SECTION 4 - FIRE & PEOPLE
UNIT 2 - ARSON

UNIT GOAL
To introduce the student to arson, what it is, types of fire setters, and means to determine the difference between accidental and arson fires.

UNIT OBJECTIVES
The student by the end of the semester shall:
- define the term arson
- list at least four [4] types of fire starters
- list four [4] indicators of an arson fire

GLOSSARY OF TERMS
Accelerant
Arson

INTRODUCTION
The losses due to arson are ever increasing. It is estimated that arson accounts for 14% to 20% of all structure fires, these estimates are considered conservative by many in fire protection. In order to curb this problem the fire protection community must accomplish several important tasks. First, we must train our investigators to better recognize the potential signs of arson. Second, have a better understanding of the types of firesetters that exist and what drives them to do what they do. Third, is to push for stronger laws regarding the crime of arson. And fourth, is to better analyze our fire losses in order to recognize those factors that lead to arson.

In this unit we will discuss the definitions of arson and incendiary fires, the types of fire setters and what to look for when doing an investigation that may show that it was arson.

ARSON
A basic definition of arson is "the intentional setting of a fire with the intent to damage or defraud". English common law (basis for our legal system) defines arson as "The wilful and malicious burning of a building or property"

Before a fire can be considered as arson <u>all</u> accidental causes must be eliminated. The evidence must show that the fire was intentionally set for a reason (fraud, revenge, spite, cover-up of another crime); under most laws there are two criteria that must be met for the fire to be arson
- that there has been the burning of the property in question
- that the burning was the result of a wilful criminal act

Arson is also known as

- intentional fires
- suspicious fires
- incendiary fires

MOTIVES FOR ARSON

Juveniles

One of the growing areas. Reasons for them setting fires can be curiosity & experimentation, or the same reasons for other motives, such as, spite fires, vandalism.

Revenge

Ths type accounts for 50% of all arson fires. These fire are set for personal or professional revenge. Usually the victim can provide information regarding the suspect. Usually involves personal property and is usually a spur of the moment thing and not planned out. Revenge fires in the home often have a history of domestic abuse that precedes the fire.

Pyromaniacs

This is more of a mental state or psychological disorder. True pyromaniacs are few in number. Some of the profiled characteristics are:

- pathological fire setter
- mostly male
- loner, introverted
- difficult relating to others
- can be heavy drinkers
- can have childhood history of cruelty to animals
- have irresistible urge to start fire (may be sexual gratification)

Personal Satisfaction

Would-be-hero recognition when they put out fire they started. They can also be can be revenge or spite (Happy Land Social Club, Stouffers Inn), Passion or some other stimulus can be the cause, such as, drinking, the excitement of evening hours. Irritation is the believed cause of their problem.

Concealment of a Crime

Arson is used to destroy evidence of another crime. Examples of this include:

- cover robbery
- cover a murder
- cover tax fraud or embezzelment.

Profit or Economic Gain

Monetary gain is usually the primary motivator. Use of flammable liquids and multiple fire are common. Examples of this include:

- owner collect on insurance (selling company to insurance company
- defrauding the insurance company
- competitors trying to drive someone out of business
- contractors looking for business
- expansion of nearby property

Extremism or Terrorism

Usually used as means of social protest against an individual or group. This can include governments, ethnic groups, religious groups, or facilities that pose a “threat” to their cause. The “Molotov Cocktail” is a very commonly used incendiary device. Identity of individual fire starter is usually hidden, but not uncommon for a group to claim responsibility.

Miscellaneous Reason

- Vandalism, fire set "just for kicks", malicious mischief, i.e., Devil Night in Detroit

INDICATORS OF AN ARSON FIRE

Multiple Points of Origin

Multiple fires are two or more separate, non-related, simultaneously burning fires. The investigator should search to uncover any additional fire sets or points of origin that may exist. In order to conclude that there are multiple fires, the investigator must determine that any "separate" fire was not the natural outgrowth of the initial fire. Fires in different rooms, or on different stories with no connecting fire, or separate fires inside and outside a building are examples of multiple fires. A search of the fire building and its surrounding areas should be conducted to determine whether there are multiple fires.

- apparent multiple fires can result through spread by:
- conduction, convection, or radiation
- flying brands
- direct flame impingement
- falling flaming materials (drop down), such as curtains
- fire spread through shafts, such as pipe chases or air
- conditioning ducts
- fire spread within wall or floor cavities within balloon construction
- overloaded electrical wiring
- utility system failures
- apparent multiple points of origin can also result from continued burning at remote parts of a building during fire suppression and overhaul, particularly when building collapse or partial building collapse is involved.
- confirmation of multiple fires is a compelling indication that the fire was incendiary.

