as a front for the true owners whose names are often difficult to obtain. In other instances, the owner may be listed as a blind trust and trustees may legally withhold the identity of beneficiaries or subscribers who are the actual property owners.

While the ownership practices described above are often utilized for legitimate purposes, laws have been proposed in some states (1) to require that the actual owner's names be listed on ownership and insurance records and (2) to allow the disclosure of names of beneficiaries of blind trusts under certain circumstances.[25]

8.2.4 Modifications of FAIR Plans

FAIR (Fair Access to Insurance Requirements) Plans are privately owned organizations through which a state's insurance industry pools its resources to provide property insurance coverage for buildings in so-called "high-risk" areas. Specifically, the Plans are intended to make property insurance available to the owners of reasonably well-maintained property which might ordinarily be regarded as uninsurable by the voluntary market due to environmental hazards beyond the owners' control, such as high crime rates and poor city services. If individuals cannot obtain property insurance coverage on physically adequate buildings located in deteriorated neighborhoods, it is unlikely that these areas will be revitalized.

Although federal guidelines on FAIR Plan operations have been established and authority for monitoring these Plans has been given to the Federal Insurance Administration of the U.S. Department of Housing and Urban Development, FAIR Plans are administered on a state level. Most commonly, the state establishes its FAIR Plan through passage of a state law, and each state's

insurance authority supervises the operation of the Plan in that jurisdiction. While the federal guidelines provide a framework for the Plan, each state is responsible for the design and operation of its own program. Currently, 27 jurisdictions maintain FAIR Plans: California, Connecticut, Delaware, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Puerto Rico, Rhode Island, Virginia, Washington, and Wisconsin.[28]

The FAIR Plan is intended to protect property owners by stipulating that an application for a FAIR Plan policy may not be denied unless an on-site inspection is made. At the same time, the insurance industry is protected by allowing the denial of a policy if the inspection reveals that the building is in inherently poor condition or is undeserving of insurance coverage for other reasons within the owner's realm of control. Ideally, this should mean that, while policies are issued to buildings in deteriorating neighborhoods, the individual buildings holding FAIR Plan policies are themselves in adequate physical condition.

Unfortunately, it would appear that the FAIR Plans actually implemented in some states may not adhere to these ideal operations. As a result, many have argued that FAIR Plans create an incentive for arson-for-profit by prohibiting insurance companies from denying insurance coverage on any property, regardless of its high risk as an arson target. While these criticisms are often leveled at the FAIR Plan concept in general, they are more properly directed at the following shortcomings in implementation and operation of the Plan:

- Some state laws authorizing FAIR Plan practices may not actually afford insurance companies the latitude to cancel or deny policies on buildings which represent high arson risks due to poor physical conditions or other circumstances within the owner's realm of control.

- Inspections may not be carried out (or may be conducted inadequately), which results in many undeserving buildings receiving FAIR Plan policies.

- FAIR Plan authorities have not made adequate use of such available safeguards as high minimum deductibles when issuing policies.

- FAIR Plan officials may incorrectly assume that FAIR Plan policies must be provided to all applicants, regardless of the status of the building.

- Until very recently, Federal Insurance Administration guidelines on the FAIR Plan may not have provided sufficient detail on the circumstances which would allow denial or cancellation of policies.

Thus, careful examination of state laws and insurance procedures is critical to determine whether modifications are necessary from an arson prevention perspective.

To minimize the incentives for arson-for-profit, the Massachusetts Arson Prevention Task Force has recommended the implementation of several changes in FAIR Plan practices. It was suggested that the Federal Insurance Administration revise its recommendations to permit FAIR Plans greater latitude in refusal or cancellation of policies than now exist in some states. Specifically, the Massachusetts task force recommended that refusal or cancellation of FAIR Plan policies be explicitly permissible where there is:

- a failure to pay real estate taxes for three or more years;
- a failure to furnish heat, water, or lighting in public areas for seven or more consecutive days;
- a failure to correct conditions dangerous to life, health, or safety; or
- a failure to supervise buildings as required by law.[27]

Furthermore, it was recommended that FAIR Plans be modified to allow cancellation upon five-day notice where:

- unrepaired fire damage exists;
- the owner has been convicted of arson; or
- the property is vacant.[28]

The Federal Insurance Administration is currently developing new federal FAIR Plan guidelines which will reflect many of the provisions noted above. At the state level, the task force recommended that Massachusetts change its law to permit 10 day cancellation notice rather than the 20 day notice now in effect.[29]

6.2.5 Rent Withholding

As discussed in Section 5.5, code enforcement can serve as an effective arson prevention strategy by checking building deterioration before the property loses its economic viability and the owner stands to profit from committing arson to obtain insurance proceeds. States can enact legislation to provide that, if certain minimum standards are not met, building and health departments are empowered to hold the rent payments of tenants in an escrow account.

The legislation can also specify that such funds be used exclusively on building improvements or relocation costs.

Pennsylvania legislation (Act No. 89) authorizes the County Health Department to redirect rent payments into such an escrow account if a dwelling is deemed unfit for human habitation. The owner can be prosecuted if the violations are not corrected promptly and the rent may be refunded to tenants if noncompliance is still evident after six months.[30]

2.5 Preferences Concerning Insurance Proceeds

In the event of a fire loss, one type of measure requires that insurance proceeds first be used for purposes other than paying the claim of the owner. A number of statutes create a preference for tax liens with respect to fire insurance coverage, requiring that insurance proceeds be used to pay all state or municipal taxes owed on the property before any cash can be paid out directly to the owner. Connecticut[31] and Illinois[32] laws, for example, provide that if the proceeds from a fire loss covered by insurance exceed $5,000, a lien will be placed on those proceeds for the amount of taxes due. The Illinois law also requires that the proceeds be used to pay any demolition expenses incurred by a unit of local government in connection with the extinguishment of the fire.

New York similarly subjects fire insurance proceeds to tax liens on the property and does not limit such preference to any minimum dollar amount of the claim.[33] Still, fire officials in New York feel that their state statute has a serious drawback in that it subordinates the lien to the claim of a mortgagee of record named in the policy. Often, the mortgagee of property insured for insurance is a previous owner of the property rather than a disinterested bank. The mortgagee may conspire with the buyer to collect insurance proceeds by selling and buying the property to and from each other repeatedly (often through bogus corporations), raising the sale price in each transaction so as to increase the insurance coverage. No cash actually changes hands, but the amount of the "mortgage" is increased with each sale. Ultimately, arrangements are made to have the building torched. The proceeds then go to the mortgagee, who is actually one of the conspirators. It must be noted that it is common law and practice for a bank handling a mortgage to be made co-payee on insurance claim checks, as they have a legitimate interest in insuring that the building is restored or the mortgage is paid off.

Similar legislation giving preferences to tax liens has been proposed in Pennsylvania. The Massachusetts Special Legislative Commission on Arson has also recommended that insurance proceeds be used to pay back taxes and to tear down the fire ruin.[34]

6.2.7 Arson Reporting Immunity Laws

The Alliance of American Insurers and its affiliate, the Property Loss Research Bureau, have developed a Model Arson Reporting Immunity Bill (reproduced in Appendix C) to facilitate the exchange of information between insurance companies and certain authorized government agencies. The bill empowers the authorized agencies--State Fire Marshals, law enforcement officers, prosecuting attorneys, and federal agencies--to require insurance companies to submit information relevant to a fire loss under investigation. Companies must also report fires of suspicious origin to the authorities for official investigation. A reciprocity provision allows insurance companies furnishing information to authorized agencies to obtain relevant information from the agencies as well. The bill provides for the confidentiality of all information released. Most significantly, the bill confers immunity on both insurance companies and authorized agencies from any criminal or civil liability for transferring such information unless "actual malice . . . against the insured" is present. Arson reporting immunity laws would also give authorized agencies access to industry-wide insurance information coordinated through a sophisticated data collection system, the Property Insurance Loss Register (described in Chapter 7).

As of July 1979, 35 states have enacted arson reporting legislation patterned after the model bill. The major issue in drafting this legislation has been whether to include the reciprocity provision; most states have omitted it, primarily on the ground that it would be contrary to existing laws on privacy (which are discussed below). Table 6.1 identifies those states that have considered and/or passed reporting immunity bills and indicates whether a reciprocity provision has been included.

Impact of Privacy and Public Information Laws

According to the survey conducted in conjunction with this report, many fire officials believe that privacy laws prevent the sharing of information between insurance companies and law enforcement authorities. Over 80 percent of the states have enacted Public Record laws which establish the presumption that all government records should be public. At the same time, however, approximately 80 percent of the states have in fact placed restrictions on the dissemination of criminal justice information, thus establishing a presumption that criminal justice records should not be open to public scrutiny.[35]

Two basic types of criminal justice data may be subject to request by insurance companies: "criminal history information" and "investigative information." The former refers to identifiable descriptions of individuals together with history of arrests, detentions, indictments, or other formal criminal charges, and any dispositions arising therefrom, including sentencing.

Table 6.1

Model Areas Reporting Immunity Statutes and Bills

State	Citation	Reciprocity Provision
Arizona	H.B. 2014 (Ariz.)(1979)	No
California	1978 Cal. Stats. ch. 922	No
Colorado	S. 30 (Colo.)(1979)	Yes
Connecticut	1977 Pub. Acts, No. 77-139	Yes
Florida	Fla. Stat. Ann. sec. 633.175 (Supp. 1979)	No
Georgia	Ga. Code sec. 92A-734.1 (1978)	No
Hawaii	1979 Hawaii Sess. Laws, Act 215	Yes
Illinois	Ill. Ann. Stat. ch. 73, sec. 1153	No
Indiana	H.B. 1048 (Ind.)(1979)(defeated)	No
Iowa	1979 Iowa Acts, Chapter 36	Yes
Kansas	H.B. 2134 (Kan.)(1979)	Yes
Louisiana	1978 La. Acts, No. 478	No
Maine	Me. Rev. Stat. Ann. tit. 25, sec. 2402 (Supp. 1979)(only confers immunity; does not expressly authorize exchange or transfer of information)	N/A
Maryland	Md. Ann. Code art. 38A, sec. 57	No
Massachusetts	1978 Mass. Acts ch. 446	Yes
Michigan	1978 Mich. Pub. Acts, No. 169	No
Minnesota	1979 Mich. Legis. Serv.(West) Chapter 226	No
Mississippi	S. 2030 (Miss.)(1979)(defeated); H.R. 419(Miss.)(1979)(defeated)	No (S. 2030); Yes (H.R. 419)
Missouri	S. 434 (Mo.)(1979); H.R. 541 (Mo.)(1979)	No
Montana	S. 168 (Mont.)(1979)	No
Nebraska	1979 Neb. Laws L.B. 301	
New Hampshire	1979 N.H. Laws, Chapter 231	No
New Mexico	S. 216 (N.M.)(1979)	Yes
New York	N.Y. Ins. Law sec. 336 (Supp. 1978-79)	No
North Carolina	N.C. Gen. Stat. sec. 69-31 (Supp. 1977)	No
Ohio	Ohio Rev. Code Ann. sec. 3737.16 (Supp. 1978)	No
Oklahoma	H. 1831 (Okla.)(1979)	Yes
Oregon	H.B. 2096 (Or.)(1979)	No
Rhode Island	R.I. Gen. Laws secs. 27-8.1-1 to -6 (Supp. 1978)	Yes
South Dakota	S.D. Codified Laws Ann. Ch. 34-32A(1979)	No
Tennessee	Tenn. Code Ann. sec. 53-2415(a-h) (Supp. 1979)	No
Texas	Tex. Ins. Code Ann. art. 5.46 (Supp. 1963-78)	No
Utah	H.B. 269 (Utah)(1979)	No
Virginia	H.B. 1343 (Va.)(1979)	Yes
Washington	Wash. Rev. Code Ch. 48.50 (1979)	Yes
West Virginia	W. Va. Code sec. 29-3-12a (Supp. 1978)	No
Wisconsin	1977 Wis. Laws ch. 342	No

correctional supervision, and release.[36] Investigative information refers to information regarding current suspected criminal activity, associations with criminal enterprises, financial information, ownership of property, and other personal information.[37] Ordinarily, the criminal history data are of less value to insurance companies conducting arson investigations than is the investigative information. This fact is crucial because, while strict limits are placed on disclosure of criminal history information, controls on dissemination of investigative information are less stringent. For instance:

- Federal law requires that all criminal history information collected, stored, or disseminated through federal support must be kept secure and private, and used only for law enforcement and criminal justice purposes.[38] Federal regulations only permit non-criminal justice agencies access to criminal histories pursuant to a statute that expressly refers to criminal conduct.[39] These regulations do not apply to investigative information.[40] They expressly permit a criminal justice agency to disclose to the public factual information concerning the status of an investigation which is reasonably contemporaneous with the event to which the information pertains.[41]

- In Massachusetts, the requirements for disclosing criminal history information are very specific—disclosure to non-criminal justice agencies may be made only pursuant to a statute expressly authorizing disclosure of criminal offender record information (CORI).[42] Investigative reports and files are specifically excluded from CORI.[43] The Fair Information Practices Act[44] directs every agency holding personal data not to allow any other agency or individual access without statutory or regulatory authority.

