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UNITED STATES DEPARTMENT OF  
**COMMERCE**  
**NEWS**  
WASHINGTON, D.C. 20230

NATIONAL  
FIRE PREVENTION  
AND CONTROL  
ADMINISTRATION

PREPARED BY DAVID A. LUCHT, DEPUTY ADMINISTRATOR, NATIONAL FIRE PREVENTION AND CONTROL ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE, FOR DELIVERY BEFORE THE ANNUAL MEETING OF THE SOCIETY OF CHARTERED PROPERTY AND CASUALTY UNDERWRITERS, WASHINGTON, D. C., SEPT. 27, 78

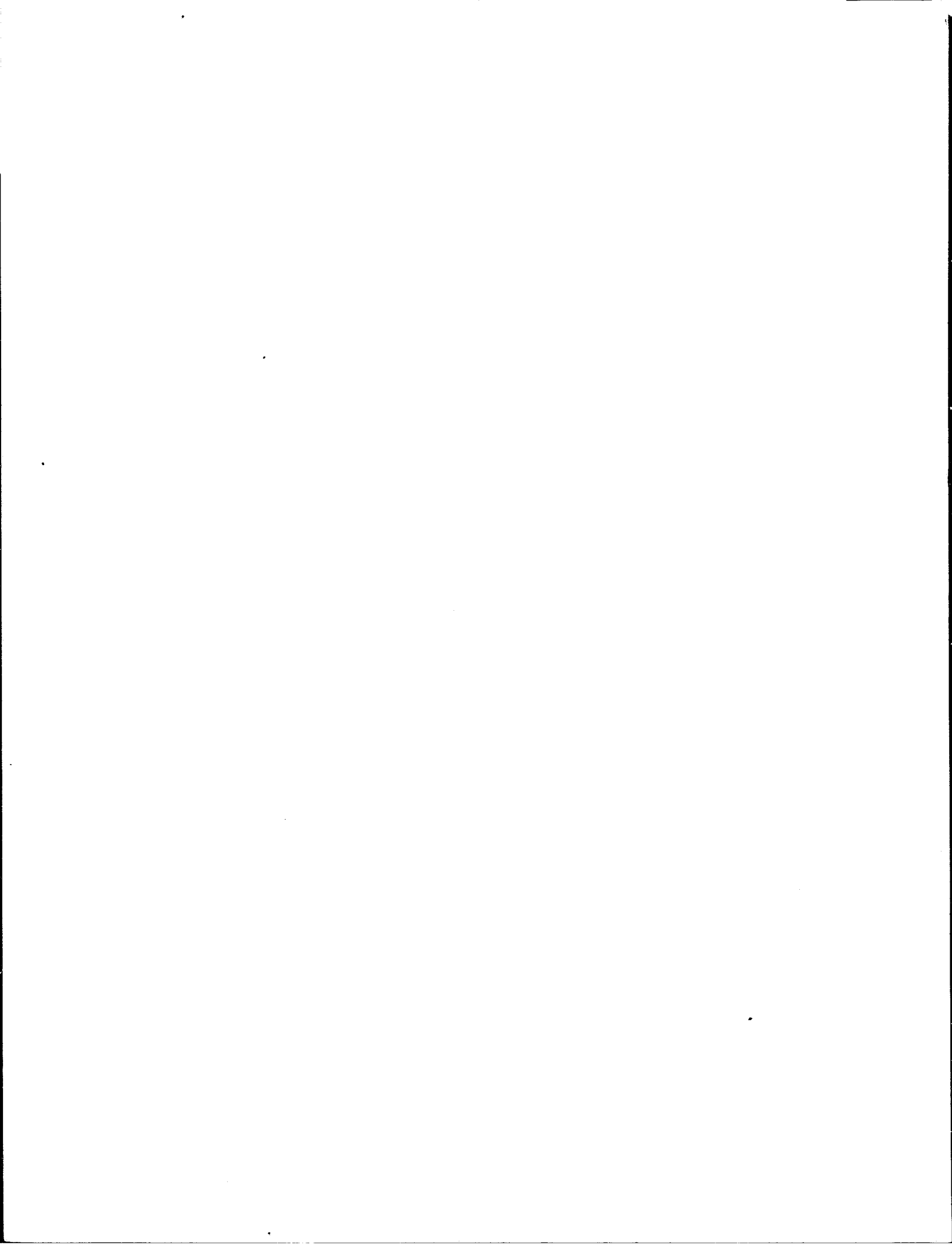
✓ "ARSON: A NATIONAL PERSPECTIVE"

The topic of arson is receiving a lot of national attention these days. We read more and more about it in the newspapers; national television networks have done special reports on the subject; bills and resolutions have been introduced in the Congress; both the House and the Senate are holding hearings. Federal agencies are scrambling to determine who should do what; state and local fire investigators are frustrated by its overwhelming magnitude; and the topic is receiving extensive discussion in insurance circles. The fact is that arson is both a crime and a fire problem of enormous proportions in the United States. It is also a major economic and social problem. We know little about how we are going to curb skyrocketing trends.

There are varying definitions of the term "arson" as well. For the purposes of this discussion today I am speaking of the term arson to include all fires which are thought to be intentionally set (of incendiary or suspicious origin).

Arson causes hundreds of millions of dollars--perhaps over a billion--in direct property loss, 500 to 1,000 deaths, and 10,000 to 15,000 injuries per year. Beyond these gross numbers, statistics are meager. The NFPCA's National Fire Incident Reporting System (NFIRS) has been in operation for about three years and includes some 22 states; however, only a few of those states have been reporting

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standardized fire data long enough to use the information for analytical purposes. While NFIRS does not collect information on criminal motive or conviction rates, a number of facts are brought together regarding incendiary and suspicious fires.

ARSON AS A PER CENT OF ALL FIRES (Figure 1).

It is estimated by some sources that up to half of all fires are intentionally set. According to the National Fire Incident Reporting System, about 23% of all fires are intentionally set. Other estimates range from 12% from the Alliance of American Insurers to 21% for the American Insurance Association. When looking at building fires only, NFIRS estimates 16% of the fires are intentionally set and the National Fire Protection Association (NFPA) estimates 22%.

ARSON DEATHS AND INJURIES AS A PER CENT OF ALL FIRE DEATHS AND INJURIES (Figure 2)

The portion of the total U.S. fire problem attributed to arson is less in the deaths and injuries category than it is as a percentage of all fires. NFIRS estimates that about 7% of all fire deaths result from intentionally set fires; the NFPA estimates 9%. NFIRS estimates that about 14% of the fire injuries are arson related while a study conducted by the Aerospace Corporation suggests that the percentage is 8%.

On an annual basis, arson causes more deaths than all natural disasters combined.

