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# VERDICT: GUILTY OF BURNING

## What prosecutors should know about arson

Arson is belatedly being recognized as one of our nation's most serious crimes. It's probably our most expensive crime against property. Direct property damage from arson runs into billions of dollars each year. And indirect costs—such things as lost property tax revenue and higher insurance premiums—push the dollar toll still higher. Arson also is a crime against people. Firefighters and others sometimes lose their lives because of it; many people lose their property—or their jobs, if their place of employment is the arsonist's target. In some cities, arson has destroyed whole neighborhoods and torn apart the social fabric of the community.

Yet most arsonists pay no penalty for their deeds. It's estimated that only 10 percent of all arson cases are "cleared" by arrest—and that only one percent of all arsonists are convicted of the crime. (A few others are institutionalized for psychiatric treatment as an alternative to conviction.) Why?

There are many reasons. Many firefighters recognize only the most obvious evidence of arson—the strong odor of gasoline in a fire-gutted building, for example—and write off many deliberately-set fires as either accidental or of "unknown" origin. Police officers resist getting involved in arson cases, contending arson is strictly the fire department's responsibility. Some insurance companies are too quick to pay fire claims when an investigation would have shown the fire was set by the property owner to collect on his insurance. State arson investigators do the best they can, but often there aren't enough of them to check on all the suspicious fires; their state government doesn't take arson seriously enough to provide adequate funds for investigation.

### Prosecutors share blame

Prosecuting attorneys must share the blame. Many of them are reluctant to file arson charges and try arson cases. Not knowing much more about fire than the average layman, they may be unaware that a fire investigator can reconstruct the cause, origin and path of a fire from what appears to be just rubble. No doubt the erroneous but

widely held and often repeated belief that "all the evidence is burned up in the fire" continues to chill a prosecutor's fervor for taking on arson.

As a rule, law schools teach general principles of criminal law and justice and don't dwell on specifics of individual crimes. The sheer volume of defendants charged with burglary, theft, rape and other crimes causes fledgling prosecutors to learn by experience how to prove each such offense. Arson, however, is so seldom charged that an attorney could complete a career as a prosecutor without being exposed to more than a few such cases. Those who do try a few arson cases often are dubbed "experts"—further deepening the impression that arson cases are so tough that only "experts" can handle them.

You, the prosecutor, won't become an arson expert simply by reading this booklet. Much more study and some first-hand experience will be needed before you feel confident in prosecuting arson cases. The booklet is a basic primer on arson: how people set fires, why they do it, how evidence of arson is detected, and how specific persons are linked to the crime. It also includes some tips from experienced arson prosecutors on how to prepare your case and how to present it in court. The booklet is designed to spark your interest in arson, to encourage you to learn more about it so that you'll be more effective in prosecuting those who commit this heinous crime.

## **1. First signs that point to arson**

**I**magine for a moment that you're a firefighter on your way to a fire. As you approach the scene, you notice a car speeding away in the opposite direction. You note the license number of that car, because if the fire was set, that could be the arsonist behind the wheel.

This is an example of how a firefighter must keep his eyes and ears open (even while actually fighting the fire) for any signs indicating the fire may have been set. Here are some other things that should be on his mind at this stage:

Are the premises unoccupied? Are doors and windows locked, or is entry to a door obstructed by a barrier? Any signs of forcible entry? Are the window blinds pulled, or are windows otherwise covered to obstruct the outside view into the building? "Yes" answers to any of these questions could indicate arson.

## Analyze smoke, flames

What is the type, color and odor of the smoke and flames? These can indicate whether gasoline, kerosene, turpentine or another accelerant (material that spreads and intensifies fires) was used. Was there an explosion? Are there two or more separate fires burning, and does the fire appear to be spreading unusually fast? Again, these are arson indicators.

In what direction is the fire spreading? Most fires spread vertically until they are blocked by some obstacle; the flames then mushroom out horizontally, "looking" for some way around or through the obstruction. This horizontal spread normally is slow. If it is fast, extra ventilation may have been provided, or wall surfaces may have been treated with a flammable substance—signs of arson.

Is there any spectator in the crowd who also has been seen at several other recent fires? Or how about one who goes out of his way to "help" the firefighters, or asks a lot of questions about the fire? Either of these types could be a pyromaniac—a mentally unbalanced person who sets fires for the pleasure of watching them burn.