- In Connecticut, the Freedom of Information Act[45] provides a specific exemption from disclosure records of law enforcement agencies compiled in connection with the detection and investigation of crime if such disclosure would be prejudicial to a prospective law enforcement action. Criminal history information is protected by Connecticut's Personal Data Statute,[46] which prohibits disclosure without the consent of the data subject except as authorized by statute.

The overall effect of the privacy laws on the operation of the arson reporting statutes (for those states that adopt the reciprocity provision) will depend upon the interpretations of these statutes with respect to the type of information that may be transmitted by government agencies to insurance companies. The language of the model Arson Reporting Immunity Bill, specifying the type of relevant information (defined as matter pertinent to the

investigation of the loss), strongly supports the position that only the transfer of investigative information is contemplated. If this interpretation is followed, the Arson Reporting Immunity Bill probably provides sufficient authority for disclosure. However, each jurisdiction's privacy laws should be carefully analyzed to ensure that the arson statute, in fact, provides such authority. If the reporting statute is interpreted to permit disclosure of criminal history information, clarifying amendments to the model bill must be introduced to ensure compatibility with federal and state privacy laws.

6.3 Anti-Arson Jurisdictional Authority

In some states, laws place unnecessary restrictions on the activities of law enforcement officials who could profitably be involved in arson work or confuse the roles of police and fire officials in investigating and prosecuting arson. In Connecticut, for example, only a fire marshal may testify as to the cause of a fire; a police officer is precluded from testifying on this issue. The jurisdictional issue extends to the civil as well as the criminal aspect of arson--traditionally, State Fire Marshals have not been allowed to testify in fire insurance cases.[46]

Progressive legislation does exist in some states addressing these problems. California designates the State Fire Marshal, his deputies, and arson investigators as peace officers with respect to the detection and apprehension of any person suspected of having violated any fire law.[47] Similarly, Oklahoma confers peace officer status on the State Fire Marshal or his deputies for the purpose of investigating arson.[48] Illinois authorizes fire inspectors and the State Fire Marshal to compel the attendance of witnesses before them to take their testimony relating to the investigation of fires.[49]

Programmatic support has also been provided through legislation. In Oklahoma, an Arson Division was created within the office of the State Fire Marshal.[50] In California, a bill was introduced which would have established a Blue Ribbon Committee on Arson.[51] The bill directed the Committee to make reports concerning:

- the arson problem in California;
- the responsibilities of various individuals engaged in arson detection, investigation, and prosecution;
- manpower and training requirements for arson detection and investigation;

- arson education programs for judges, District Attorneys, and arson investigators to promote better understanding among these groups;

- the data necessary to provide adequate information for arson investigations;

- a public information program on arson; and

- the state's role in arson prevention and control.

In many ways, these provisions mirror the amendment to the Federal Fire Prevention and Control Act of 1974, establishing federal anti-arson programs (see Section 1.2 above).

6.4 Summary

Many existing laws unintentionally provide economic incentives for arson or impair effective arson investigation and prosecution. Several legislative countermeasures to arson-for-profit have been referenced in this chapter:

(1) For the most part, property owners or renters burning their own buildings do not think of themselves as criminals. They consider themselves merely to be shrewd businessmen taking advantage of a loop-hole. Well publicised criminal penalties, commensurate with the severity of the crime, may act as a deterrent when these individuals begin to view arson as a serious criminal act.

(2) Laws limiting the amount of insurance proceeds to the actual fair market value of the property may also provide disincentives to arson-for-profit motives.

(3) Laws permitting insurance companies to delay payment of a claim when arson is suspected can provide sufficient time for thorough investigations.

(4) Laws facilitating the disclosure of the identity of true property owners to insurance companies and law enforcement agencies conducting arson investigations would prevent the concealment of those who actually benefitted from the crime, and thus discourage owner-initiated arson.

(5) Some FAIR Plan practices may not afford insurance companies sufficient latitude to deny or cancel policies on certain buildings representing high arson

risks. Laws modifying these practices can prevent their abuse for arson-for-profit.

(6) Laws permitting the establishment of escrow accounts for rent payments when a building fails to meet certain minimum standards can deter arsonists and ensure the money's use on repairs and improvements.

(7) Laws giving first claim on insurance proceeds to the city for the purpose of collecting back taxes and receiving payment for other city services may act as a disincentive to arson by a property owner and provide revenue for municipal government.

(8) Laws encouraging the exchange of information between law enforcement authorities and insurance investigators can enhance the investigation process. Each jurisdiction should define the actual legal limits of information sharing under existing law. It may be found that these limits are not as strict as is popularly perceived in view of the availability of immunity statutes.

(9) Laws which clarify the responsibilities of fire and police officials involved in arson investigation and prevention, and remove unnecessary jurisdictional restrictions on their activities can facilitate arson control efforts.

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CHAPTER 7: ARSON DATA SYSTEMS

Each preceding chapter of this report has emphasized the importance of a data system to the development of an effective arson reduction program. This chapter reviews the characteristics and uses of three types of systems:

National Reporting Systems. The federal reporting programs described in Section 7.1--specifically, the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS) and the FBI's Uniform Crime Reporting System--are intended to provide policymakers at all levels of government with standardized information on the scope of the nation's fire problem. To provide a sound base of information for planning and program development decisions, state and local participation in these systems is essential. Also described in this section is the NFPA's Uniform Fire Incident Reporting System (UFIRS), an expanded version of the NFIRS, designed as a more comprehensive local management tool. Finally, the Property Insurance Loss Register (PILR) is a data bank operated by the American Insurance Association that contains claims reports from subscribing insurance agencies. This system provides a source of potentially important information for arson investigators as well as insurance adjusters.

Local Investigative Information Systems. While national reporting systems address the need for standardized fire incident reporting, there are many urgent local needs for detailed information on those incidents classified as arson or incendiary fires. As the USFA's Report to the Congress has noted,

> . . . The vast majority of fire service agencies across the nation are not collecting the necessary data required to conduct effective investigations . . . Vital information identifying the various actors involved and their roles in the incident often is not collected. While the building owner and occupant may be identified, other key actors are not identified. Data on suspected and known motives of the firesetter as well as the modus operandi are also not routinely collected.[1]

Section 7.2 reviews the purposes of an investigative information system, outlines key data elements, and suggests methods of data processing and analysis. The type of system suggested for use as a diagnostic and investigative tool begins with the NFIRS Incident Report and includes supplementary data on the financial status of the property and the characteristics of the owner, insurance beneficiary and suspect(s). Obtaining these supplementary data will often require access to sources of information outside the fire service. Yet without links to other municipal records and insurance files, the system cannot properly address the needs of the investigation process.

Early Warning Systems. An investigative information system, by revealing patterns in the location, incidence, and motives of arson fires, can assist in targeting remedial or preventive actions. Early warning systems go one step further by identifying the events which typically precede an arson problem, thus locating potential targets of future arson fires--particularly those based on profit motives. Both systems use the same basic information on the characteristics of properties and their owners. However, the early warning system does not wait for the fire to occur before beginning the data collection process. Section 7.3 describes several such efforts to identify predictable arson fires.

7.1 National Reporting Systems

To provide background for the discussion of investigative information systems, several national reporting systems are described briefly below. At present, there are three national efforts: the National Fire Data Center's National Fire Incident Reporting System (NFIRS); the FBI's Uniform Crime Reporting System; and the American Insurance Association's Property Insurance Loss Register. In addition, the National Fire Protection Association (NFPA) supports a locally-based Uniform Fire Incident Reporting System (UFIRS) which is used in 39 different communities. A complete assessment of the data needs and capabilities of these systems is an important step in designing a local investigative information system for a number of reasons:

- To avoid unnecessary duplication of effort, the data collected for local management and investigation purposes should be consistent with national efforts to obtain fire data. The National Fire Incident Reporting System (NFIRS) offers a means of standardizing fire incident reporting and should be used as a basis for arson incident reporting as well.

- Participation in national reporting programs will serve the interests of states and localities by permitting different jurisdictions to exchange and compare fire data and response capabilities. Moreover, with complete data at their disposal, both NFIRS (which records all

fire incidents) and the FBI's UCR system (which records major arson incidents) can serve to focus public and professional attention on the needs and resource constraints of agencies involved in arson prevention and control.

7.1.1 National Fire Incident Reporting System (NFIRS)

In 1963, the National Fire Protection Association formed a committee to devise a uniform and useful system of fire reporting adaptable to the needs of the fire service in the United States and Canada. For the next six years the committee developed a uniform language for fire defense management and issued tentative standards as the committee work progressed. In 1969, this standard language became known as NFPA No. 901-Uniform Coding for Fire Protection. The standard was periodically updated, with the latest edition being that of 1976. The NFPA No. 901 Code was chosen by the U.S. Fire Administration as the basis for a national fire information system using a common set of definitions to collect information about alarm responses. This system enables the information that has been reported on fire incidents and casualties to be compared from year to year, community by community, state by state, and many other variations. The system is officially known as the National Fire Incident Reporting System (NFIRS) and was organized by the National Fire Prevention and Control Administration (now the U.S. Fire Administration) with the assistance of many dedicated fire service personnel at local and state levels. Local fire service personnel who collect and use the data in NFIRS are looked to for suggestions for the improvement of the system over time.

The basic flow of information in the system is as follows: local fire departments collect data in a common format and send the data to their state. The state processes the data from all its localities and sends feedback reports to them. Quarterly the state sends a tape to the NFPA's National Fire Data Center which uses the data for national estimates and many special studies of the fire problem. By late 1979, the National Fire Data Center reported that 30 states were participating in the NFIRS Program.

7.1.2 Federal Bureau of Investigation Uniform Crime Reports (UCR) System

With the recent inclusion of arson as a Part I crime within the UCR system, arson will become a visible part of local and national crime statistics reported by police departments. Because the FBI receives information from jurisdictions representing well over 90 percent of the total U.S. population, it will be possible to assess the extent, fluctuation, and distribution of arson fires to the degree they are known to law enforcement and fire service

agencies. As the USFA's Report to the Congress has noted, however, the UCR statistics are important, but by no means sufficient to describe all aspects of the nation's incendiary fire problem. Arson fires classified as "suspicious" fires, fires of unknown cause or fires related to vandalism or children's malicious mischief will not be reported within the FBI classification system. Thus, while a commitment to accurate UCR reporting is important, more comprehensive systems are required to satisfy state and local needs.

7.1.3 Property Insurance Loss Register (PILR)

The PILR is an effort by the American Insurance Association (a trade association representing insurance companies writing roughly 90 percent of the nation's fire insurance) to gather nationwide data on insurance payments for fire losses. By recording and centralizing information about persons who have received insurance compensation, it is anticipated that the PILR will both assist arson-for-profit investigations and serve as a deterrent to those contemplating arson. The PILR is intended to be an all-industry non-profit subscription service which will inform its subscribers of other fires which bear similarities to recent claims reported by adjusters following their initial inspections. While this is a voluntary effort by the insurance industry, police and fire service agencies can obviously benefit from the information provided by subscribing insurance companies. (The legal issues involved in such an exchange of information are discussed in Section 6.2.7). The information contained in PILR will include.