ARSON DOLLAR LOSS AS A PERCENT OF ALL FIRE DOLLAR LOSS (Figure 3)

The dollar loss aspect of the U.S. fire problem has an extremely significant component which is arson related. However, estimates vary. The Insurance Information Institute has estimated that 11% of all fire dollar loss is attributed to arson. Our National Fire Incident Reporting System estimates about 20%. The American Insurance Association and the Alliance of American Insurers have estimated some 40% to 50% of all fire dollar loss is attributable to arson.

Looking at building fires only, (Figure 4), NFIRS estimates that 22% of the building dollar fire loss is attributable to arson; NFPA estimates 28%, noting that arson is the leading cause of dollar loss for building fires.

WHERE IS THE IMPACT FELT?

As can be seen in Figure 5, the largest portions of arson deaths and injuries occur in residential buildings. Seventy percent of the deaths and 48% of the injuries are found in residential buildings where people live and sleep. However, more than half of the dollar loss from arson occurs in non-residential buildings. Finally, over half of the arson fires (56%) do not occur in buildings.

Ohio NFIRS data for 1976 showed that arson accounted for a larger percentage of the fires in the larger cities than it did in the rural

and small towns (Figure 6). On the other hand arson is significant in rural areas too; and these are the jurisdictions which are least likely to have full-time fire and arson investigators. They must normally rely upon state investigators who are often spread extremely thin.

#### WHO COMMITS ARSON?

Little nationwide information is available concerning the profile of the typical arsonist. The state of California seems to have the broadest base of such information. In that state, the age of the person involved in 49% of the incendiary fires is not known. However, 20% were reported to be caused by juveniles and adults acting together; while 7% were specifically attributed to adults and 23% to juveniles.

The adult-set fires have more dollar loss per fire and probably include many of the arson fires for profit; but the juveniles are causing a lot of loss too.

#### WHY?

The motives for arson are varied and complex. Some people set fires for spite; some to cover up another crime; some to collect an insurance claim; some because of mental problems or revenge. Accurate data are not available to completely assess these various motives. Figure 7 shows various estimates of the fraction of arson fires caused by the fraud motive. This suggests that while a fundamental element of an arson prevention and control strategy should be aimed at economics and insurance issues, a large part of the problem, at least in terms of fire rates, needs to be addressed from other directions.

#### HOW ARE ARSON FIRES SET?

Here again, thorough data are not available to accurately assess the many ways arson fires are set. Flammable liquids have always been known to be a common accelerant for use in starting fires. However, as shown in Figure 8, the data shows that a large percentage of arson fires are also set by other means. Ordinary matches and ignition of materials at hand (newspapers, furniture, trash) are common elements found in arson fires. On the other hand, a fire involving flammable liquids is more likely to come to the attention of investigators than other fires. Also, it appears the most damaging fires involve the use of accelerants.

#### ARSON HAS BEEN GROWING RAPIDLY

Arson is especially alarming because it is increasing rapidly. The National Fire Protection Association reports that there has been a 370% increase in arson since 1964, and that in 1975 the annual rate of increase was 25%. The American Insurance Association said in 1977, there was a 20-25% annual increase. The Insurance Information Institute says that there was a tenfold increase over the last 25 years. The International Association of Arson Investigators says there was a 164% increase between 1968 and 1973.

Because the problem is accelerating and its absolute magnitude is already huge—hundreds of millions of dollars annually, hundreds of lives, thousands of injuries, as stated earlier—we clearly need

to improve our attack on the problem. Arson has received extensive public attention in recent years and the question most often asked is--"What can be done about it?"

#### WHAT CAN BE DONE?

The preceding information was based on an assortment of data sources which are known to the National Fire Data Center. It is not intended to portray a firm picture of national arson statistics. Other sources of data are also available and arson statistics do vary from state to state and community to community. However, it has been well established that the arson problem is not a simple one. We know that it is very complex and that it has both urban and rural characteristics; we know that it involves juveniles as well as adults; we know that it involves fraud and many other motives; it raises insurance, economic, banking and housing issues and socio-economic concerns. Solutions which will have impact on the arson problem are equally complex. It is not just a police problem and it is not just a fire department problem. It is a multi-faceted problem that requires a multidisciplinary approach. We must both investigate and prosecute arson, and we must remove the social and economic incentives and causes.



To help obtain an initial picture of the possible solutions to the arson problem, in January and February, 1976, the NFPCA sponsored two leadership seminars for developing a coordinated attack on arson. These seminars were held at Battelle Columbus Laboratories and they brought together many national leaders from different disciplines to concentrate on solutions to arson problems. The report of this conference was published by the NFPCA and is titled "Arson: America's Malignant Crime". The participants in these seminars identified nine general needs areas which focused on what should be done about arson. These nine needs areas were further broken down into over 40 specific actions which should be taken (Figure 9 highlights the needs areas which evolved from the Battelle Leadership Seminars).

During the past two years the NFPCA has been working on some of these needs areas and further evaluating others. In addition, new knowledge and experience have enabled us to identify additional strategies which need to be undertaken to have impact on arson. We have taken the results of the Battelle Leadership Seminars along with other useful information and molded it into a six part arson prevention and control program as outlined in Figure 10. Figure 10 represents a general breakdown of what "needs to be done" about arson. It is not implied to be all inclusive; other approaches will emerge. Several of these "need to be done" programs require Federal investments. Some are more appropriately other public agency or private sector responsibilities.

The following discussion covers some of the highlights of these six program areas.

I. DATA (Figure 11)

We are sorely lacking in both statistical and non-statistical information about arson problems and programs. As mentioned earlier, it is currently impossible to accurately measure the arson problem and its various components. Figure 11 shows eight specific initiatives which must be taken in the data area: four of them are statistical in nature and four of them are non statistical. In the statistical area, we need better crime statistics and we need better fire statistics. The FBI's Uniform Crime Reporting System and its special reports are the most logical vehicles for improving our arson crime information. The NFPCA's National Fire Incident Reporting System is the most logical existing vehicle for collecting fire statistics related to the crime of arson. NFIRS needs to be expanded to include more states and communities and the quality of its fire cause data needs to be improved. Particular attention needs to be paid to reducing the number of fires which are reported with a cause "unknown". An improved estimate of the percent of "unknown" fires that are arson also needs to be made. Research is also needed to estimate the percent of fires labelled "suspicious" that might reasonably be counted as arson.

Concerning non-statistical information, additional needs have been identified to create an information resource about arson problems and solutions for officials on the state and local level who must confront the problem on a face-to-face basis.

## II. INVESTIGATION AND ENFORCEMENT (Figure 12)

Arson is indeed a crime; in most states it is classified as a felony. It has been well shown that the capability of our state and local fire and police personnel to deal with arson is generally not adequate, quantitatively or qualitatively. The investigation and prosecution of arson as a crime needs to be reinforced. Investigation and enforcement can be reinforced through education and training, through the development of new investigatory methods and the development of new investigative tools.

