

# Understanding the Hazard



## Arson and Other Incendiary Fires

### Understanding the Hazard

This series of publications is designed to help you understand the everyday hazards present at your company's facilities. For more information on how you can better understand the risks your business and operations face every day, contact your FM Global engineer.

#### UTH topic categories:

Construction

Equipment

**Fire Protection**

**Human Factor**

Natural Hazards

Process Hazards

### Hazard or Risk?

Certain properties tend to be targeted by arsonists. A sophisticated arsonist will strike in a way and at a location where your facility is most vulnerable. Protective measures will help neutralize the arson threat and limit potential damage from an intentionally set fire.

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### The Hazard

The threat of arson or incendiary fires at an industrial or commercial property is a major concern. Arson is defined as "the malicious or fraudulent burning of property, such as a building." Incendiary is defined as "involving a deliberate burning of property." Arson fires, which are intentionally set, usually are aimed at a particular property. Any location could be a potential target for an incendiary attack. However, some locations have a higher probability of experiencing an arson fire than others, and increased protection may be warranted.

Storage areas, vacant buildings and dock areas are a few examples of popular sites for industrial arson. Why? Few employees tend to be located in storage areas. Stacks of combustibles afford plenty of fuel for a fire and provide a place where an individual can hide from view when starting the fire. Vacant buildings offer the arsonist some of the same advantages as storage areas. Access to these buildings for juveniles or vandals is relatively easy. And, a visitor or outsider in either a storage area or vacant building is not likely to be challenged. Office and retail areas, on the other hand, may be less likely to be targeted by an arsonist because these areas tend to be occupied and are more heavily traveled. Nonetheless, it is important for managers at all types of facilities to be aware of the threat of arson to their property and take some basic precautions, especially if they sense their facility might be a target.

### Science of the Hazard

History has shown that certain groups of individuals are more likely to intentionally set fires. Current and former employees, competitors and customers, special interest social or political groups, security personnel and intruders are among those who may set industrial fires. Current and former employees are especially dangerous because they are familiar with facility layouts and may be able to freely move about the facility unchallenged. Employees also can use arson as a means to divert attention and cover up another crime, such as theft. Competitors can turn to arson to put a rival out of business or seriously disrupt production. Political groups can use arson as a means of sabotaging a facility. Security personnel may intentionally set and later "discover" a fire to demonstrate to management their value to the company. Intruders may commit arson to cover up another crime, such as burglary, or may just commit arson for the thrill of vandalism. This is often the motivation of juvenile arsonists.

## What You Can Do at Your Facility

### Now:

- Lock all sprinkler control valves larger than 1.5 in. (38 mm) with nonbreakable locks. Inspect valves on a regular basis.
- Continuously monitor all visitors. A sign-in and sign-out log or visitor badge program may help facilitate this.
- Repair or board over all broken or missing windows.
- Ensure all exterior doors are secured.
- Closely supervise all on-site security personnel.
- Limit access to areas containing flammable liquids that could be used as accelerants by an arsonist.
- Maintain good housekeeping by limiting excessive trash accumulation.

### Soon:

- Provide automatic sprinkler protection in all areas housing combustibles.
- Install a security intrusion alarm system. In addition to providing alarm contacts on doors, closed-circuit television (CCTV) or beam-type detectors may be warranted to protect the building's perimeter.
- Move all yard storage a safe distance away from buildings.
- If practical, fence and light the entire facility yard.
- Store all valuable drawings and records in fire-rated cabinets, vaults or safes.
- At larger properties, initiate a system of identification cards or badges to monitor employee access to the facility. Return cards or badges to management upon termination of employment.

Locations in economically depressed areas are more likely to experience an arson fire, as are locations in areas or neighborhoods that tend to experience a high incidence of vandalism. Everyone has seen run-down buildings with numerous missing or broken glass windows. This type of property is a prime target. Most arson losses occur during non-daylight hours, illustrating the need for additional security at night.

Another common target for an intentionally set fire is combustible yard storage due to the area's accessibility and the unlikely detection of intruders.