- names of insured, spouse, alias, and tenants;
- names of owners, partners, corporate officers, mortgagees, etc.;
- type of occupancy, fire cause (if known), and time and date of loss; and
- insurers and amounts of coverage.

7.1.4 National Fire Protection Association (NFPA) Uniform Fire Incident Reporting System (UFIRS)

As mentioned above, the NFPA has developed over a number of years a uniform and standard set of definitions and forms which have resulted in the NFPA Number 901-Uniform Coding for Fire Protection. This code serves as the basis for the NFPA's Uniform Fire Incident Reporting System (UFIRS). While the UFIRS and NFIRS systems use the same basic forms and definitions, there are differences in emphasis. The NFPA system was developed as a local management tool and is more comprehensive in the data collected. The USFA

system (using the NFPA standard) is a state and national management tool that does not use all the data collected by the UFIRS. However, these differences do not make the systems incompatible. Some communities are currently involved in using both UFIRS and NFIRS.

The UFIRS is presently used by 39 communities within the United States. As part of the system purchased from the NFPA when joining the UFIRS, 19 pre-written computer programs for analyzing the data on the local level are provided. In addition, eight volumes of documentation are provided which discuss the organization needed to support the system, training procedures and requirements, coding procedures, and use of the data.

7.2 Local Investigative Information Systems

The national arson data systems examined above provide useful information on national trends and the nature and extent of the arson problem in the United States. While these systems may also contain data which are of interest to local communities, it is rare that communities' information needs will be fulfilled simply through participation in these national systems. Local data systems which permit the analysis of information on arson causes, methods, locations, suspects, property owners, and incidence are also needed. While many jurisdictions routinely collect such information during the course of an investigation, it is rarely incorporated in any useful system. For example, in the survey conducted in conjunction with this report, it was found that only 24 percent of the responding jurisdictions used available data for other than archival purposes.[2]

The next several sections focus on investigative information systems which can enable communities to make use of available data as well as guide the collection and use of additional data elements. As noted below, these systems may be either manual or computerized, depending on the needs and resources of the community. After a brief review of the purposes and applications of these systems, such specific issues as system requirements and data elements are examined. This is followed by a discussion of the organization and processing of data for the local arson data system.

7.2.1 Purposes and Applications

Local arson data systems serve a number of complementary purposes. First, they may assist in the actual investigative process by providing quick access to M.O. information, indications of likely suspects, or historical evidence that may support investigators' conclusions that a suspicious fire is actually arson. Second, these data systems provide useful information on

local arson patterns which may be used for planning purposes. Finally, an investigative system may assist in arson unit administration and evaluation. Specific applications of the system include the following:

- identifying the nature of the local arson problem (e.g., motivation for arson, method used to start fires);
- identifying high arson risk areas or types of structures;
- identifying individuals repeatedly involved in fires (e.g., owner, tenant, bystander);
- investigating fires;
- allocating fire resources to high risk areas (e.g., arson patrol, staffing levels and equipment for line companies);
- determining property loss, injury, and fire suppression/ prevention costs;
- projecting future needs;
- documenting budget needs; and
- evaluating operations and programs.

One of the most important functions of the local investigative information system is its role in the planning process. A comprehensive system containing data on arson incidence and characteristics can permit the identification of specific types or patterns of arson prevalent within a community, thereby allowing decision-makers (e.g., arson unit commander, Fire Chiefs, elected officials) to begin a rational, systematic approach to arson control planning. As the arson taxonomy presented in Chapter 1 demonstrates, arson is an extremely complex crime, encompassing a wide variety of motives, targets, perpetrators, and methods. Thus, a careful planning process is essential to ensure that arson control efforts match the arson problem in the jurisdiction. For example, if most arson fires in a given jurisdiction are widely dispersed and seldom involve abandoned property, there may be no need to incur the expense of deploying arson patrols. Similarly, if most are acts of juvenile vandalism, public education programs must recognize and address this target audience and not necessarily the public-at-large.

In summary form, the overall arson planning process would involve the following phases of activities:

(1) identifying the nature and magnitude of arson fires;

(2) determining the likely effect if no intervention is planned;

(3) considering alternative arson response strategies;

(4) selecting, implementing, or modifying the arson reduction approach(es) most appropriate to the arson problem;

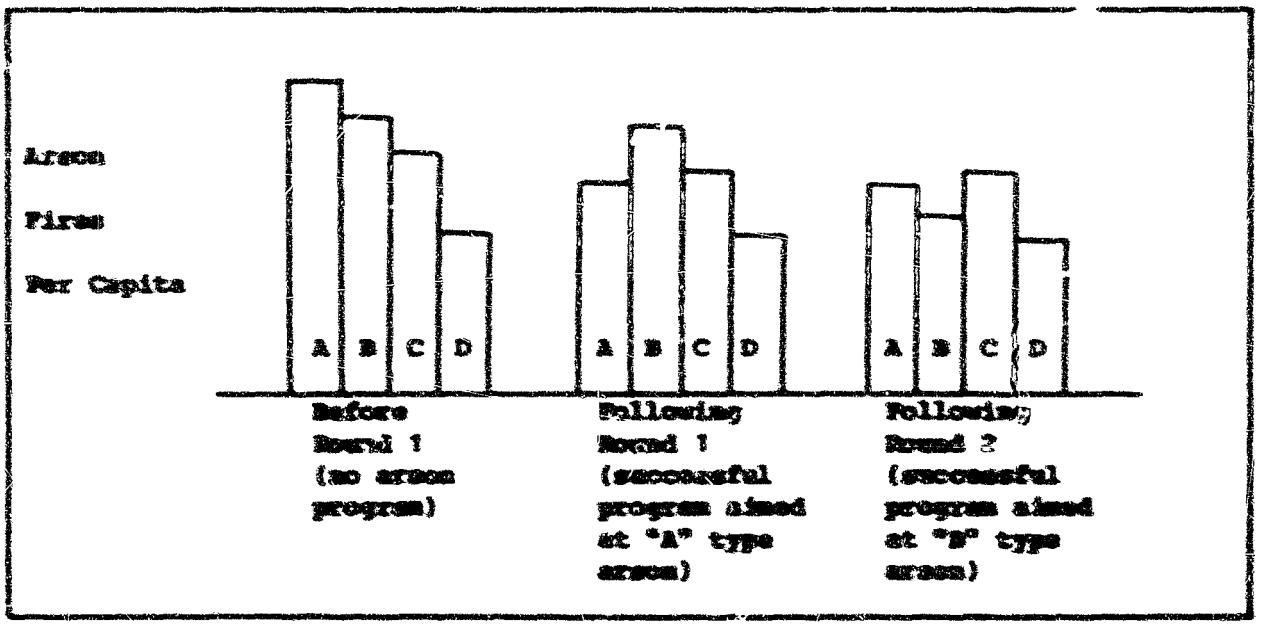
(5) monitoring and evaluating the success of the arson reduction strategy; and

(6) repeating the process by beginning with a reassessment of the arson problem.

The investigative information system is an essential tool for conducting Steps 1, 2, 5, and 6 of this process.

With the selection of successful arson reduction programs, the repetition of this planning process can be expected to result both in a reduction of overall arson fires and a change in the pattern of arson. With each successful round of diagnostic analysis, planning, and program implementation, the most frequent pattern of arson should be reduced to a level that makes some other type of arson most typical, requiring new decisions and strategies. As Figure 7.1 illustrates, this results in a dynamic process through which the target of arson reduction changes over time, but the overall amount of arson decreases.

Figure 7.1
Result of Arson Reduction Efforts over Time



It is, of course, possible to reduce arson without engaging in this planning approach. Since all jurisdictions probably have some arson fires of each possible type, any well-conceived and implemented approach will probably reduce arson. However, it may mean that instead of reducing by 50 percent a type of arson that accounts for the bulk of dollar loss and injury, efforts might be allocated to reduce by 50 percent another type of arson which is responsible for only minimal losses.

7.2.2 Basic System Requirements

Regardless of the specific system adopted by a particular jurisdiction, it is important to emphasize that a data system is more than the data forms, arson fire reports, or equipment used to process data. A data system must also include a consistent screening procedure for deciding what events to include as well as uniform definitions of measures, consistent training and coding procedures for those translating case information into coded data, and quality control or accuracy checking procedures. To illustrate the operation of such a system, we will follow a typical case through a system and identify the system requirements. An overview of the process involves the following steps:

(1) occurrence of a fire reported to the fire department;

(2) determination of origin and cause (where and why) by responding units;

(3) continuing investigation;

(4) coding of data required for the system (translating fire reports and other data into numerical codes);

(5) entry of coded data into processing equipment;

(6) review of preceding three steps for accuracy;

(7) production of individual measures of arson and non-arson fires;

(8) analysis, interpretation, and preparation of reports dealing with multiple fires; and

(9) use by decision-makers (e.g., arson unit commanders, Fire Chiefs, and elected officials).

Steps 2 and 3 are concerned with the gathering of information to be used in an arson data system, while steps 4 through 7 are the activities involved in the operation of the system itself. For such a system to be as useful as possible, the production of measures (step 7) must be both valid and reliable.

Validity

A valid measure is one that is accurate. To obtain a valid measure of the incidence of arson, those involved in arson detection must be carefully trained in procedures which will allow them to correctly differentiate between arson and non-arson fires. Such training must include clear guidelines for circumstances under which fires should be investigated for arson, as well as specification of the necessary and sufficient conditions or factors that must be present to declare a fire arson.

Once arson and non-arson fires have been accurately identified by those charged with detection, other individuals are responsible for coding the information and entering it into the data system. The accuracy of these procedures is critical as well, and detailed training and coding procedures must be provided to all personnel involved.

Once training procedures have been developed and implemented, quality control should be established to verify the accuracy of arson/non-arson determination, and data coding and entry into the data system.

Reliability

A reliable measure is one that is consistent regardless of who takes the measure and when and where the measure is made. If measures are reliable, we are assured that events are always being classified for analysis in the same way. Unreliable measures have been likened to trying to obtain a person's height with a rubber yardstick which keeps expanding and contracting.

To obtain reliable measures, clear, consistent definitions of terms are obviously essential. For example, varying definitions of arson pose a serious problem. Because different departments may use the terms "arson fires," "incendiary fires" or "suspicious fires" interchangeably, it is often difficult to compare or aggregate data across or even within jurisdictions. While each measure may be valid according to the criteria employed by a particular individual or department, they can become meaningless when considered together since each is representing something slightly different. As the USFA's Report to the Congress has noted:

> By definition, incendiary fires represent the broad category of fires set intentionally and arson fires are a subcategory of incendiary fires defined as those fires intentionally, willfully and maliciously set.[4]

While standard definitions have yet to be fully developed for national arson reporting purposes, the importance of clear definitions and consistent application of terms at the local and state levels cannot be overemphasized.

7.2.3 Sample Data Elements

The actual information and amount of detail to be included within an arson data system is potentially immense. For example, the Urban Educational System's study of arson indicators (described in Section 7.3) has identified no less than 85 variables representing 15 variable clusters or types of data which might conceivably be utilized. However, there are several general criteria that can be used in deciding what should or should not be included within a system. These are:

- the relevance or practical utility of the data to the management and evaluation needs of the agencies involved in arson prevention and control;
- the availability and quantity of those data;
- the reliability of the measures and data sources; and
- the cost of obtaining and including the information.

The basic components of a sample investigative information system are described below. While by no means a complete system, it illustrates the general nature of the data elements that should be considered in developing a comprehensive data system.