## III. ATTITUDES AND BEHAVIOR (Figure 13)

Arson is very much a people problem. The general public needs to be made aware of arson as a significant crime and, especially through their elected and appointed representatives in government, they need to express a concern that something be done. With regard to the fire-setters themselves, needs have been identified to help us better understand the motives of the arsonist, his or her perception of risk and for counselling juveniles. A model juvenile fire-setter counselling program combined with a school fire education effort in the County of Los Angeles have demonstrated

the potential for effectiveness. The number of juvenile-set fires was reduced 93% over a two-year period in that county.

#### IV. ECONOMICS (Figure 14)

It has been established that a significant part of the arson problem has economic implications. We obviously see an insurance fraud motive in the arson problem and we see organized crime using various methods to escalate the property values and insurance policy amounts to make a profit from fires. We see urban arsons being committed so that apartment residents can receive public assistance to move to newer or improved housing. Various housing, banking, and insurance policy issues need to be examined and new administrative remedies implemented to make the economics of arson less attractive.

#### V. LEGISLATION (Figure 15)

Our legislative bodies also have a role to play in solving the arson problem. Strong and effective laws are needed to combat arson as a crime and to make arson for profit more difficult and less attractive. Model arson laws and anti-fraud legislation, housing and banking laws need to be reexamined and every opportunity should be seized to put legal roadblocks in the way of the arsonist. The results of these studies need to be converted to legislative initiatives manuals and other written materials so that federal, state, and local legislators can be informed as to what would be effective.

## VI. COMMUNITY SYSTEMS (Figure 16)

Numerous model programs have been identified wherein community-wide systems are developed and implemented to combat and reduce arson. This part of the solution gets the entire community involved in doing something about a community-wide problem. The arson task force concept in Seattle, Washington resulted in dramatic reductions in arson losses in that city. In 1975, Seattle formed an arson task force which included representatives from the Mayor's office, prosecutor, city council, police, fire, insurance council, Chamber of Commerce, and others. This task force initiated programs to improve the investigative skills of the arson squad, arson prevention patrols by firefighters, school programs, insurance industry involvement, and to set up an arson data network. Since institution of the program in Seattle, loss from arson in buildings has dropped significantly. In 1974 the Seattle arson loss was \$3.26 million, in 1975 \$2.69 million, and in 1976 \$1.96 million.

The Arson Early Warning System used in Boston monitored various insurance and real estate data to actually predict where arsons were going to occur. This system is said to have played a major role in the indictment of thirty-three alleged members of an arson ring operating in that city.

Such successful community-wide models need to be thoroughly documented, researched and evaluated and made into transferable packages so that communities across the nation can learn about how they operate and implement them.

SUMMARY

In summary, the arson problem is a complex one and we do not know nearly as much about it as we need to know. The solutions to the problem are equally complex and we do not know all of the things which can be done and which will work. On the other hand we know something about the problem and we know some of the things which work.

Time will not permit me to discuss in detail what the NFPCA is trying to do about arson. Suffice it to say that "with limited resources" we are working on parts of the problem. Our Data Center is trying to develop a mature and reliable data system which will tell us more about the problem. Our Public Education Office is documenting a number of locally successful techniques such as the Los Angeles County Juvenile Fire Setter program and the Boston Early Warning System for transfer to other communities. Our National Fire Academy is conducting courses in arson detection and fire and arson investigation.

Perhaps the single most frustrating aspect of arson is the assumption of responsibility. As mentioned earlier, it is not only the police department's problem and it is not only the fire department's problem. Indeed, the most successful local programs have proven themselves where all facets of the community have assumed their part of the responsibility and pursued it vigorously.

Historically, the insurance industry has assumed extensive responsibility for having impact on fires in the United States, dating back to pre-1776. Back in the 1700's, insurance companies were going bankrupt from community-wide conflagrations. The first U.S. insurance company, The Friendly Society for the Mutual Insurance of Houses Against Fires of Charleston, South Carolina, was founded in 1735. It closed its doors in 1741, bankrupt from the 1740 fire which destroyed half of Charleston. As America grew, so did its need for fire protection and so did the need for fire insurance companies. By 1800 there were more than fifteen fire insurers. But staying in the fire insurance business in those days was difficult. The Chicago fire of 1871 burned out of control for two days and destroyed 17,430 buildings. The Boston fire of 1872 leveled 776 buildings. The Baltimore conflagration of 1873 added its toll and these three fires alone were responsible for the bankruptcy of more than seventy insurance companies.

These disasters led to improvements. In the late 1800's the National Board of Fire Underwriters was created by the insurance industry. In 1905 the National Board of Fire Underwriters published the first model building code which stands as the historical foundation for most state and local building codes in the nation. In addition, the industry produced the first and only municipal grading schedule for measuring community fire defenses. This schedule affects the quality and quantity of virtually all U.S. fire departments and is aimed at reducing the number of community-wide conflagrations of years past. This product of the insurance industry has dramatically reduced and practically eliminated community-wide conflagrations. The insurance industry



has given birth to a number of other major fire research, testing and information organizations including the National Fire Protection Association, the Underwriters Laboratories, Factory Mutual Laboratories, and the American Insurance Association. These industry accomplishments have served measurably in the birth and growth of the American fire prevention and control effort.

We are now facing some new and complex fire problems of great magnitude. Just as the insurance industry thwarted major community-wide fire problems of years past, we are seeing increased arson prevention and control action among insurance interests on the contemporary scene. I understand that the AIA Property Insurance Loss Register now has 80% industry participation. Insurance officials are heavily involved in statewide and community-wide arson task forces and anti-arson campaigns. Industry-wide efforts are underway on several fronts, including arson and insurance-related laws, regulations and practices, and education and training needs for insurance personnel.

The insurance industry is facing dilemmas. On the one hand you are under requirements to pay claims expeditiously; on the other hand you are under pressure to resist paying claims on suspicious fires. You may be subject to punitive damage judgments when you do resist paying claims.

You are under pressure to share your information with law enforcement authorities. On the other hand you are under legal constraints to preserve the "privacy" of information about your clients.

Indeed, there are many complex issues which must be solved if we are to reduce arson losses. From an optimistic point of view—we can take comfort in the fact that we are recognizing these problems, talking about them and trying to solve them.

From a pessimistic viewpoint, the picture is gloomy. Arson is a massive, complex problem. We don't understand it in detail and we have no reason to believe that anything we have done so far has caused a downtrend in nationwide arson losses.

Massive investments and forceful action will be required to have real impact on arson losses. Cooperative action must come from all sectors—public and private. We have successfully responded to critical fire problems in the past, and we can do it again.