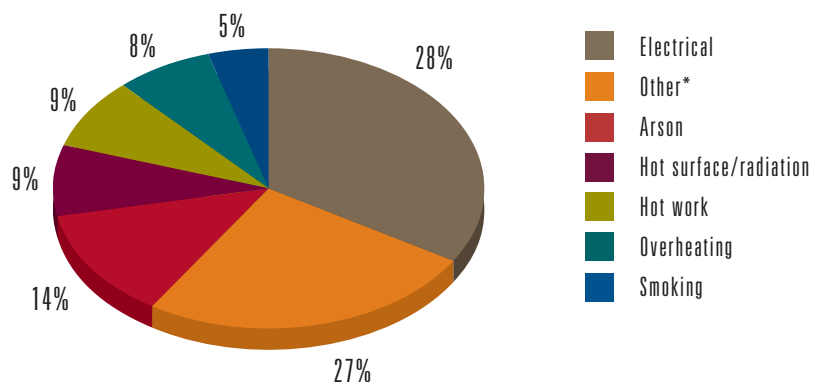
Facilities challenged by labor problems, such as layoffs, strikes or threatened strikes, also are particularly vulnerable. Within the facility, trash accumulations and electrical boxes are common ignition points. Fires originating in these areas often can be disguised, leading investigators to believe the fires were accidental. A sophisticated arsonist often will strike in a manner that will cause maximum damage to the targeted business. In these instances, key data centers and valuable records or drawings are likely targets. Among the most effective means of combating arson-inflicted damage is the provision of automatic sprinkler protection in all areas with combustibles. Of course, you must ensure this sprinkler protection remains in service at all times.

## Loss Experience

From 1988 to 2002, FM Global clients reported a total of 1,146 fire incidents related to arson, totaling approximately US\$970 million (indexed to 2002 dollars) in gross losses. This is an average gross loss of US\$846,000 per incident. A review of all fire losses that occurred during this period reveals arson represented 14 percent by number and 15 percent by dollar amount. Only fires of electrical origin accounted for a greater number of fire losses. The largest single FM Global arson gross fire loss recorded during this period was US\$102 million.

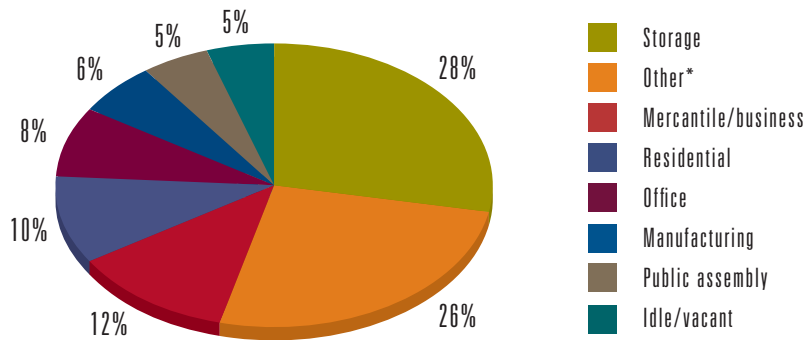
Incidents involving storage or warehousing businesses represent the greatest number of arson fire losses. A warehouse area houses a significant combustible load, as well as hiding places for an intruder, which a knowledgeable arsonist can exploit for maximum damage. Because warehouses often employ few workers and are not as heavily traveled as office or manufacturing areas, a visitor or unfamiliar individual may more likely go unchallenged upon entering a warehouse area than elsewhere in a facility.

Number of Fire Losses by Cause (Excluding Unknown)



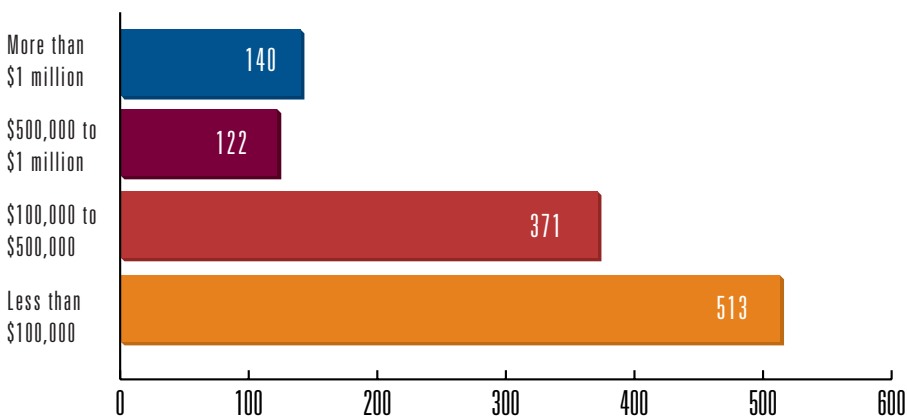
\*Other includes friction, spontaneous ignition, exposure, lightning, etc.  
Source: FM Global clients

### Arson Fire Incidents by Occupancy



\*Other includes hospitals, schools, buildings under construction, etc.