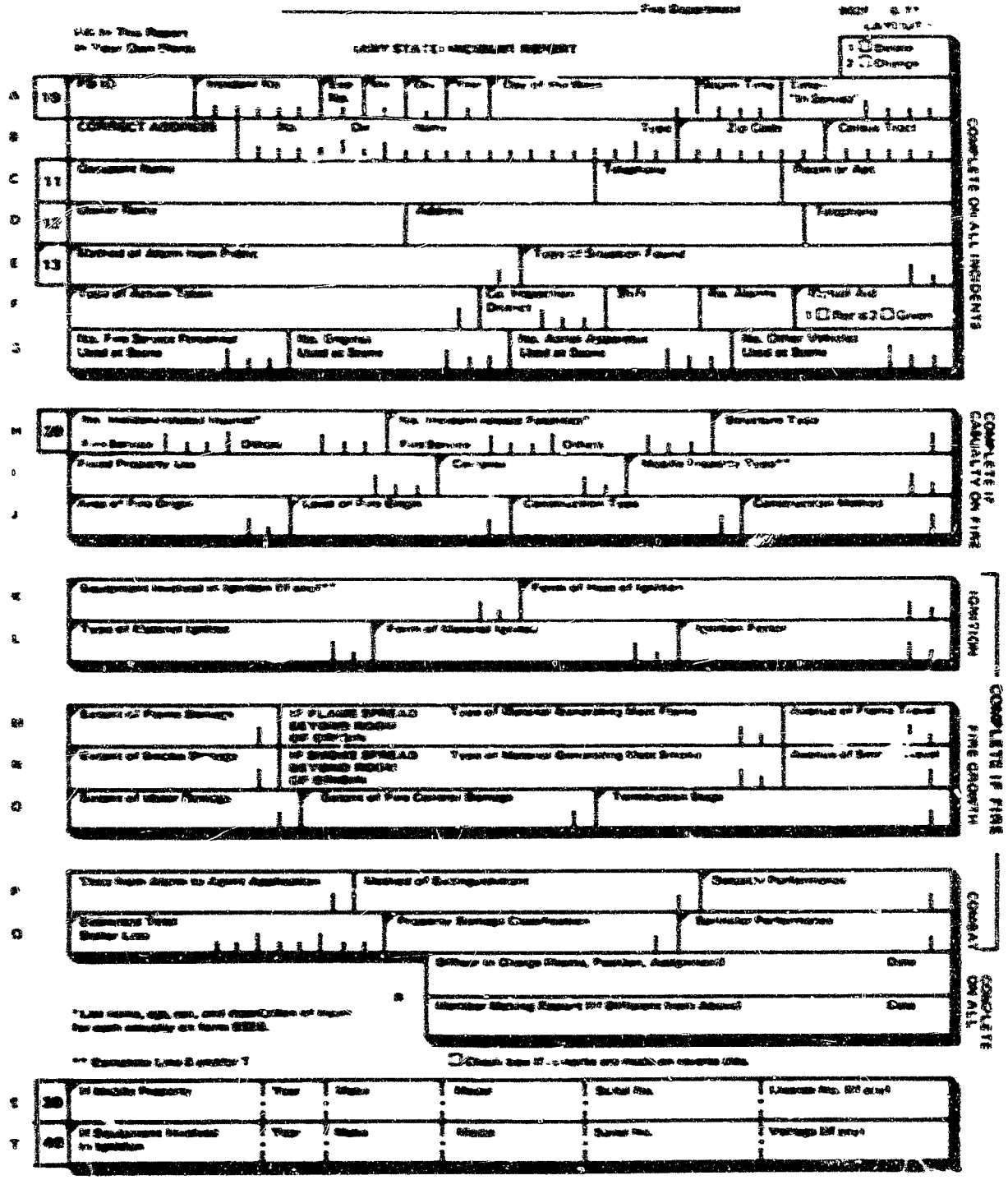
Basic Incident and Cause Data

At a minimum, a fire data system should include the NFIRS 902F Incident Report form (Figure 7.2). Use of this form will avoid redundancy in local and national data collection efforts and will facilitate participation in the national system (described in Section 7.1). Instructions for preparing the Basic Incident Report are contained in the NFPA's Fire Reporting Field Incident Manual 1976.[5] Coding conventions are defined in a companion manual entitled Uniform Coding for Fire Prevention.[7]

For our purposes, the most important elements of the NFIRS 902F Form are those providing incident data (when and where the fire occurred) and cause data (where the fire started). These are key data elements to be collected

Figure 7.2

Sample 902F Incident Report Form



for all fires and provide the foundation for the development of supplementary files on incendiary fires.

Supplementary Data on Incendiary Fires

To assist in the investigation of those fires deemed incendiary or suspicious, at least two additional classes of data are needed:

- property data (information on property finances, code violations, and insurance coverage); and
- individual data (information on the owner, insurance beneficiary and suspect(s)).

Suggested formats for collecting property and individual data are presented in the sections that follow. It should be emphasized that these are intended only as illustrations of the types of information that might be included. Thus, while a basic format is shown, we also suggest other data elements that should be considered in the system design phase.

Property Financial Record. A sample property financial record is provided in Figure 7.3. Most of the data to be collected for this form comes from insurance company records (which may be available through the Property Insurance Loss Register), with the remainder coming from the files of the mortgage holder, Assessor's Office and Tax Office. Related information that might be contained on this form would include: the names of the investigator and the adjuster; the amount of the claim; the amount of the payment received; and the identity of any lienholders.

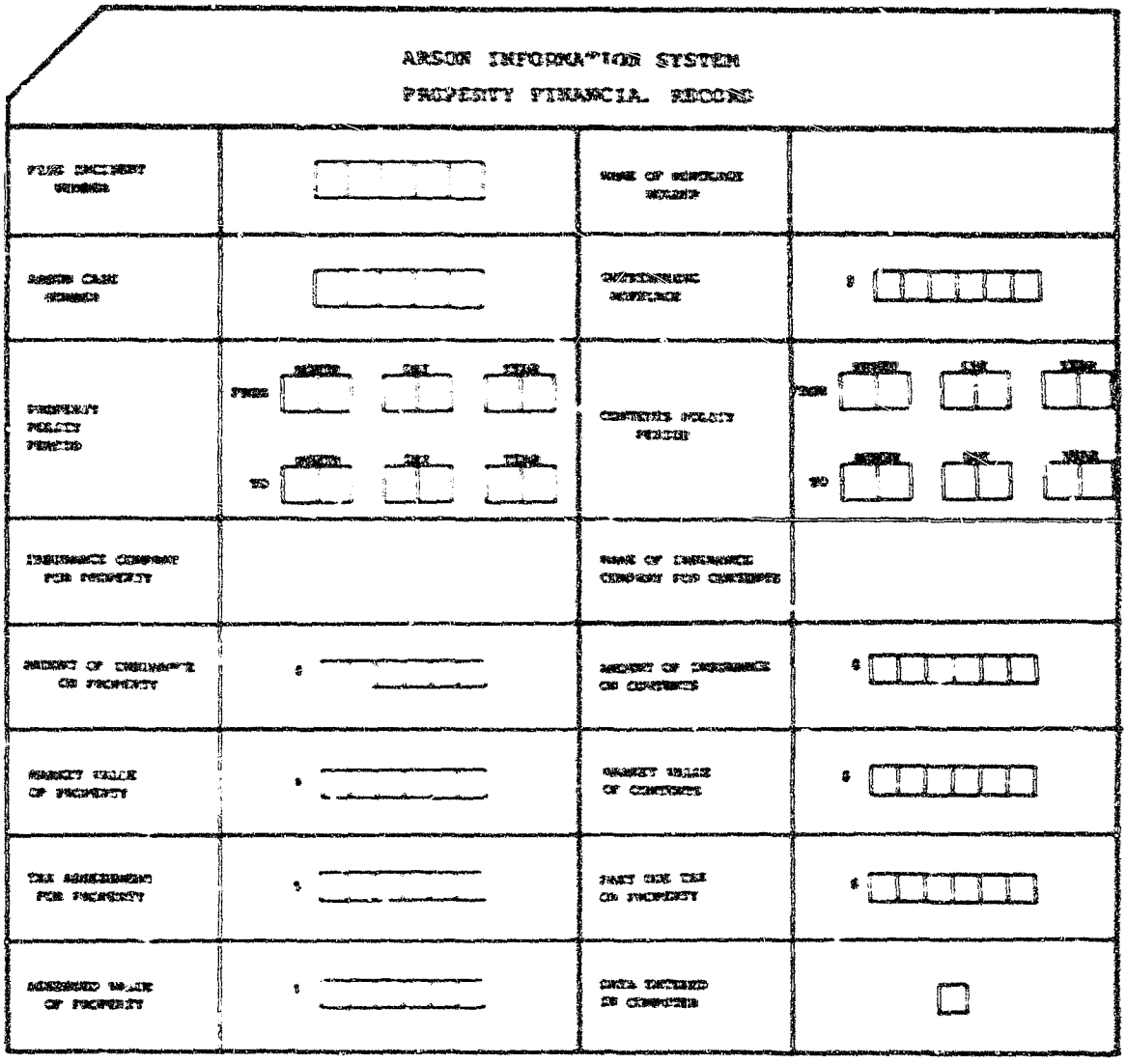
Individual Records. There are two types of individuals on whom the system should collect data: the owner of the structure and the insurance beneficiary, if different from the owner. The owner record presented in Figure 7.4 provides this information, drawing from financial institutions, insurance companies, and the Registry of Deeds. The second type of individual record is the Suspect Record presented in Figure 7.5, which provides data on individuals who are suspected, charged or convicted of arson.

Basic Design and Data Collection Considerations

While three supplemental forms are presented here, in actual practice the number of forms and scope of each should conform to the needs of the investigation process. If, for example, analysis of the Basic Incident Report forms indicates the possibility of an arson-for-profit, motive, the

Figure 7.3

Sample Property Financial Record

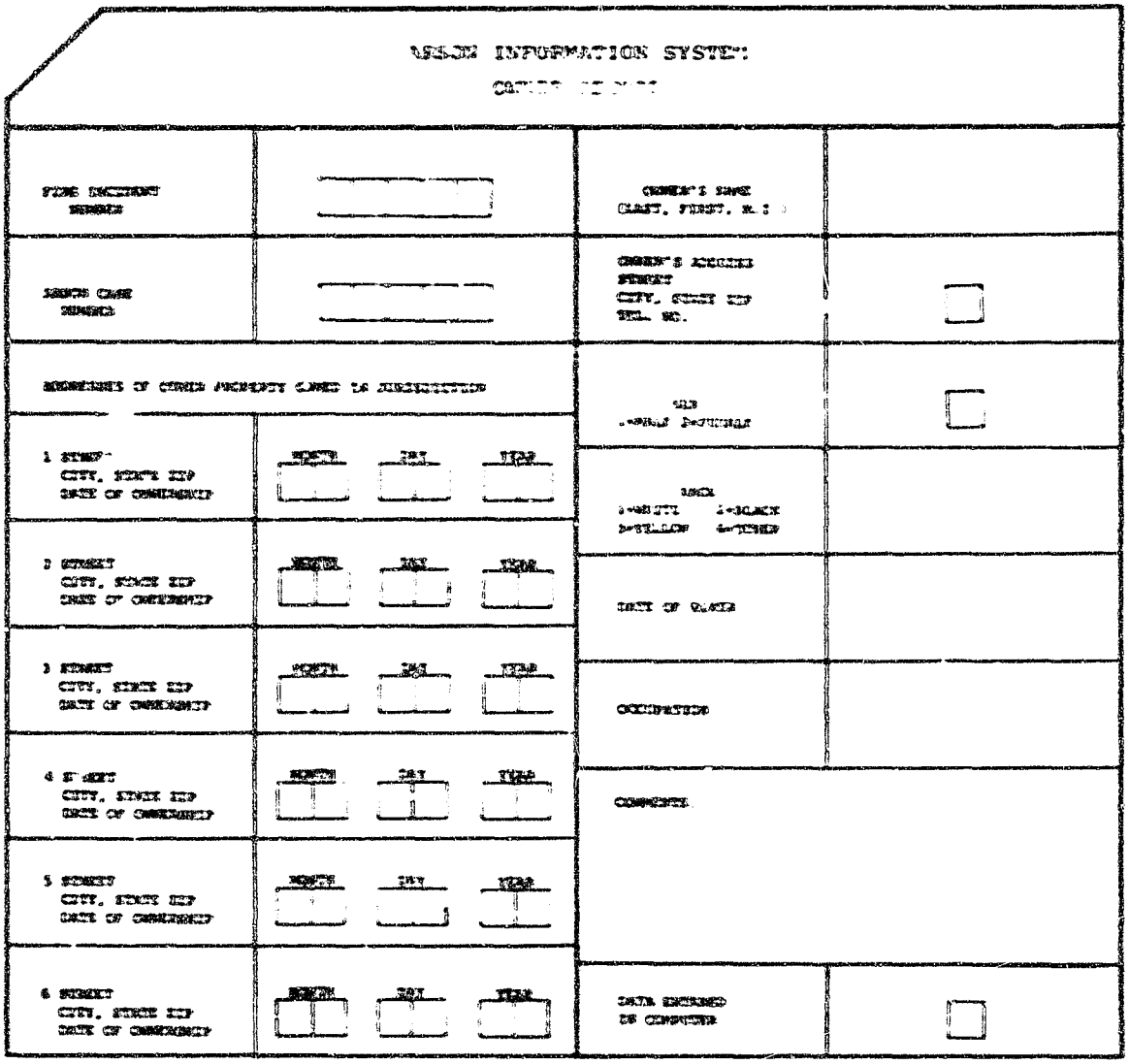


Related items that might be specified on this form include:

- amount of claim/amount of payment received;
- names of the insurance agent and insurance adjuster(s);
- identity of any leinholders; and
- code violations.