Let us hope that future generations will look back upon us and see that we too have made effective contributions to the major fire problems of our day. As it was over a century ago, so it is now; it is the individual citizen—taxpayer—insurance policyholder—who pays the bill for our major fire problems. It is up to the leaders of government and industry to do something about it.

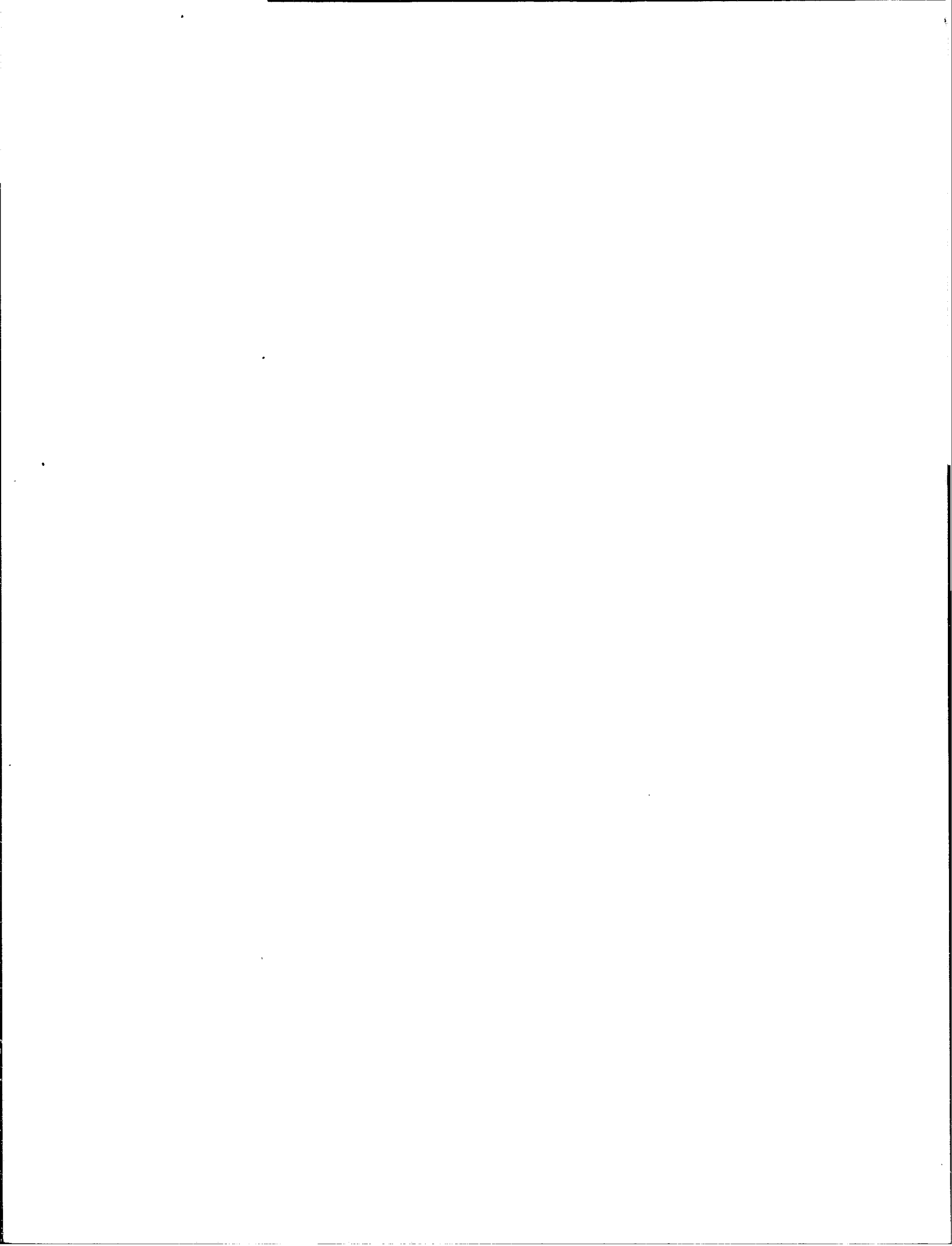
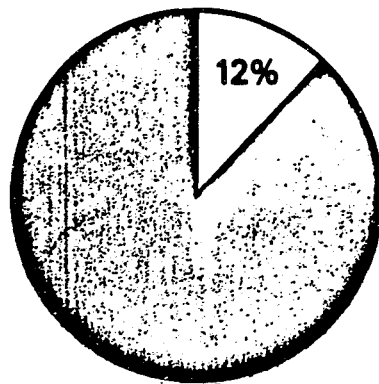


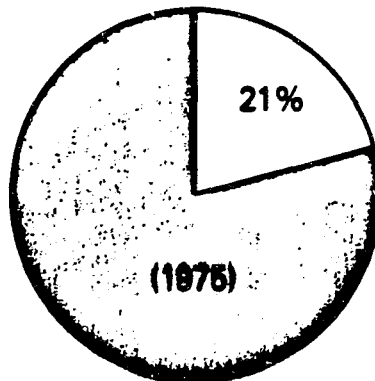
Figure 1

# THE ARSON PROBLEM -- OVERALL Various Estimates by Source

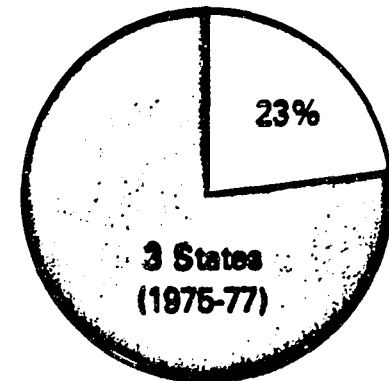
Arson: as a percent of all fires



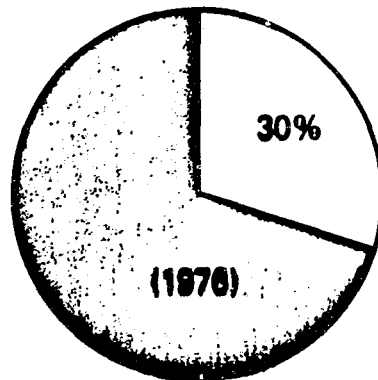
Alliance of American Insurers



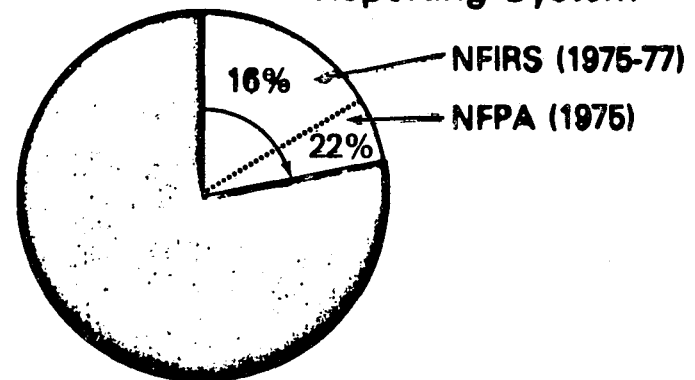
American Insurance Association



National Fire Incident Reporting System



Minneapolis, Minn.