## 2. Where. . .and how. . .did it start?

**O**nce the fire is out, the firefighter's task is to begin examining what's left of the building for physical evidence that may indicate how and where the blaze began. In some places, state or local arson investigators would be brought in at this point, in others, firefighters would wait until they came across definite physical signs of a suspicious fire before calling the investigators. This also is the point at which you, the prosecutor, should get involved in the case—but you probably won't be unless you've made it clear to the firefighters and investigators that you want to be notified early of any possible arson jobs. It's essential that you establish lines of communication with these people and let them know you're interested so that they'll call you in the early stages of their investigation. The reason is that you may be able to advise them on the type of evidence needed to build a case and on how to avoid costly mistakes that could get your case thrown out of court on a legal technicality.

A good example of why the prosecutor should get involved early may be seen in what usually happens after the fire is out. The firefighters begin poking around in the ruins for anything that might pin-

point where the fire started. If they leave the scene and come back the next day, a 1978 U.S. Supreme Court decision indicates they may need a warrant to resume their search. Most experienced investigators would know that, but a firefighter inexperienced in detecting arson might not. You, as a prosecutor who knows about this decision and other laws on search and seizure of evidence, could advise him of the possible consequences of leaving the scene before the examination of physical evidence is completed. You also could advise him on whether the law allows the posting of guards to keep unauthorized persons off the premises while investigators are away.

### Point of origin

Now let's look at how firefighters and/or investigators determine where the fire started—the point of origin. This is usually found by studying patterns of charring—the ways in which wood-based materials turn to charcoal while burning. Generally, the lowest point of burning and the deepest, most severe char area indicate the point of origin. “Lowest point” does not mean the first floor vs. the second floor or basement area, but the point of burning in any particular room closest to the floor. (Fire generally burns up, not down.)

The point of origin can be a clue to possible arson. For example, if two or more distinct points of origin are found, that means two or more separate fires—an indication of deliberate setting. Also, did the fire start in a place where fires don't normally start—in a closet, perhaps, or in the middle of a large room, away from furniture or other objects? (If the building has been destroyed, you'll need the help of the owner or tenant in reconstructing through diagrams what was located where.)

Once the point of origin is known, the next step is to determine how the fire started—the cause. The investigator cannot initially assume the fire was arson. He must first investigate all possible accidental or natural (“act of God” type) causes; only after all such causes have been eliminated can he proceed on the theory that arson occurred. This is an important legal point; many courts have held that this elimination of accidental causes is a firm basis for an arson charge. If the investigator is put on the witness stand, defense counsel is sure to ask him whether he checked possible causes other than arson. An admission that he didn't would substantially weaken your case.

## Common causes

Some of the more common accidental or natural causes of fire fall in the following categories:

- The electric system. Fuses in which pennies have been inserted; broken or rotted insulation; overloading of circuits; defective switches or fixtures; improperly installed wiring.

- Electrical appliances and equipment. Defective units, overheated irons, light bulbs covered by paper shades.

- Gas. Leaks in pipes or defective stoves or heating unit.

- Painting equipment. Carelessness with paint, paint rags, linseed oil, turpentine, other flammable materials.

- Heating units. Overheated stoves or steam pipes; clothing being dried too close to the fireplaces or open flames; faulty chimneys or flues; explosions from kerosene stoves; space heaters overturned by pets.

- Sunlight. Concentration of sun's rays on bubbles in glass window panes, convex shaving mirrors, odd-shaped bottles.

- Lightning.

- Children playing with matches.

- Smoking. Careless disposal of cigars, cigarettes, pipe ashes; falling asleep while smoking in bed or chair.

When the investigator has ruled out all possible accidental or natural causes of the fire, he then is ready to look for positive evidence of arson (other than those signs he may have observed during the fire or in determining the point of origin). This is where his knowledge of fire-setting mechanisms comes into play.

An arsonist may use the simplest of methods, a match and some paper; or he may use elaborate mechanical or chemical means to start his fire and keep it going. A fire-setting mechanism consists of an ignition device, possibly a timing mechanism; one or more "plants"—newspapers, excelsior, wood shavings, or other materials—to feed the initial flame; and often "trailers" to spread the fire—sometimes from plant to plant.

## Favorite tools

Trailers are often used along with gasoline, kerosene and other fluid accelerants—favorite tools of the arsonist. Rags, newspapers, rope or toilet paper soaked with gasoline are examples of trailers. . . or gasoline by itself may be used. Solid materials may leave residue. The

investigator may be able to trace gasoline and other fluid materials from the point of spillage to the lowest point they reach. Often unburned quantities of the fluid may be found in rooms below the fire, in cellars, or in the foundation. Sometimes fluids form a pool and burn toward the center of it, leaving a distinctive mark on the floor.