Figure 7.4

Sample Owner Record

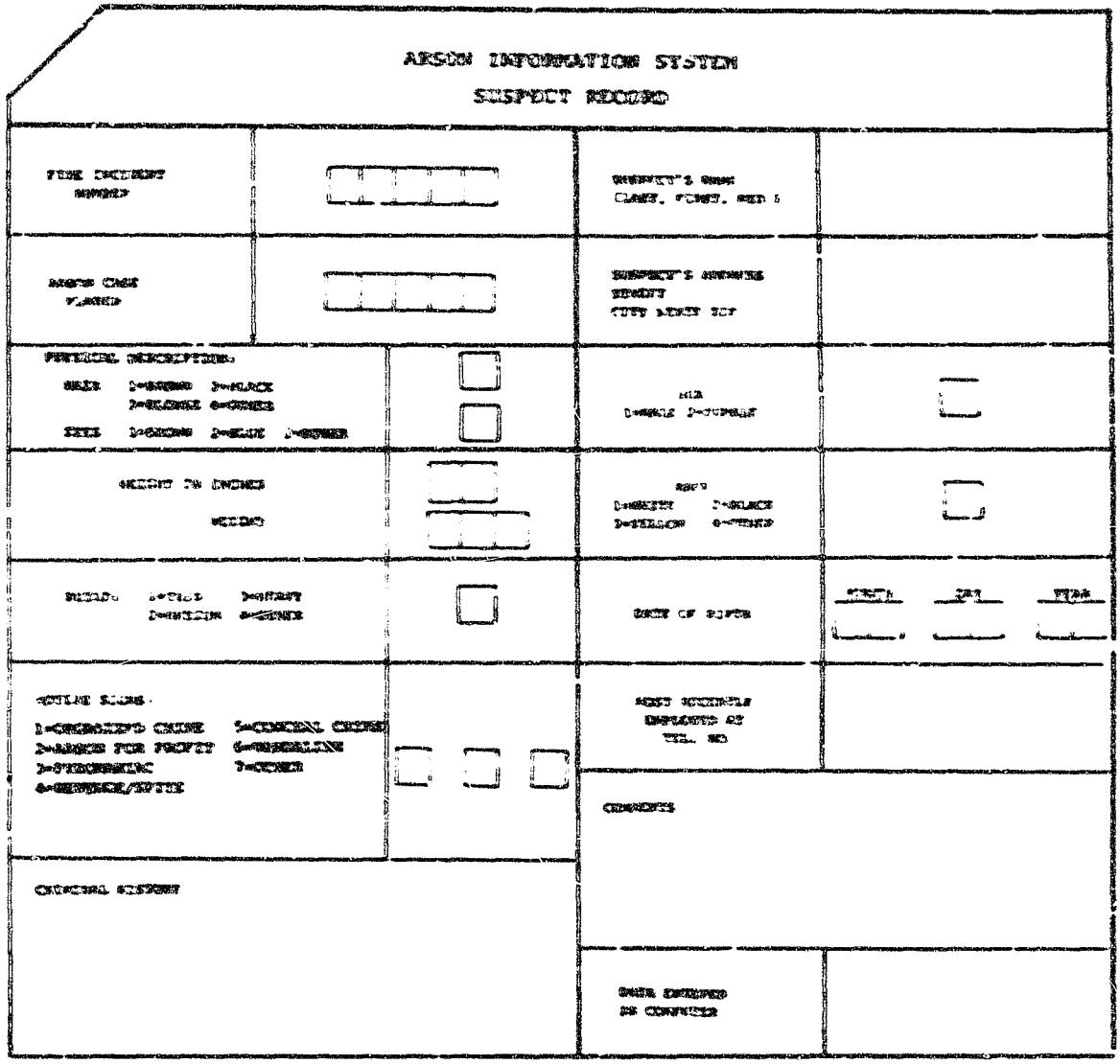


Related items that might be specified on this form include:

- the owner's previous fire history.

Figure 7.5

Sample Suspect Record



Related items that might be specified include:

- the M.O. of the perpetrator;
- dates of arrest or questioning if arrested; and
- disposition and sentence.

Property Financial Record and Owner Record or similar forms might be used to gather investigative information. On the other hand, if a non-profit motive were indicated, different investigative information needs would prevail. These might call for the collection of more data on the occupants of the structure (for revenge motives), the characteristics of the neighborhood (for vandalism motives), or the nature of the fire scene itself (for crime concealment motives).

If responsibilities for the continuing investigation differ by type of arson, this will also affect the course of the investigation and should be considered in determining the type of information to be collected and the timing of its collection. Obviously, if the same individuals within the fire service are continuously responsible for all aspects of all investigations, data collection forms and procedures may differ from those that might be needed if the continuing investigation is transferred to or shared with other agencies. In short, the system's designers must be thoroughly familiar with the investigation processes for different types of arson, as well as the participants in that process, in order to develop a useful, applicable set of data collection forms.

Since the collection of these data will often require access to records outside the fire service, several additional data collection requirements should also be considered:

(1) Formal cooperative links must be established with the agencies where the required records are maintained. As it is determined that particular data elements are necessary, consistently available, and generally reliable, a routine system for accessing the necessary information should be developed and confirmed in writing with the cooperating agencies.

(2) The individuals charged with the data collection task must have the credibility and authority to work with participating agencies. This may require special training for the personnel assigned to maintain the system, or the use of specialized personnel to assist in the data collection task on an on-going or consulting basis. For instance, a real estate attorney may be the best resource for questions that require extensive property research.

(3) Each data collection form should be tailored to suit the agency from which the data will be gathered. During the system planning phase, the records of participating agencies should be carefully examined to ensure that the nature and format of any desired items are consistent

with the record-keeping procedures of the agencies that will be asked to furnish the information.

(4) Since a variety of personnel may be responsible for different aspects of the data collection function, the system should incorporate a reference to the individuals who have completed the forms, in order to permit later verification or clarification.

Although the basic data collection system is independent of the methods to be used in processing the data, all forms should be machine readable—providing field designations and numerical codes for all items. Assuming that computer processing will be employed, the final entry on all forms should indicate whether or not the information has been entered into the computer files. Where other processing methods are contemplated, this entry can be revised or deleted as appropriate. Finally, in order to relate the Basic Incident Report form to all supplementary data forms, it would be advisable to add to the NFIRS 902F a designation indicating that the fire covered by that report was classified as an arson or other suspicious/incendiary fire.

7.2.4 Organization and Processing of Data

As data collection forms are completed, they must be processed. Alternative processing techniques can range from totally manual to sophisticated computer methods.

In general, the decision to use a computer versus a manual system depends on several main factors: amount of information per report; the number of reports per year; and the relative cost and accuracy of the two approaches. As a rule of thumb, the NFPA suggests that if more than 3,000 incidents are to be summarized, computer use may be appropriate.[9] However, the decision to establish a computer system should include consideration of the following costs:

- coding of data;
- keypunching or direct key entry plus verification;
- machine editing of key stroked data;
- corrections of errors discovered in editing;
- data base construction or file construction;

- computer equipment requirements;
  - -- capacity of equipment (speed, memory size)
  - -- storage requirements (disk, tape storage)
- other equipment or supplies;
  - -- terminal rental or purchase
  - -- tape purchase
  - -- special paper, labels, continuous forms
- software or computer programs.
  - -- proprietary software (rental or purchase)
  - -- software conversion

In addition to these direct cost factors, there are a number of administrative issues that need to be resolved. The creation of an automated data system is equivalent to the creation of any new unit within an organization. Questions of placement and position within the command structure must be considered. Should such a unit be within a fire department or is it more appropriate to be part of a larger municipal or county government data processing system? Yet another alternative might be to use private, commercial data processing facilities. It might be argued that data processing is really not a fire service function or an area of fire service expertise and therefore should be centralized within existing systems to achieve maximum efficiency of operations. Conversely, placing such a unit outside the fire department's organizational control may result in less responsive service and a subsequent lowered priority of arson data analysis.

If the decision is made to place the system within the department, the next issue is the placement within the existing organization. Should it become a separate staff support unit, an adjunct to the arson unit, part of the Fire Chief's staff, or a portion of the existing (if any) data processing unit?

A definitive answer to these questions is not possible. Rather, it depends on the local situation and existing organizations and policies. For example, the Seattle fire department's data processing is performed by a centralized municipal organization as a result of a city policy intended to minimize total city-wide computer costs. The Los Angeles fire department's arson data is processed on the Los Angeles police department's system so that other criminal-related information is accessible.

In performing the arson data processing, the number of people that are needed depends upon the extent of centralization of data coding, the method of data entry, and type of programming. In a centralized data coding system, all case reports are written in English and forwarded to data processing unit where they are numerically coded. In a decentralized system, the person

completing the report (such as the officer in charge at the fire) prepares report using the data codes. (The latter system is that used by Seattle.) The second factor influencing personnel requirements is the method of data entry (keypunch, on-line entering, and mark-sense/optical scan being progressively more efficient). The third influencing factor is whether "canned" programs will be used or whether programs have to be written by the department to analyse the data. A medium-sized department with an arson data system may require as little as one full-time person if data are coded in a decentralised fashion using prewritten computer programs. However, the same department might require as many as three or four data coders and keypunch operators and a computer programmer if centralised data coding is used in conjunction with computer card entry and custom programming.

Regardless of which alternative is selected, there are two basic requirements that must be satisfied. Since manual processing is the simplest alternative, it is convenient to discuss these requirements in terms of a manual system.

First of all, the data file should be organised by geographical location, e.g., census tracts, and by individual structures within each location code. All forms pertaining to a specific census tract or structure should be filed together to provide a comprehensive picture of the arson problem in that area or structure.

Second, there should be a Master Name File containing the names of all owners, insurance beneficiaries other than owners, and arson suspects on whom the system has data. This file should be cross-referenced with the main data file, giving all the location codes and addresses with which each name is associated.

If the data are entered into a computerised system, the possibilities for diagnostic use are considerably expanded. While in the past computer analysis has been extremely expensive, this has been primarily due to the necessity to pay for "custom" written computer programs and their "de-bugging." Currently, most computer centers (academic, commercial, and local government) maintain generalised "canned" statistical and/or data management programs that make the use of computer analysis relatively inexpensive. These programs (e.g., SPSS, BMD, SAS, System 2000, SIR, etc.) can produce a variety of outputs for determining the nature of local arson problems (see Figure 7.6, 7.7, and 7.8). In Figure 7.6, examination of arson motivation with number injured (or killed, or both combined) would indicate which type of arson fires pose the greatest threat to life. The result of this analysis may or may not agree with an analysis based simply on which type of arson is most frequent, or most costly. Figure 7.7 shows an examination of arson motivation with neighborhood as represented by census tract. This analysis would provide an indication of which areas are most likely to be the target of different types of arson. In the final example, Figure 7.8, the motivation for arson is examined once again, in this case for type of arson target.