### Arson Fire Loss Amount (in US\$)



Source: FM Global clients

## But What About...

...the expense of replacing all broken windows? Is this something that absolutely needs to be done?

Broken and missing windows provide intruders ready access to the building, especially in idle or vacant facilities that may not be closely monitored. This easy point of access needs to be eliminated. If the cost of replacement windows is excessive, one less expensive alternative may be to simply board up the openings.

...the fact that I experienced an arson fire six months ago?

Is it likely for my facility to be a target again soon?

Experience indicates that, if an unsuccessful arson fire has occurred (one that is quickly extinguished or not of major proportions), then a repeat attempt is likely unless the perpetrator is caught. Arsonists usually have a motive and will return to try again if the initial attempt fails. Also, subsequent arson attempts often will be more successful because the attacker will have learned from his or her first failure. Therefore, after a fire of suspicious origin, a temporary increase in the level of protection and security is warranted. The likelihood of a repeat attempt is highest in the first few weeks following the initial arson attempt.

## FM Global Arson Grant Program

FM Global maintains a worldwide Arson Grant Program, established in 1976, to assist agencies in their efforts to prevent arson-related fires. The program is designed to provide seed money to assist in the development of arson prevention and control programs. Grants are awarded quarterly to fire services and related agencies, with funds earmarked for purchasing investigative tools and related equipment, training, and juvenile firesetter programs. Agencies apply for merit-based arson grants through their local FM Global office. Grant requests are reviewed by a local FM Global arson program coordinator, as well as by an FM Global grant review committee. For the FM Global office nearest you, visit our Web site at [www.fmglobal.com](http://www.fmglobal.com).

## Need More Information?

Ask your FM Global engineer about the following:

- Examples of fires caused by arson
- Specifics on addressing the hazard of arson at an idle, vacant, or strikebound facility (see Understanding the Hazard publication, *Idle, Vacant or Strikebound Facilities* [P0274])
- Guidelines on establishing a regular inspection program for all sprinkler control valves
- More information about the FM Global Arson Grant Program and application process

## Ordering Information

### For Understanding the Hazard

For additional copies of *Understanding the Hazard* publications, contact your FM Global engineer or client servicing team.

### For all other FM Global publications

All other FM Global brochures and educational materials can be found in the FM Global Property Loss Prevention Resource Catalog and ordered online at [www.fmglobal.com/store](http://www.fmglobal.com/store).

Or, for personal assistance worldwide, contact our U.S.-based customer services team:

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*...the fact that our company has been experiencing labor problems? Does this increase the likelihood of an intentional fire being set?*

When businesses are subject to extended strikes, layoffs or other labor problems, the likelihood of an arson fire is increased. When strikes or layoffs occur, it is vitally important to ensure that your emergency response team remains adequately staffed and trained. During this turbulent period, also be aware of the potential for a bomb threat, which is simply another form of arson. Law enforcement and fire service agencies are best able to deal with this problem and should be notified immediately upon receipt of a threat.

*...the importance of controlling visitor access to the facility? Is this critical?*

All visitors should furnish positive identification and sign some type of register or log when entering and leaving the facility. Security personnel should issue identification badges to visitors. Many organizations have policies that involve checking all packages carried by visitors. It is not unusual for an arsonist to pose as a contractor, claiming legitimate access to the facility. As such, all visitors should be escorted while on the premises. All facility personnel should be alert to strangers wandering around the property. Suspicious visitors should be reported to security personnel or to facility management.

*...the minor fires that tend to occur in the facility? Should these be investigated?*

All fires, even so-called minor fires, should be reported to management. All fires should be investigated, especially if they are of unknown or suspicious origin. Such an event may indicate the presence of an arsonist who will likely strike again. The arsonist's next attempt may be more successful and result in a major fire if he or she is not discovered and apprehended.

## Don't Become a Target Location



*Storage areas have some unique points of vulnerability to arson. The perpetrator usually doesn't need to bring his or her own accelerant because the storage generally is easy to ignite. With few employees to challenge an intruder, warehouses are attractive targets. The arsonist easily can find a concealed place among the storage to hide and commit the crime.*