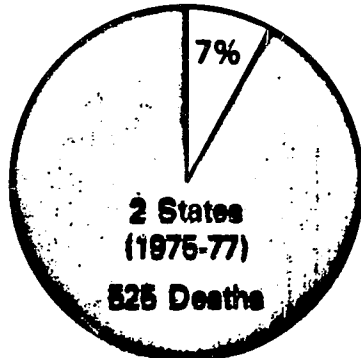
Building Fires Only

Figure 2

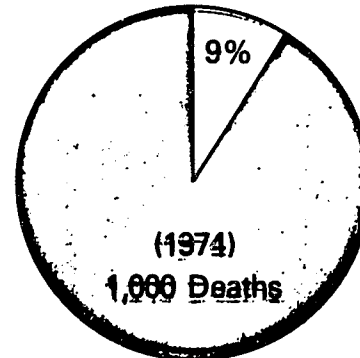
# THE ARSON PROBLEM -- OVERALL Various Estimates by Source

Arson deaths and injuries: as a percent of all deaths and injuries

## Deaths

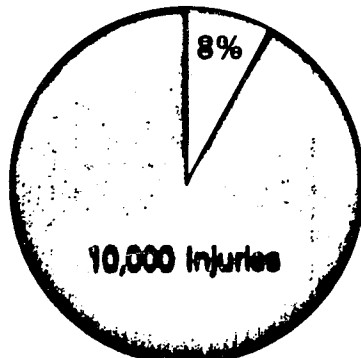


NFIRS

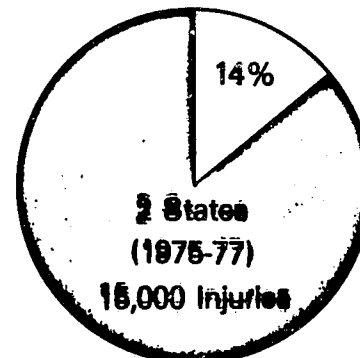


NFPA

## Injuries



Aerospace Corp.

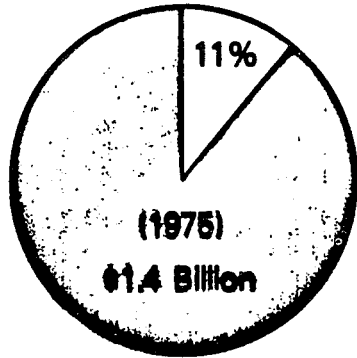


NFIRS

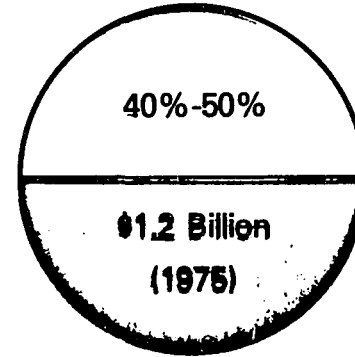
Figure 3

# THE ARSON PROBLEM -- OVERALL Various Estimates by Source

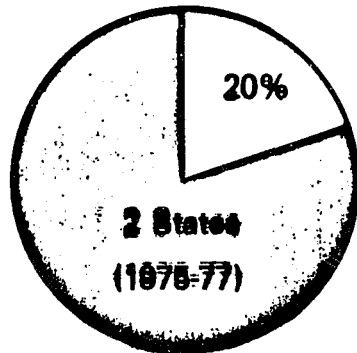
Arson dollar loss: as a percent of total dollar loss



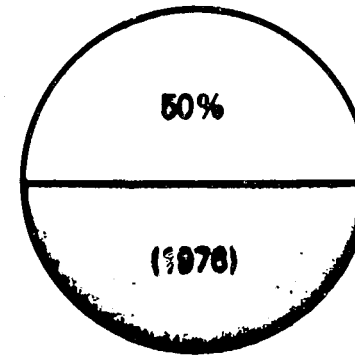
Insurance Information  
Institute



American Insurance Association &  
Alliance of American Insurers



NFIRS

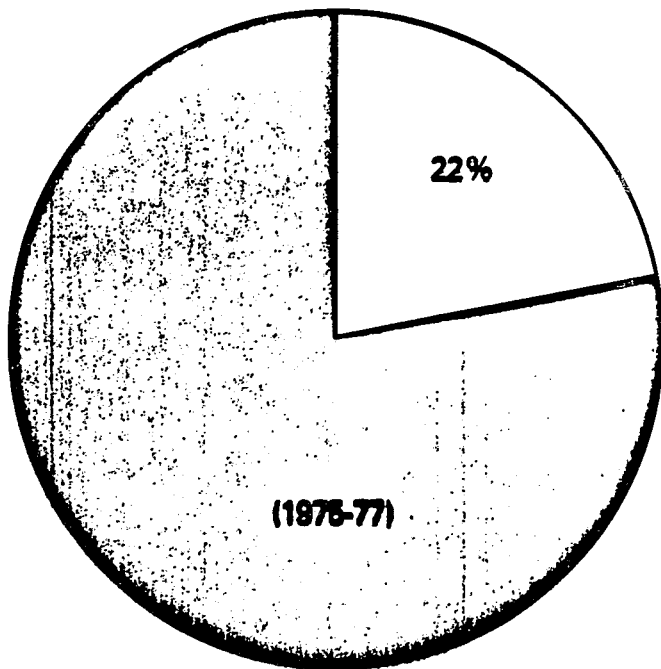


"Fire Chief" Magazine

Figure 4

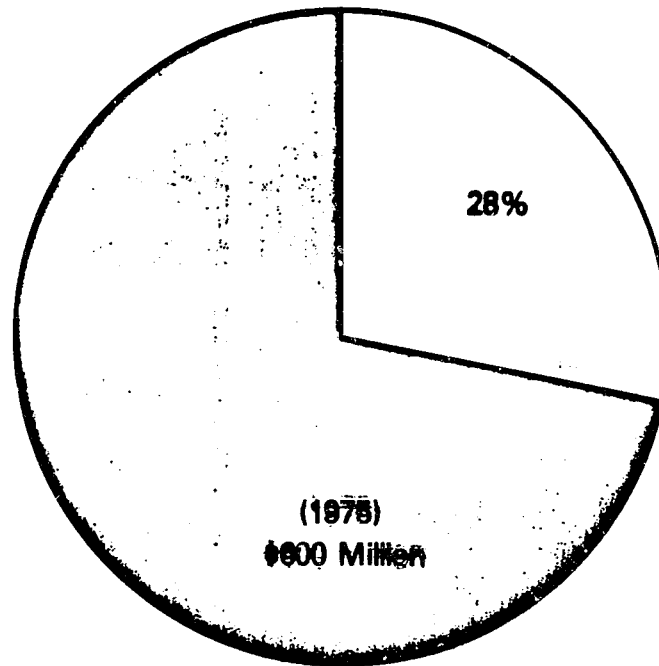
# THE ARSON PROBLEM -- OVERALL Various Estimates by Source