Here are some other fire-setting mechanisms, and clues they may leave:

- Matches, often used with timing mechanisms to delay the fire so the arsonist has a chance to get away and establish an alibi. Examples are matches attached to lighted cigarettes or hooked to the ringing mechanism in a telephone. Look for unburned or partially burned matches at the fire's point of origin.

- Candles, another delaying device, usually used with containers of easily combustible materials. They leave a deposit of wax, sometimes soaked into the wood of a floor or found in a pool at the low point of a floor or table top.

- Chemicals. An example would be slow-leaking rubber receptacles filled with water and phosphorus; when the water drains below the level of phosphorus, the chemical ignites on contact with air. Sometimes chemicals that ignite on contact with water--from a thunder shower or flushing toilet, for example--are used. Residue or a distinctive odor are clues.

- Leaking gas, as from a stove in a tightly-sealed room. This, of course, leaves an odor.

- Electrical systems. An ignition device may be hooked to a doorbell or telephone. An open heater is placed near curtains. There is deliberate overheating of an iron or overloading of a circuit. Generally, some trace of the ignition device will be found.

- Mechanical devices. Limited only by the arsonist's imagination. Alarm clocks wired to some fire-setting device were once a popular tool. Normally, most of the machinery won't burn and will be left over as evidence.

### Something missing?

Sometimes what is missing from the fire scene is an even better sign of arson than what is there. Does it appear that much of the building's contents--especially furniture, clothing, valuable and prized items and pets--was removed prior to the fire? Are the refrigerator and freezer empty? If there is an outbuilding untouched by the blaze, the investigator looks inside it--he may find the missing items, indicating the owner or tenant knew there was going to be a fire.

Any physical evidence found must be carefully documented and preserved. For example, if a piece of debris contains gasoline, it should be put in an air-tight container for later analysis. The label should note who found it, where (exact location in building), the date and time, and any witnesses present. Access to the evidence should be limited so that if necessary, you can prove in court that there were no opportunities for tampering with it.

Photographs should be taken, preferably by a professional photographer who knows what types of photos would be admissible in court. But even a mediocre photo taken by an amateur is better than none at all.

### 3. Motives and suspects

**W**hy do people set fire to buildings? For a variety of reasons—both “rational” and irrational. As a prosecutor, it isn’t always essential for you to establish a motive to charge someone with arson and obtain a conviction. If the evidence conclusively points to one suspect, it may not be necessary to show that he had a motive for setting the fire; it may be sufficient to show that he did, in fact, set it, regardless of what his reasons might have been. But it is often helpful to establish a motive. . . . partly as an aid in the investigation, partly because many juries are more likely to convict a suspected arsonist if a motive can be shown.

When the arsonist stands to gain something from the fire, his motive could be said to be rational. It could be something tangible, such as money—a homeowner or business owner burns his own property to collect on the insurance, or perhaps he burns someone else’s property with financial gain in mind. Or what the arsonist wants could be intangible: revenge, attainment of a goal or support of a cause (fires resulting from labor trouble, racial or religious strife); concealment of another criminal act, such as murder or burglary; intimidation aimed at producing some desired action by another person; or a desire to get credit for reporting a fire, so that the arsonist can get a job as a security guard or get a bonus if he already is a guard.

Other arson motives are irrational: there seemingly is no logical reason for the fire; the arsonist stands to gain nothing. Examples would include fires set by juveniles or vandals out of boredom or by pyromaniacs for the pleasure of watching a building burn. Occasionally, a motive is a combination of rational and irrational, as when a kid with a grudge against his teacher sets fire to the school.



## Insurance fraud signs

If financial gain through insurance fraud--burning for profit--is the motive, you'd almost certainly want to establish that in court. Any number of facts or circumstances may point to insurance fraud as a motive, but here are some of the most frequent signs:

--The business owner is unable to meet certain financial obligations: mortgage payments, taxes, rent, wages, bills, insurance premiums.

--Owner no longer wants the property and can't sell it.

--Poor business conditions in general. Problems with merchandise: inventory too high, seasonal business at an end, orders unexpectedly cancelled. Desire to move from a certain location.

--Property is grossly overinsured, or insurance on it has recently been substantially increased.

--Homeowner has financial problems, needs money to pay hospital bills, attorney's fees (perhaps because of a divorce), other large bills.