Figure 7.6

Crosstabulation of Number Injured with
Type of Arson Motivation

Number Injured	Motivation for Arson						
	Organized Crime	Arson-for-Profit	Pyromaniac	Revenge/ Spite	Conceal Crime	Vandalism	Total
1							
2							
3							
4							
5							
Total							

Figure 7.7

Crosstabulation of Neighborhood with
Type of Arson Motivation

Neighborhood (by Census)	Motivation for Arson						
	Organized Crime	Arson-for-Profit	Pyromaniac	Revenge/ Spite	Conceal Crime	Vandalism	Total
1							
2							
3							
4							
5							
6							
Total							

Figure 7.8

Crosstabulation of Type of Arson Target
with Type of Arson Motivation

Type of Arson Target	Motivation for Arson						
	Organized Crime	Arson-for-Profit	Pyromaniac	Revenge/ Spite	Conceal Crime	Vandalism	Total
Public Assembly							
Educational Institution							
Residence							
Mercantile							
Industrial							
All other							
Total							

This analysis would indicate if particular types of buildings may be more or less likely targets of particular motivations for arson.

In addition to these general purpose statistical packages, Arson Pattern Recognition (APR) is a computer-aided analysis technique specifically designed for the identification and classification of trends in arson fire incident data. Based on the NFPA 901 incident reporting system, "the APR Technique is programmed to 'recognize' trends in arson cases that form distinctive 'patterns.' These patterns may be simple time-of-day versus day-of-the-week trends or elaborate multi-dimensional correlations involving hundreds of files over several years."[15]

Finally, as indicated in Section 7.1, many pre-written computer programs are available to communities participating in NFPA's Uniform Fire Incident Reporting System.

7.3 Early Warning Systems

This chapter has focused thus far on the collection and analysis of information on actual fire incidents. As we have seen, much of the data collected

during the investigation of an arson fire can be used, in the aggregate, to diagnose a jurisdiction's arson problem and to identify patterns that might be expected to persist in the course of future arson incidents.

A number of jurisdictions have carried this diagnostic function one step further, analyzing municipal records in an attempt to predict areas or particular structures vulnerable to the threat of arson. New York City, for instance, is developing a computer-aided, arson-for-profit data system. By examining a number of different data sources within the city government and other public records (e.g., Department of Housing Preservation and Development, Finance Administration's Real Property Assessment Division, Con Edison building vacancy file, etc.) for characteristics of buildings undergoing economic stress or rapid appreciation, potential targets of arson are expected to be identified. Examples of data elements to be included in the system are:

- building code violations;
- property assessment value;
- tax arrearages;
- property transactions; and
- building vacancies.

The development of such a system is hoped to have two effects: first, to identify potential arson sites, and second, to aid the investigation of arson-for-profit fires that have occurred. Ideally, such arson-for-profit data systems would include information on lienholders and the dollar amount of fire insurance policies on buildings. However, in New York, a decision was made to include only those data already available in public records. In jurisdictions with laws allowing free exchange of this type of information, the inclusion of such data would greatly increase the ability to identify arson-for-profit.

Conceptually related to New York's effort is a demonstration project currently underway in Boston. Urban Educational Systems (UES), a Boston-based private, non-profit corporation, is presently working on developing an Arson Early Warning System (AEWS) under a grant received from the U.S. Fire Administration. This demonstration effort grew out of the observation that some arson fires are preceded by unusual events such as a high number of sales of the property, or small, earlier fires. Since many of these occurrences are routinely recorded for governmental and public use by local government agencies, it was thought that an Early Warning System could be devised to give prior notice of many building fires.[11] UES researchers hypothesized that the likelihood of an arson-for-profit incident rests on the economic situation of the building, the economic circumstances of the owner and the availability of a party willing to burn the property. Existing city records

were examined to determine--from a theoretical perspective--what variables might reveal economic stress on properties or their owners. Among the indicators examined were such factors as the number of code violations (sanitary and building), time between building citations and repairs, vacancy rates, debt/equity ratio, sales and resales, lien attachments and order notices, tax arrearages, rent control status and previous fires in the building. Indicators of owner susceptibility included previous fire incident history and financial status.

This information allowed the classification of buildings by level of arson risk--ranging from excess risk (buildings with economic stresses, owners with bad track records, and the presence of "foreshocks" such as sudden vacancies) to low risk (where none of the above were apparent). A simplified model of the actions that might be stimulated by such a classification system is presented below.

Figure 7.9

Possible Interventions Based on Arson Early Warning Data

Building Record / Owner Record	Buildings with No Economic Stresses	Buildings with Economic Stresses
Owner with Good Record	No intervention.	Try to assist owner in financial trouble.
Owner with Bad Record	Monitor the building/owner.	Direct intervention: warn authorities; put owner on alert; organize neighborhood concern.

In order to test the validity of this classification scheme, UEG researchers are presently examining the records of a matched sample of burned and unburned buildings in an attempt to identify those data elements with the strongest value as predictors of arson fires.

The first phase of UEG' research has resulted in the development of two guides of immediate use to communities confronting an arson-for-profit problem: Research--A Manual for Arson Analysis and Property Research provides guidelines for researching building and owner records; and a companion manual entitled Arson Action Guide suggests possible strategies for using the information revealed by the research process.[12] While these documents can assist in the investigation of suspicious fires after the fact, the results

of the present inquiry may lead to a documented system for identifying arson targets before the fires are set.

The New Haven Fire Department is using a similar approach in the final phase of a program to develop an Arson Warning and Prevention Strategy (AWPS). The purpose of this experimental effort is to identify reliable "trigger variables" or those events that typically precede an arson fire. By identifying two matched groups of burned buildings (100 arson and 100 non-arson), and examining all available data, it is hoped that trigger variables will be found that can be used to identify potential targets of future arson fires.

Each of these efforts (and others underway in Los Angeles, Phoenix, San Francisco, Knoxville and Washington State[13]) represents an important contribution to the development of model arson information systems. The value of a comprehensive information system to the investigation of current arson events has been clearly demonstrated. And, the use of related systems for predicting future arson events is certainly within reach. Yet, while work continues on the development of statistically valid arson early warning systems, the importance of observational information should not be discounted. In many jurisdictions, the signs of urban decay that will precede an outbreak of arson fires are readily visible to the trained observer. Where vulnerable areas are both small and contained, an assessment of the structural and financial integrity of the building stock need not wait for formal reports on code violations, vacancy rates and property transactions. Visual neighborhood surveys can provide a crude measure of the extent of abandonment, condemnation, turnover of business establishments and the general conditions of blight (trash, peeling paint, rough roads) that signal declining property values and point to the need for concerted action from all agencies involved in arson prevention and control.

7.4 Arson Program Evaluation

In the preceding sections, the development of an arson data system that could serve as a diagnostic and investigative tool was presented. Another use of such a data system is to evaluate arson programs. Within an overall, coordinated approach to combat arson, evaluation is essential to determine whether the programs implemented in response to local arson problems have been successful. As evaluations are conducted, programs can be modified, revised, eliminated, or augmented to deal with current arson patterns.

7A.1 Evaluation Approaches

Evaluations of arson programs may focus on assessing the efficiency of current operations (process evaluation) and/or determining the effectiveness of those operations (outcome or impact evaluation). Examples of process evaluation would be:

- assessing whether a shift in the staffing pattern of arson investigators results in the investigation of more suspicious fires;
- determining whether a new training program for line firefighters results in more requests from them for arson investigations; and
- determining whether a new media campaign increases the number of calls received on an arson hotline.

Examples of impact evaluation would be:

- assessing whether a new arson patrol reduces the incidence of arson in the patrolled area;
- determining whether a new telephone "tip-line" deters potential arsonists; and
- deciding whether new legislation has increased the conviction rate of arrested arsonists.

Both types of evaluation involve comparisons between (1) measures obtained prior to and following specific arson program interventions or (2) between actual observed rates and desired or target rates. For example, evaluations might include a comparison between per capita arson rates before and after a new media campaign program is instituted. Similarly, a comparison could be made between the conviction rate of arrested arsonists in one jurisdiction and the conviction rate in another jurisdiction where penal statutes have been modified to create a category for aggravated arson. The construction of these comparisons is a critical concern in the design of evaluation efforts. This issue is discussed below.

7A.2 Sources of Error

There are three factors that can render any evaluative comparisons inaccurate and potentially misleading. To the extent that these factors are absent or can be eliminated from comparisons, the evaluations will be more useful to

decision-makers in designing effective arson control strategies. These factors are:

- history, or events unrelated to the arson program that cause differences in the results;
- instrumentation, or changes in the measurement system which cause differences in comparisons; and
- statistical regression, or changes produced because of the extremeness of the initial measurement.

History causes an evaluation to be misleading when circumstances over which an arson program has no influence result in a change, and that change is then credited to program efforts. An example of this might be a reduction in the arson rate following a task force's first year of operation. A history effect would occur if the change was attributed to the task force while it was actually caused by a change in the economy which led to a reduction in the incidence of arson-for-profit.

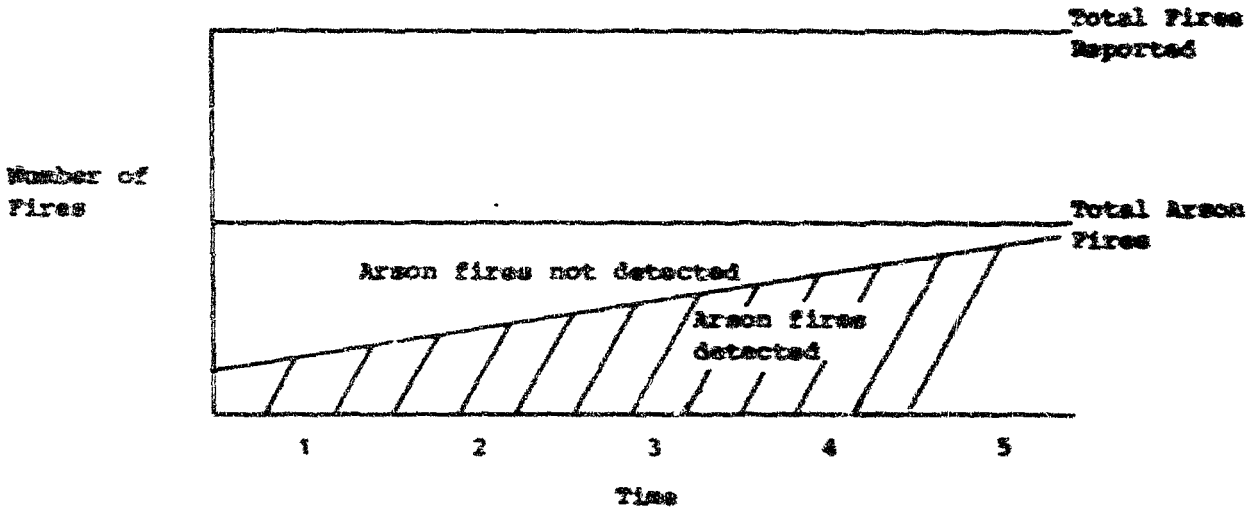
Instrumentation causes misleading evaluations when changes in the accuracy of measures are confused with changes in actual events. This source of error is of special importance to evaluations which rely on arson rates as a measure of program effectiveness. Since these rates are based on the determination of whether a fire is arson or accidental, improvement in a jurisdiction's capability to identify arson fires might produce misleading conclusions about the frequency or nature of arson over time. Such improved detection capability might result from:

- increased training of line firefighters to recognize arson;
- investigation of a larger proportion of all fires;
- increased time investigating fires; and
- improved or additional arson detection equipment.