Dollar loss: as a percent of all fires



(1976-77)

NFIRS



(1978)

\$600 Million

NFPA

Building Fires Only

Figure 5

# ARSON CHARACTERISTICS - Where?

(All Data from NFIRS, 2 States, 1975-76)

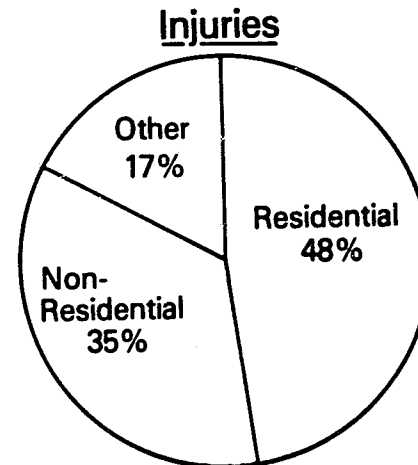
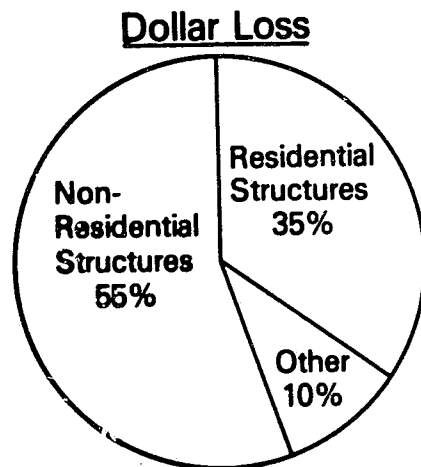
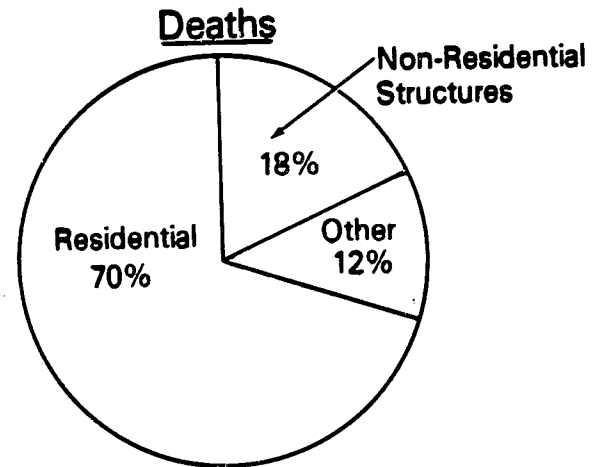
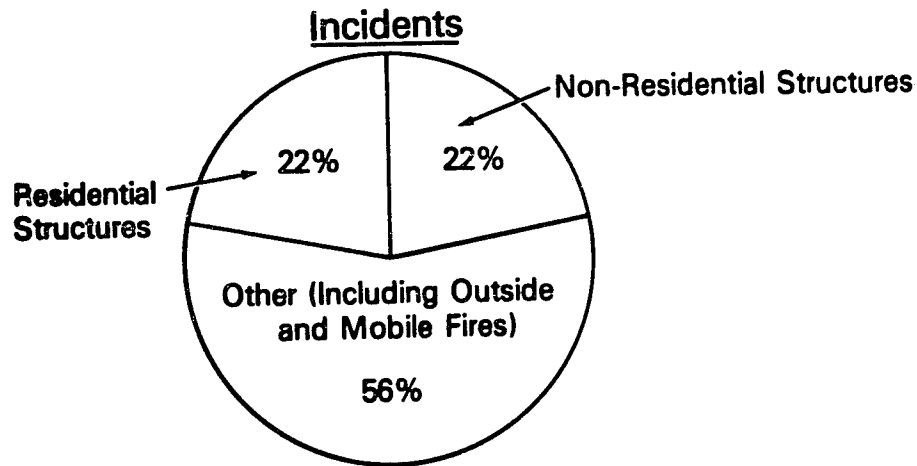
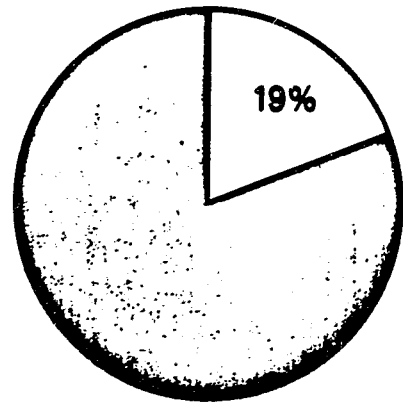




FIGURE 6

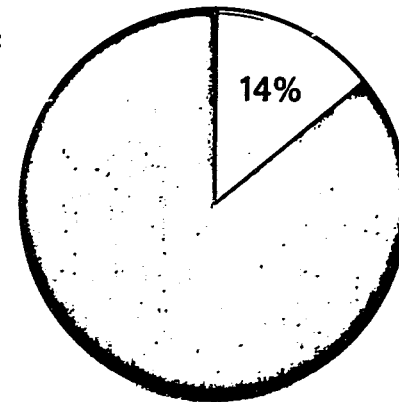
# ARSON CHARACTERISTICS - BY COMMUNITY SIZE

(Ohio: NFIRS, 1976)

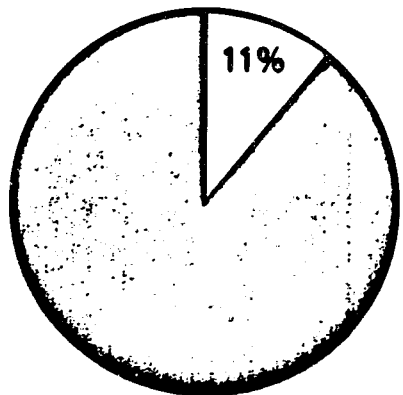


Big Cities (over 200,000 Persons)