--Homeowner has a history of fires in other places he has lived.

Sometimes the person whose property is insured is innocent of any wrongdoing, but someone else stands to gain financially from the burning of it. For example: A competitor wants to put the property owner out of business; a contractor wants to boost his own business; a tenant wants to break an undesirable lease.

Spite fires may be related to the arsonist's job--arising in the midst of a strike, or because someone is angry with a former boss who fired him. Or they could relate to his personal life--jealousy over a love rival, for example. Arson for racial, religious or political reasons may be an outgrowth of a riot or other disturbance. Perhaps a careful sifting of the fire rubble reveals another crime--anything from murder to attempted destruction of records to conceal embezzlement.

## No rational motive?

Where no rational motive is apparent, the investigator may suspect the fire was set by a pyromaniac or perhaps by a juvenile. How and where it was set may provide clues. If it was set in part of a building accessible to the public, that's typical of a pyromaniac or juvenile; he wants to make a quick entry and a fast exit. Also, if the arson plant was simple--a few twists of newspaper or some rubbish ignited with a match--it probably wasn't devised by someone with a rational

motive; the preparations would have been more elaborate. And as noted earlier, a pyromaniac sometimes is conspicuous by his presence and actions at fire scenes.

To establish possible motives and develop suspects, the investigator must interview people who might be expected to have some knowledge about the fire and how it started. Besides firefighters, here are the most common categories of people interviewed and the types of questions the investigator would ask:

- Person who discovered the fire (sometimes the building's owner). Can he account for his actions just prior to discovery of the fire? Who else was there at the time?

- Owner and tenants of building, if different from owner. Who else besides them had keys to the building? The investigator would try to draw out from them as much general information as he can about themselves and, if commercial property burned, their business.

- Neighbors. Did they see anyone around the fire or leaving the area? What do they know about the owner or tenant? Has anything unusual, such as marital problems, been happening at the house recently?

- Business associates and competitors (if it was a business fire). Had the owner been having financial or other business-related problems lately?

- Insurance claim adjusters and agents. What do they know about the insured person? Had he had prior fire losses? Did he carry insurance with another agent or company as well?

- Coroner, if death occurred in the fire. Could the fire have been set to cover up a homicide? Or could the deceased person have been accidentally killed in a fire he set himself?

- Employer and fellow employees of suspect, once you develop one. Was he in trouble at work, or at home?

- News reporters who covered fire. Did they notice anything unusual?

In addition to interviewing, another important investigative method is inspection of printed records, both public and private. Court house records will be examined to verify title to the property and check for liens, judgments, chattel mortgages (mortgages on personal property) and any recent change in ownership. Police department records will be checked to see if the suspect has a criminal record. As a prosecutor, you should be able to advise the investigator on what access he has to private records in your jurisdiction. Some possibilities: newspaper files (for general information about the

suspect); the building owner's mortgage file at the bank or savings and loan association (to see if he was behind in his payments), and credit bureaus (to see if the suspect has financial problems).

### Legal pitfalls

An experienced arson investigator probably knows the common legal pitfalls he must avoid in questioning suspects. But you should make sure he understands these points:

-- If the investigator isn't sure the person he's talking to is a suspect, the person should be interviewed as a witness rather than a suspect. This way it won't be necessary to advise the witness of his rights unless he later becomes a definite suspect. But if solid evidence initially points to this person as a logical suspect, the wisest course is to advise him of his rights immediately and ask him to sign a form indicating this has been done.

-- If a polygraph test is being considered, the investigator should check with you before giving it. Although results of such a test are seldom admissible in court, you may be able to advise the investigator on how to frame questions so that the test will be of maximum usefulness.

-- Statements taken from a suspect should be in writing or on tape because oral, non-recorded statements are subject to change.

As in any other kind of criminal case, you'll eventually have to decide whether there is enough evidence to justify arson charges against one or more suspects. You must show that the suspect had the opportunity to set the fire and that evidence links him to it. Unless someone actually saw him set the fire, the evidence is likely to be circumstantial rather than direct.