As fires are investigated more frequently and more thoroughly by trained and equipped investigators, one can assume that a larger percentage of previously undetected fires will be correctly identified as arson. Figure 7.10 shows the effect of starting with poor measures and then, through increased training and investigation, increasing the validity of arson detection measures. If the total number of arson and non-arson fires were to remain unchanged while detection ability increased, decision-makers would be led to believe that arson was increasing. If this finding is associated with an arson reduction program, such measures might result in the incorrect conclusion that the program was causing arson to increase, or at best that the program was having

Figure 7.10

Theoretical Effect of Increased Detection Capability on Measured Arson



no effect on an increasing arson rate when in fact the real occurrence of arson was unchanged. Because arson programs attempt to reduce or prevent events that are not capable of even near-perfect measurement, their evaluation is especially vulnerable to instrumentation error.

Statistical regression refers to the fact that if a measure such as the annual arson rate is most extreme (when compared to previous measures) the next measure will generally move back towards the average, regardless of whether any new programs were implemented in the interim. Statistical regression implies that events have to improve if they have already reached a point where they can get no worse. Since arson programs are often not initiated until the arson problem is at its worst in the community's recent history, it is difficult to determine whether subsequent improvement is due to program effects or statistical regression.

Fortunately, evaluators can reduce or eliminate the negative impact which these sources of error may have on the evaluation by choosing a research design which "controls" for their effect on the evaluation results. Many texts have been developed which explain these research designs, [14] and the reader is urged to consult these sources for further information.

7.5 Summary

Clearly, collecting data on the incidence and characteristics of arson is critical to the selection of appropriate arson control strategies.

This chapter has suggested several guides for the development of a responsive data collection system:

(1) The information included in the information system should serve to describe the nature and magnitude of the problem and to guide present and future arson prevention and investigation activities.

(2) The system should be viewed as more than its data forms and data processing equipment. To produce reliable and accurate information about arson, consistent procedures for the initial fire scene investigation and careful definitions and coding protocols must be established.

(3) The types of information included should meet a number of criteria. The data should be: relevant in answering questions of interest; accessible; available in quantity; and reliable.

(4) Records of fire incidents and their causes provide the foundation for all arson reporting systems. To avoid redundancy with existing national reporting systems, the use of the U.S. Fire Administration's Basic Incident Report (NFIRS-902F) is suggested as the starting point for an arson data system.

(5) Property financial data (including assessed value, taxes paid and owed, vacancy rates, code violations, insured value and related insurance information) and information on the owner or insurance beneficiary (other holdings, previous fire history) should be collected to support basic incident data in the investigation of arson-for-profit fires.

(6) Records for tracking the disposition of suspects, their motives and modus operandi are also key files in an arson data system.

(7) The exact number and nature of forms should be conditioned by the nature of the investigation process as well as the roles of participants in that process.

(8) In format, forms should be tailored to suit the agencies from which data will be gathered. All forms should be machine-readable.

(9) In view of the need to collect data from agencies outside the fire service, careful consideration should be given to the administrative and staffing needs of the system--specifically, its organizational placement, the need to establish cooperative arrangements with agencies that will serve as data sources, and the need for data collectors with the credibility and authority to access the required information.

(10) In addition to its other uses, the local arson data system is an important tool for the evaluation of communities' arson prevention and control programs. Data system information can be applied to the assessment of the efficiency of program operations (process evaluation) or the effectiveness of these operations (impact evaluation). Results of the evaluation will assist arson program officials in improving their program and demonstrating the program's value to funding sources and the public.

References

1. U.S. Fire Administration, Federal Emergency Management Agency, Report to the Congress: Arson--The Federal Role in Arson Prevention and Control (Washington, D.C.: Government Printing Office, 1979), p. 48.

2. National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U. S. Department of Justice, A Survey of Arson and Arson Response Capabilities in Selected Jurisdictions, by Stephen H. Webster and Kenneth E. Mathews, Jr. (Washington, D.C.: Government Printing Office, 1979), p. 20.

3. System requirements are those procedures and the physical equipment that are necessary for a system, independent of the content or the type of information that goes into the system.

4. U.S. Fire Administration, Report to the Congress, p. 48.

5. This sample system is based on the New Haven, Connecticut Arson Information System.

6. National Fire Protection Association, Fire Reporting Field Incident Manual 1976 (Boston: National Fire Protection Association, 1976).

7. National Fire Protection Association, Uniform Coding for Fire Protection 1976 (Boston: National Fire Protection Association, 1976).

8. Although this discussion refers only to individuals, it should be recognized that owners and insurance beneficiaries can be corporations and similar legal entities, as well as individuals. The Owner Record presented in this section is intended to be used for all types of owners.

9. National Fire Protection Association, Fire Reporting Field Incident Manual 1976, p. 92.

10. John L. Bryan and David J. Icove, "Recent Advances in Computer-Assisted Arson Investigation," Fire Journal 7 (January 1977).

11. Urban Educational Systems, "An Overview of the Boston Arson Early Warning System Study" (Boston: Urban Educational Systems, 1979).

12. These documents will be available from the U.S. Fire Administration.

13. U.S. Fire Administration, Report to the Congress, p. 52.

14. See, for example, Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally College Publishing Company, 1966). See also, Edward Suchman, Evaluative Research: Principals and Practice in Service and Social

Action Programs (New York: Russell Sage Foundation, 1969); John B. Lansing and James N. Morgan, Economic Survey Methods (Ann Arbor: Institute for Social Research, 1971); and Peter H. Rossi, Howard E. Freeman, and Sonia R. Wright, Evaluation: A Systematic Approach (Beverly Hills: Sage Publications, Inc., 1979).

APPENDIX A

Summary of Arson Prevention and Control Programs in Cities Selected for Site Visits

Summary of Arson Prevention and Control Programs in Cities Selected for Site Visits

FEATURE	N.Y.C.	Seattle	Philadelphia	Denver	Dallas	[illegible]
I Scope of Local Arson Problem						
A. Population of City	7,438,000	487,000	1,815,800	484,000	842,000	[illegible]
B. Size of Fire Department						
1 Paid full time firemen	8,300	979	3,000	960	1,471	[illegible]
2 Fire Companies	230	35	63	50	75	22
C. Number of Fires						
1 Fires in Buildings – 1977	54,486	1,712	8,534	2,884	3,212	488
2 Arson Fires – 1977	8,890	598	1,860	585	700	225
II Legal Environment						
A. Criminal Code for Arson	Arson I – Explosion: Felony A1 Arson II—Occupied Felony B Arson III – Unoccupied: Felony C Arson IV Felony E	Occupied or injury to firemen: Felony A All other arsons: Felony B Reckless burning 1st degree: Felony C Reckless burning 2nd degree: Gross Misdemeanor	Endangering persons, causing or risking catastrophe: 1st degree felony Endangering property: failure to prevent catastrophe: 3rd degree felony	All: Felony	Arson: Felony 2 Injury by Arson: Felony 1	Arson I Felony B Arson II Felony C Arson III Felony D Reckless burning Misdemeanor A
B. Powers of Fire Investigator	1) Able to arrest 2) Issue subpoena 3) Take sworn testimony at scene	Able to arrest	No police powers	Able to arrest	Able to arrest	No police powers
C. Information Obtained from Insurance Investigators	Subpoena required	Subpoena required	Information may be obtained	Court order required	Information may be obtained	Information may be obtained by state Fire Marshall only.
III Institutional Factors of Local Arson Programs						
A. Organization	1) Division of Fire Investigation – Citywide team of fire personnel only reporting to Dept. Chief 2) Citywide task force reporting to Deputy Mayor	1) Citywide team consisting of police and fire men reporting to Fire Chief 2) Statewide task force	1) Citywide team of police and fire personnel reporting to Ass't Chief of Dept. 2) Citywide task force	1) Citywide team of fire personnel only reporting to Dept. Chief 2) Statewide task force	1) Citywide team of fire personnel only reporting to Asst. Chief 2) Citywide task force	1) Citywide team consisting of police and fire personnel reporting to Chief Fire Marshall 2) Citywide task force reporting to the mayor
B. Composition	1) Regular 1 Chief in charge 1 Chief Fire Marshall 2 Dep. Chief Fire Marshals 17 Supv. Fire 165 Fire Marshals 2) Task force 50 police 50 fire Housing Dept. Mayor's Crim. Just. Office D.A.'s Office	1) Regular 1 Fire Captain 1 Fire Lieut. Investigator 7 Fire Investigators 2 Police Detective Investigators 2) Task force Mayor's Office Public Safety Prosec's Office Insurance Industry Fire Dept. Police Dept. Sheriff's Office Chamber of Commerce	1) Regular 1 Asst. Chief 1 Battalion Chief 3 Captains 15 Lieutenants 4 Police Detectives 4 Civilians 2) Task force Fire Dept. Police Dept. Treasury Dept. (A.T.F.)	1) Regular 1 Captain 1 Lieutenant 10 Investigators 1 Secretary 2) Task force Colo. Bur. of Inv. All Fire Depts. All Police Depts. Insurance Industry	1) Regular 1 Division Chief 2 Asst. Division 11 Captains 3 Lieutenants 1 Fire Prev. Off'r (Polygraph Examiner) 2) Task force Fire Dept. Arson Div.	1) Regular 1 Lieutenant 2 Fire Investigators 2 Police detectives 2) Task force Fire Dept. Police Dept. Building Dept. Mayor's Office Insurance Companies
C. Training	3 to 4 months arson and investigation techniques, 6 mos. OJT before processing case.	165 hours law enforcement 40 – investigation 80 – arson	Arson, investigations, law enforcement, evidence analysis.	Arson, investigations, law enforcement, evidence analysis.	Arson, investigations, law enforcement, evidence analysis.	National Fire Academy, State's Academy Program, State Technical College.

Survey (continued)

FEATURES	N.Y.C.	Seattle	Philadelphia	Denver	Dallas	New Haven
2. Arson Patrols	Where arsons form unique trend, on a regular basis, using surveillance techniques.	2 uniformed firemen as part of regular duties, highly visible.	None	None	None	None
3. Citizen Cooperation	Block patrols (patrols): citizens encouraged to watch for arsonists.	Citizens encouraged to watch for arsonists.	Citizens encouraged to watch for arsonists.	Citizens encouraged to watch for arsonists.	Citizens encouraged to watch for arsonists.	Citizens encouraged to watch for arsonists.
4. Offering Rewards	$[illegible] for each arrest and conviction.	$[illegible] divided up over year on merit basis for arrest and conviction. Southeast Seattle Arson Award Fund, sponsored by Rainier Community Action Assn., SFD and Chamber of Commerce for children in Southeast Seattle.	None	Offered	Offered. Arson reward fund of $[illegible] in conjunction with awareness campaign - both funded by local chapter of Ind. Insurance Agents.	Offered
5. Closing Buildings	Massive inter-agency effort to condition, remove contents, and seal or raze structures.	Program exists, but not much done.	Program exists	Program exists	Program exists	Program exists
VI. Program Cost and Impact						
A. Cost of Arson Prevention and Sources (personnel only, all other costs negligible)	$[illegible]—total [illegible]—LEAA [illegible]—Vacant Apartment Protection Program (VAPPC) Federal (HUD)	$[illegible]—total	$[illegible]—total	$[illegible]—total	$[illegible]—total	$[illegible]—total [illegible]—LEAA [illegible]—insurance companies
B. Impact of Program	Firemen's hours in targeted areas reduced 10 to 15 percent; fires down 15% citywide, 30% in selected areas; increased identification of arson fires, apprehensions and convictions.	Total arson property damage - 1974 3.2 mil. 1977 1.8 mil. Total arson apprehensions - 1974 23 1977 [illegible] Increased identification of arson fires and arrests, improved statistics.	Increased identification of arson fires, apprehensions and arrests, decrease in arson, improved statistics. Increased arrests attributed to use of federal task force agents, fed. and powers to obtain evidence, and federal prosecution.	N/A	Increased identification of arson fires, apprehensions, and arrests, decrease in arson, improved statistics. Initially [illegible]% clearance rate in adult arson cases and 37% reduction in total fires.	Increased identification of arson fires, apprehensions and convictions. A decrease in vacancy fraud fires.
VII. Distinctive Program Features	Arson Strike Force — massive effort to deter arson — increased patrols, electronic surveillance of target buildings. Arson Awareness campaign among community groups and businesses.	Public education campaign, statewide Task Force. Local arson ordinances for single investigation by Task Force.	Cooperation between police and fire depts., joint operations with federal task force agents, working with Insurance Federation of Pa. to develop new anti-arson programs, consolidation [illegible] law established to allow fire investigators to discuss their findings with insurance company representatives.	Statewide Task Force organized by Independent Insurer's of Colo., Colorado Advisory Committee on Arson Prevention and Colorado Bur. of Investigation, good arrest record.	Multi-media Arson Awareness campaign and arson reward fund, good arrest record.	Cooperation and use of arson profiles; good cooperation between police and fire depts.

1. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2. Equipment	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3. Laboratories	Police, ATF, FBI	State	[illegible] ATF	Police, State, ATF, FBI	Dallas County Forensic Lab.	Police and State.
IV. [illegible]						
A. Sources	Incident report [illegible] City Hall files [illegible]	Incident report [illegible]	Incident report [illegible] City Hall files [illegible]	Incident report, property financial data, [illegible] City Hall files, [illegible]	Incident report, property financial data, [illegible] City Hall files, [illegible]	Incident reports, property financial data, [illegible] City Hall files, [illegible]
B. Data System	Key [illegible] [illegible]	Key [illegible] [illegible]	[illegible], also use PD files.	[illegible]	[illegible]	Computer [illegible]
C. Reports and Analysis	Analysis by neighborhood.	[illegible]	N/A	[illegible]	N/A	Computer analysis by neighborhood and [illegible]
V. Program Operations						
A. Deployment	On duty 24 hrs., 7 days a week. [illegible]	On duty [illegible] [illegible] $1,000 [illegible]	On duty 24 hrs., 7 days a week. [illegible]	On duty 24 hrs., 7 days a week. [illegible]	On duty 24 hrs., 7 days a week. Computer [illegible] Fire Control [illegible]	N/A
B. Arson Prevention Efforts						
1. Public Education	Talks with [illegible]	Arson [illegible] T-shirts, [illegible]	[illegible]	[illegible]	[illegible]	[illegible]

APPENDIX B

Model Arson Penal Law

MODEL ARSON PENAL LAW

OFFENSES AGAINST PROPERTY

ARTICLE 100

ARSON, CRIMINAL MISCHIEF AND OTHER PROPERTY DESTRUCTION

§ 100.1 Arson and Related Offenses

(1) Aggravated Arson. A person is guilty of aggravated arson, a felony of the first degree, if he starts a fire or causes an explosion, of if he aids, counsels or procures a fire or explosion, with the purpose of:

(a) destroying an inhabited building or occupied structure of another; or

(b) causing, either directly or indirectly, death or bodily injury to any other person.

(2) Arson. A person is guilty of arson, a felony of the second degree, if he starts a fire or causes an explosion, or if he aids, counsels or procures the setting of a fire or causing of an explosion, with the purpose of:

(a) destroying or damaging a building or unoccupied structure of another; or

(b) destroying or damaging any real or any personal property having a value of $_____or more, whether his own or another's, to collect insurance for such loss.

(3) Reckless Burning or Exploding. A person commits a felony of the third degree if he purposely starts a fire or causes an explosion, or if he aids, counsels or procures a fire or explosion, whether on his own property or another's, and thereby recklessly:

(a) places another person in danger of death or bodily injury; or

(b) places a building or structure of another, whether occupied or not, in danger of damage or destruction; or

(c) places any personal property of another having a value of $_____or more in danger of damage or destruction.

(4) Failure to Control or Report Dangerous Fire. A person who knows that a fire is endangering life or property of another and fails to take reasonable measures to put out or control the fire, when he can do so without substantial risk to himself, or to give a prompt fire alarm, commits a misdemeanor if:

(a) he knows that he is under an offical, contractual or other legal duty to control or combat the fire; or

(b) the fire was started, albeit lawfully, by him or with his assent, or on property in his custody or control.

(5) Definitions. "Occupied Structure" means any structure, vehicle or place adapted for overnight accommodation of persons, or for carrying on business therein, whether or not a person is actually present.

"Property of Another" means a building or other property, whether real or personal, in which a person other than the offender has an interest which the offender has no authority to defeat or impair, even though the offender may also have an interest in the building or property.

If a building or structure is divided into separately occupied units, any unit not occupied by the offender is an occupied structure of another.

§ 100.2 Causing or Risking Catastrophe

(1) Causing Catastrophe. A person who causes a catastrophe by explosion, fire, flood, avalanche, collapse of building, release of poison gas, radioactive material or other harmful or destructive force or substance, or by any other means of causing potentially widespread injury or damage, commits a felony of the second degree if he does so purposely or knowingly, or a felony of the third degree if he does so recklessly.

(2) Risking Catastrophe. A person is guilty of a misdemeanor if he recklessly creates a risk of catastrophe in the employment of fire, explosives or other dangerous means listed in Subsection (1).

(3) Failure to Prevent Catastrophe. A person who knowingly or recklessly fails to take reasonable measures to mitigate a catastrophe commits a misdemeanor if:

(a) he knows that he is under an offical, contractual or other legal duty to take such measures; or

(b) he did or assented to the act causing or threatening the catastrophe.

§ 100.3 Criminal Mischief

(1) Offense Defined. A person is guilty of criminal mischief if he:

(a) damages or alters any tangible real or personal property of another purposely, recklessly, or by negligence in the employment of fire, explosives, or other dangerous means listed in Section 100.2(1); or

(b) purposely or recklessly tampers with tangible property of another so as to endanger person(s) or property; or

(c) purposely or recklessly causes another to suffer pecuniary loss by deception or threat.

(2) Grading. Criminal mischief is a felony of the third degree if the actor purposely causes pecuniary loss in excess of $_____, or a substantial interruption or impairment of public communication, transportation, supply of water, gas or power, or other public service. It is a misdemeanor if the actor purposely causes pecuniary loss in excess of $_____or a petty misdemeanor if he purposely or recklessly causes pecuniary loss in excess of $_____.

§ 100.4 Possession of Explosive or Incendiary Materials or Devices

A person is guilty of a felony of the third degree when he shall possess, manufacture or transport any incendiary or explosive device or material with the intent to use or to provide such device or material to commit any offense described in 100.1 (1) (2) and (3).

§ 100.5 Attempted Arson

A person is guilty of attempted arson, a felony of the third degree, if he places or distributes any flammable or combustible material, or any gas, radioactive material, or other harmful or destructive material or substance, in an arrangement or preparation with the intent to eventually start a fire or cause an explosion, or to procure the start of a fire or explosion, with the purpose of wilfully and maliciously:

(a) destroying or damaging any building or structure of another whether occupied or not; or

(b) destroying or damaging any personal property of another having a value of $_____ or more; or

(c) placing any person in danger of life or bodily harm.

§ 100.6 False Reports

A person is guilty of a misdemeanor if he knowingly conveys or causes to be conveyed to any person false information concerning the placement of any incendiar, or explosive device or any other destructive substance in any place where persons or property could be endangered.

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APPENDIX C

Model Arson Reporting Immunity Bill

ALLIANCE OF AMERICAN INSURERS - PROPERTY LOSS RESEARCH BUREAU

Model Legislation

ARSON REPORTING IMMUNITY BILL

To enact section _____ of the revised code, providing for certain authorized agencies to request and receive from insurance companies information relating to fire losses; providing for insurance companies to notify authorized agencies of suspicious fire losses, such notice to be indicative of a request for an official investigation; providing for immunity to those insurance companies that provide information under the provisions of this act; providing for the exchange of information between the insurance companies and the authorized agencies and the exchange of information between authorized agencies; providing for confidentiality of released information; providing for testimony in matters under litigation and, providing for penalties for violation of the provisions of this act.

Section 1. Definitions.

(a) This act shall be known as the Arson Reporting-Immunity Statute.

(b) "Authorized Agencies" shall mean:

(1) The State Fire Marshal when authorized or charged with the investigation of fires at the place where the fire actually took place.

(2) The Director of the State Department of Law Enforcement or similar State Director;

(3) The Prosecuting Attorney responsible for prosecutions in the county where the fire occurred;

4) The District Attorney responsible for prosecution in the county where the fire occurred;

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(5) The State's Attorney responsible for the prosecution in the county where the fire occurred;

and, solely for the purposes of Section 2(a):

(6) The Federal Bureau of Investigation or any other Federal agency;

(7) The United States Attorney's Office when authorized or charged with investigation or prosecution of the fire in question.

(c) "Relevant" means information having any tendency to make the existence of any fact that is of consequence to the investigation or determination of the issue more probable or less probable than it would be without the evidence. (See F.R. Evid Rule 401)

(d) Material will be "deemed important," if within the sole discretion of the "authorized agency," such material is requested by that "authorized agency."

(e) "Action," as used in this statute, shall include non-action or the failure to take action.

(f) "Immune," as used in Section 2(e) of this act, shall mean that neither a civil action nor a criminal prosecution may arise from any action taken pursuant to Section 2, 3 or 4 of this act where actual malice on the part of the insurance company or authorized agency against the insured is not present.

(g) As used in this Section, "insurance company" include the _____ FAIR Plan.

Section 2. Disclosure of Information.

(a) Any authorized agency may, in writing, require the insurance company at interest to release to the requesting agency any or all relevant information or evidence deemed important to the authorized agency which the company may have in its

possession, relating to the fire loss in question. Relevant information may include, without limitation herein:

(1) Pertinent insurance policy information relevant to a fire loss under investigation and any application for such a policy;

(2) Policy premium payment records which are available;

(3) History of previous claims made by the insured;

(4) Material relating to the investigation of the loss, including statements of any person, proof of loss, and any other evidence relevant to the investigation.

(b) (1) When an insurance company has reason to believe that a fire loss in which it has an interest may be of other than accidental cause, then, for the purpose of notification and for having such fire loss investigated, the company shall, in writing, notify an authorized agency and provide it with any or all material developed from the company's inquiry into the fire loss.

(2) When an insurance company provides any one of the authorized agencies with notice of a fire loss, it shall be sufficient notice for the purpose of this act.

(3) Nothing in Section 2(b) of this act shall abrogate or impair the rights or powers created under Section 2(a) of this act.

(c) The authorized agency provided with information pursuant to Section 2(a) or 2(b) of this act and in furtherance of its own purposes, may release or provide such information to any of the other authorized agencies.

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(d) Any insurance company providing information to an authorized agency or agencies pursuant to Section 2(a) or 2(b) of this act shall have the right to request relevant information and receive, within a reasonable time, not to exceed 30 days, the information requested.

(e) Any insurance company, or person acting in its behalf; or authorized agency who releases information, whether oral or written, pursuant to Section 2(a) or 2(b) of this act shall be immune from any liability arising out of a civil action, or, penalty resulting from a criminal prosecution.

Section 3. Evidence.

(a) Any authorized agency and insurance company described in Section 1 or 2 of this act who receives any information furnished pursuant to this act, shall hold the information in confidence until such time as its release is required pursuant to a criminal or civil proceeding.

(b) Any authorized agency referred to in Section 1. of this act, or their personnel, may be required to testify in any litigation in which the insurance company at interest is named as a party.

(NOTE: Sections 4 (a), (b) and (c) are optional and not required.)

Section 4. Enforcement.

(a) No person or agency shall intentionally or knowingly refuse to release any information requested pursuant to Section 2(a) or 2(c) of this act.

(b) No person shall intentionally or knowingly refuse to provide author'zed agencies relevant information pursuant to Section 2(b) of this act.

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(c) No person shall fail to hold in confidence information required to be held in confidence by Section 3. of this act.

(d) Whoever violates Section 4(a), 4(b), or 4(c) of this act is guilty of a ____________ misdemeanor, and upon conviction, shall be punished by a fine not to exceed $______________.

Section 5. Home Rule and Common Law.

(a) The provisions of this act shall not be construed to affect or repeal any ordinance of any municipality relating to fire prevention or the control of arson, but the jurisdiction of the State Fire Marshal and the Director of the State Department of Law Enforcement (or other similar State Police Director) in such municipality is to be concurrent with that of the municipal and county authorities.

(b) With the exception of Section 1. (f), all other provisions of this act shall not be construed to impair any existing statutory or common law rights or powers.

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END