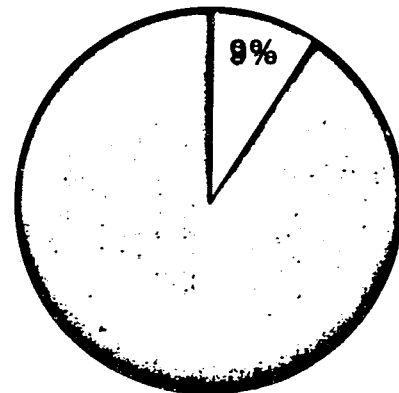
Arson: as percent of all fires



Medium Cities (50,000-200,000 Persons)



Small Cities (25,000-49,999 Persons)

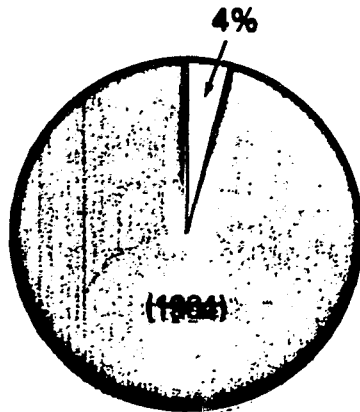


Towns and Rural (under 25,000 Persons)

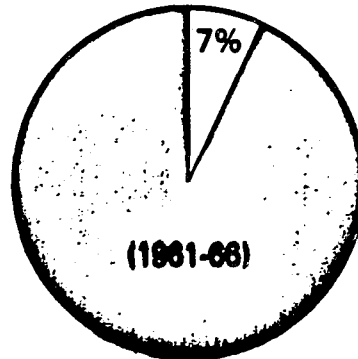
Figure 7

# ARSON CHARACTERISTICS Why?

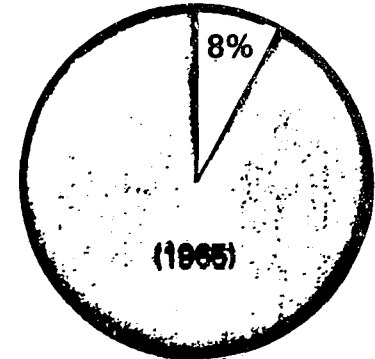
Fraud: percent of all arson fires



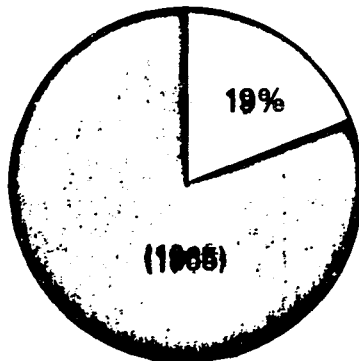
New York City



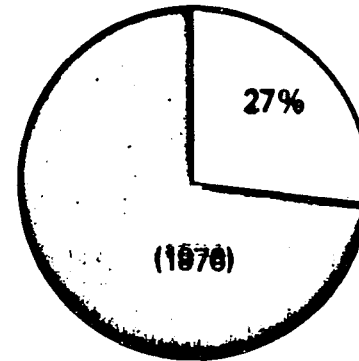
New York State



Detroit



AIA

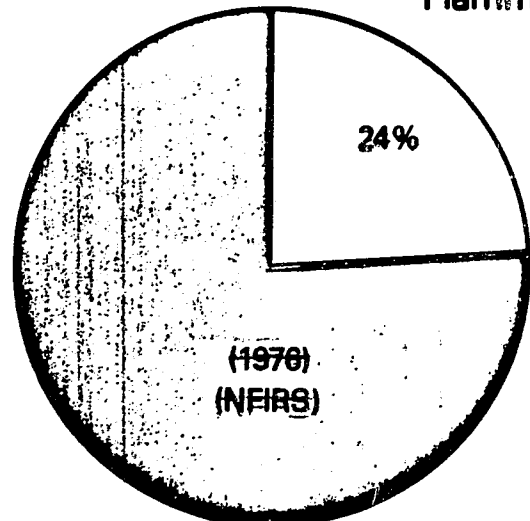


New Jersey

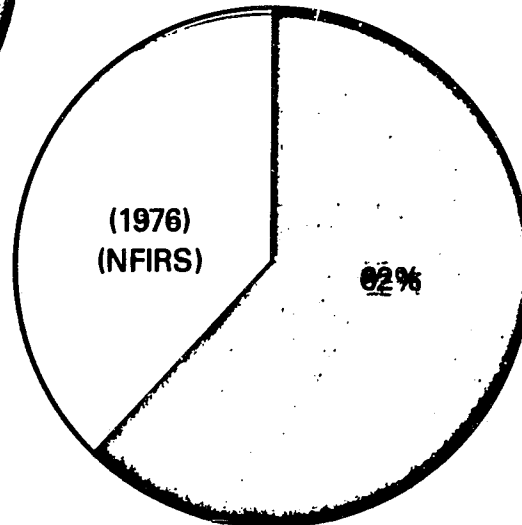
Figure 8

# ARSON FIRES

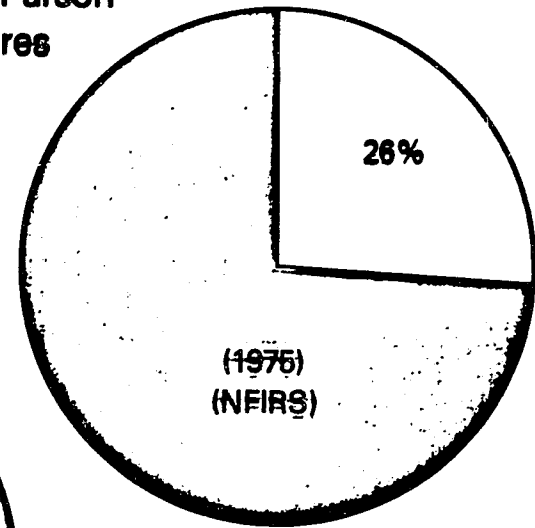
Flammable Liquids: as a percent of arson fires in structures