## 4. The trial

**S**ince each arson case is different, it would be impossible to offer detailed guidelines on how to prosecute a defendant charged with arson. Your background as a prosecutor of other types of criminal cases, plus the knowledge you've gained through this booklet, from working with investigators and through other sources, give you a solid basis for presenting an effective case. But here are some general guidelines from experienced arson prosecutors that may be helpful to you:

--Witnesses, particularly those who have never been on a witness stand before, must be prepared for courtroom testimony. Firefighters may be skilled in putting out fires and observing things that may point to how the fire started, but most of them aren't skilled at articulating their thoughts. The same thing is true of some arson investigators, although they tend to become more convincing speakers as they gain courtroom experience. You must help them choose the words they'll use to describe what they saw and what conclusions they may have reached. You must also coach them on how to respond to cross-examination, on ploys the defense attorney might use to attempt to trip them up and destroy their credibility as witnesses. In some cases, you may need to advise them on how to dress in court. Fire investigators don't normally work in a suit, white shirt and tie, but they tend to make a better impression on the jury if they are dressed this way rather than in their usual work clothes. Firefighters, on the other hand, should appear in uniform.

### 'Expert' witnesses

--When you plan to present a witness as an expert in his field--an arson investigator, a laboratory technician who analyzes samples for evidence of arson, or whatever--make a list of his qualifications as an expert before the trial. Then elicit these qualifications from him as part of his testimony. It's crucial to establish this type of witness as an expert so that his key testimony is credible to the jury. If the expert is from another state, brief him on the rules of evidence in your jurisdiction. You also should prepare him for some of the special cross-examination tactics that defense attorneys reserve for expert witnesses. (One favorite tactic: Defense counsel will ask the investigator when was the last time he read a book on the field in which he claims to be an expert. It's likely that most of the investigator's

knowledge has been gained "on the job" rather than through reading, so this could make him vulnerable if he isn't prepared for this question.)

--At some point in the trial (possibly during your opening statement), make sure the jury understands what is meant by circumstantial evidence and stress that it isn't necessarily inferior to direct evidence; in fact (you point out), it may be superior. (This is assuming that your case is built on circumstantial evidence, as is usually true with arson.) Provide some easily-understood example of circumstantial evidence pointing to one person. Point out that proof by circumstantial evidence usually requires a large number of witnesses, each testifying to some small portion of the overall picture, and that many of them would have to commit perjury to produce an unwarranted conviction. Contrast that with direct evidence: A single witness telling a lie could persuade the jury to convict the wrong person.

--Make good use of photographs, video tapes and other visual aids. Charts, maps, diagrams and the like should be large enough to be seen easily from a short distance by the judge and jury. Large visual aids are far more impressive than sketches on standard-size pieces of paper.

### Use of experiments

--Sometimes prosecutors introduce into evidence the results of experiments designed to duplicate what happened at the fire scene--how the fire followed a trailer from one room to another, for example. If you plan to use results of such experiments, make sure they were conducted under conditions similar to those at the time of the fire. If they weren't (and defense counsel is sure to challenge you on this point), the results may not be admissible as evidence.

--In your summation, emphasize two things: (1) the conclusiveness of the evidence that shows the defendant is guilty beyond reasonable doubt; and (2) the qualifications and caliber of your expert witnesses. You may want to prepare a list of circumstances pointing to the defendant's guilt and possibly put them on a blackboard. You might challenge defense counsel to rebut these circumstances; if he doesn't, note that later. You might also mention that the defense didn't offer any expert witnesses. But beware of pressing this point; it may be that no expert would agree to testify for the defense, and defense counsel might use this fact as a bid for sympathy from the jury.

## 5. How to learn more about arson

**T**his booklet, other reading material on arson and your contacts with fire investigators should give you a good start on becoming an effective prosecutor of arson cases. But there also are other ways to broaden your knowledge of arson and acquire information that may prove useful in court.

In many states, arson seminars are offered at public colleges and universities; they are sometimes sponsored by the state's arson investigation agency, the state chapter of the International Association of Arson Investigators, or the state advisory committee on arson prevention. In some places, colleges and universities offer courses in fire science that relate to arson. Your state's arson investigation agency—often the fire marshal's office—and its largest public university are probably the best sources of information on what arson investigation training is available and where and when to get it.

Active participation in your state's arson prevention committee may also be helpful to you. These committees—usually made up of firefighters, police officers, insurance people, fire investigators, prosecutors and others—provide an opportunity for contact with others who are concerned about the arson problem and for sharing information so that everyone can fight arson more effectively.

As a prosecutor, you can play a key role in removing criminal fire-setters from society and bringing the serious crime of arson under control. But you must first accept the challenge offered by arson and make up your mind that, difficult to prove or not, you're going to get involved in fighting it.

This booklet is published by the Illinois Advisory Committee on Arson Prevention. For additional copies, please write to the committee at P.O. Box 614, Bloomington, IL 61701.





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