Ohio



New Jersey



California

DEFINE RESPONSIBILITIES

RECLASSIFY ARSON

MAKE PUBLIC AWARE

JOB-RELATED TRAINING

BETTER REPORTING AND DATA ANALYSIS

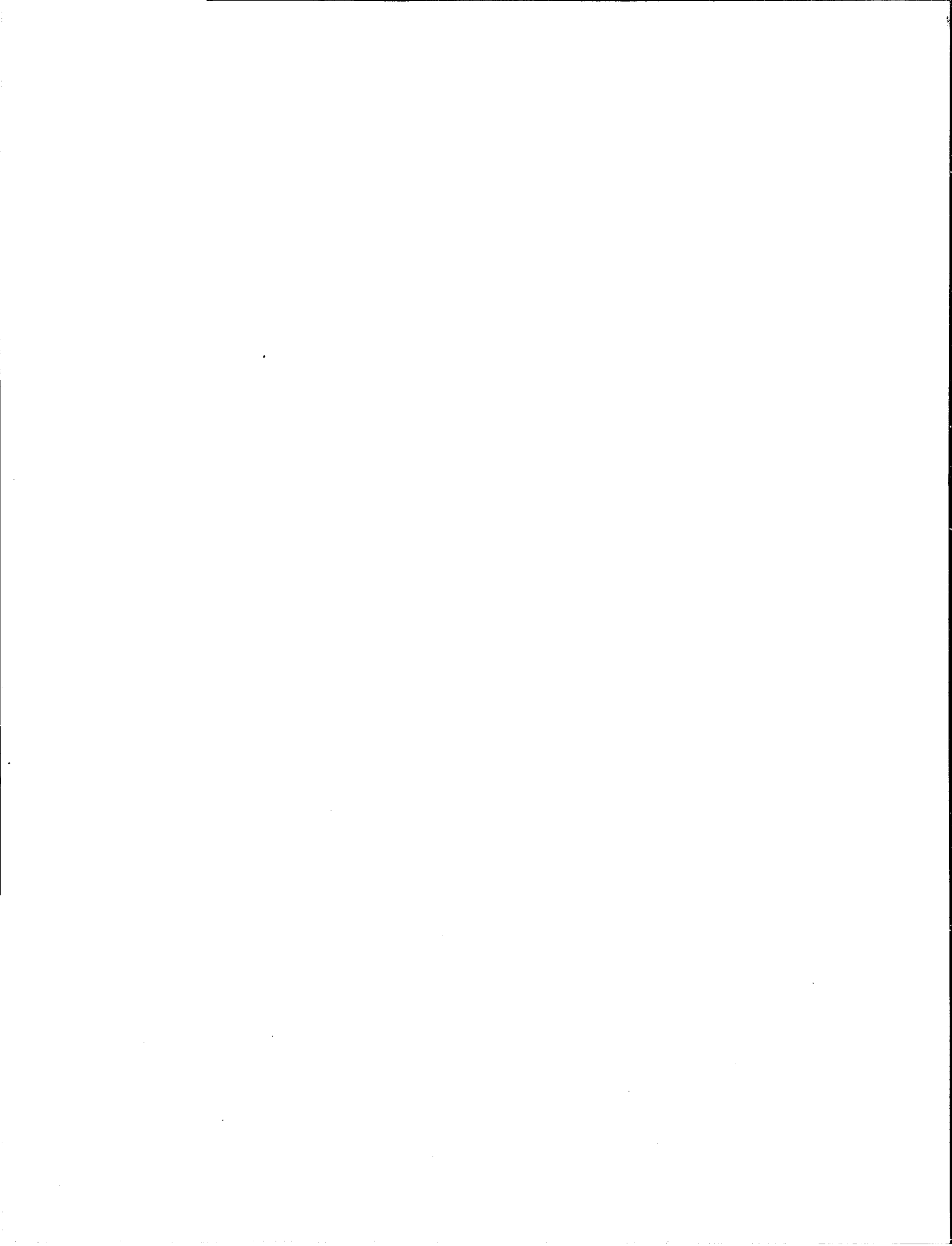
EFFECTIVE, UNIFORM LAWS

ADEQUATE SOURCES OF FUNDING

RESEARCH AND DEVELOPMENT FOR ARSON INVESTIGATION AND SOCIAL  
AND BEHAVIORAL CAUSES

UNIFORM ARSON TERMINOLOGY

FIGURE 9. NINE NEEDS AREAS IDENTIFIED AT THE NFPCA  
LEADERSHIP SEMINARS, 1976



- I. DATA
- II. INVESTIGATION AND ENFORCEMENT
- III. ATTITUDES AND BEHAVIOR
- IV. ECONOMICS
- V. LEGISLATION
- VI. COMMUNITY SYSTEMS

FIGURE 10. SIX PART ARSON PREVENTION AND CONTROL PROGRAM

FIGURE 11

I. DATA

A. STATISTICAL

1. CRIME STATISTICS
2. FIRE STATISTICS
3. IN-DEPTH INVESTIGATIONS
  - A. ARSON FIRES
  - B. FIRES OF UNKNOWN CAUSE
4. NATIONAL ESTIMATES

B. NON-STATISTICAL

1. SOURCES OF FUNDING
2. GLOSSARY OF ARSON TERMS
3. ARSON INFORMATION CENTER
4. ARSON INVESTIGATION JOURNAL

II. INVESTIGATION AND ENFORCEMENT

A. EDUCATION AND TRAINING

1. ARSON DETECTION COURSE
2. ARSON INVESTIGATION COURSE
3. ARSON SEMINARS
4. INVESTIGATOR CERTIFICATION

B. METHODS

1. FORENSIC LABORATORY METHODS
2. INVESTIGATIVE NEEDS ASSESSMENT
3. INVESTIGATIVE METHODS DEVELOPMENT
4. ARSON CONTROL SYSTEMS STUDY

C. TOOLS

1. ACCELERANT DETECTOR
2. FLAMMABILITY HANDBOOK
3. EQUIPMENT USERS GUIDE
4. LEGAL HANDBOOK
5. JURISDICTIONS & RESPONSIBILITIES SURVEY



III. ATTITUDES AND BEHAVIOR

A. GENERAL PUBLIC/MEDIA

1. NATIONAL ARSON CAMPAIGN
2. MODEL LOCAL PUBLIC EDUCATION PROGRAMS

B. FIRESETTER PSYCHOLOGY

1. JUVENILE FIRESETTER COUNSELING
2. TYPES OF FIRESETTERS
3. FIRESETTER PERCEPTION OF RISK

FIGURE 14

IV. ECONOMICS

A. HOUSING POLICY

1. RENT CONTROL
2. FEDERAL PROGRAMS
3. ECONOMIC PATTERNS

B. BANKING POLICY

1. REDLINING
2. MORTGAGE/COST RATIOS
3. BANKING REGULATION

C. INSURANCE POLICY

1. INSURANCE INDUSTRY ACTION PROGRAM
2. FAIR PLAN
3. PROPERTY REGISTER

D. COMMERCIAL POLICY

1. BANKRUPTCY
2. COMMERCIAL DEVELOPMENT

- V. LEGISLATION
  - A. REVIEW ARSON LAWS
  - B. MODEL ARSON LAWS
  - C. ANTI-FRAUD LEGISLATION
  - D. HOUSING AND BANKING LAWS
  - E. LEGISLATIVE INITIATIVES MANUALS
    - 1. FEDERAL
    - 2. STATE
    - 3. LOCAL

FIGURE 16

VI. COMMUNITY SYSTEMS

A. COMMUNITY ACTION

1. ARSON EARLY WARNING
2. COMMUNITY REVITALIZATION

B. ADMINISTRATION

1. WELFARE POLICY
2. MODEL URBAN ARSON PROGRAMS
3. ARSON TASK FORCE

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