Trailers - Incendiary Devices to Aid in the Spreading of Fires [See Figure]

After incendiary fires, when fuels have been intentionally distributed or trailed from one area to another, elongated patterns may be visible. Such fire patterns, known as trailers, can be found along floors to connect separate fire sets, or up stairways to move fires from one story or level within a structure to another. Fuels used for trailers may be ignitible liquids, solids, or combinations of these. Materials such as clothing, paper, straw, and ignitible liquids are often used. Remnants of solid materials frequently remain and should be collected and documented. Ignitible liquids may leave linear patterns, particularly when the fires are extinguished early. Radiant energy from the extension of flame or hot gases through corridors or up stairways can also produce linear patterns. As with suspected solid accelerants, samples of possible liquid accelerants should be collected and analyzed. Often, when the floor area is cleared of debris to examine damage, long, wide, straight patterns will be found showing areas of extensive heat damage, bounded on each side by undamaged or less damaged areas. These patterns have often been interpreted to be trailers. While this is possible, the presence of furniture, stock, counters, or storage may result in these linear patterns. These patterns may also result from fire impact on worn areas of floors and the floor coverings. Irregularly shaped objects on the floor, such as clothing or bedding, may provide protection to the floor resulting in patterns that may be inaccurately interpreted. For example, gasoline itself poured out to assist the fire is an accelerant. It is the deliberate use of the gasoline to spread the fire from one location to another that causes the stream of gasoline to be a trailer. Trailing gasoline from one room to another and up the staircase constitutes laying a trailer. Dousing a building with gasoline from cellar to rooftop or over a widespread area does not constitute laying a trailer, that is using an accelerant. So it can be seen that the fuel does not constitute a trailer, but rather the manner in

which the fuel or accelerant is used. This is similar to the use requirement in the definition of an accelerant. The burning action has no effect on whether or not there is a trailer. Gasoline, rags, or newspapers can all be used as trailers but they burn differently. The pattern that is left by a trailer is evidence of the trailer; the pattern is not the trailer. If an arsonist lays a trailer but is arrested prior to ignition, there is still a trailer.**[See Figure 2]**

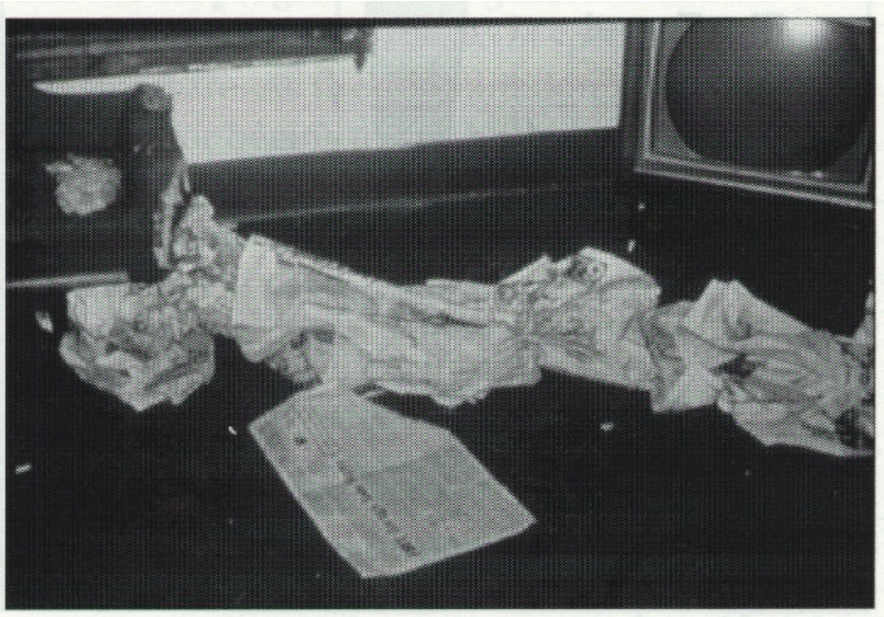

Figure 1 - Example of a Trailer

Figure 2 - Example of a Burn Pattern

Incendiary Devices [See Figure 3]
Incendiary device is a term used to describe a wide range of mechanisms used to initiate an incendiary fire. In some cases, the fire setter may have used more than one incendiary device. Frequently, remains of the fuel used will be found with the ignition device. If an incendiary fire is suspected, the investigator should search for other fire sets that may have burned out or failed to operate.

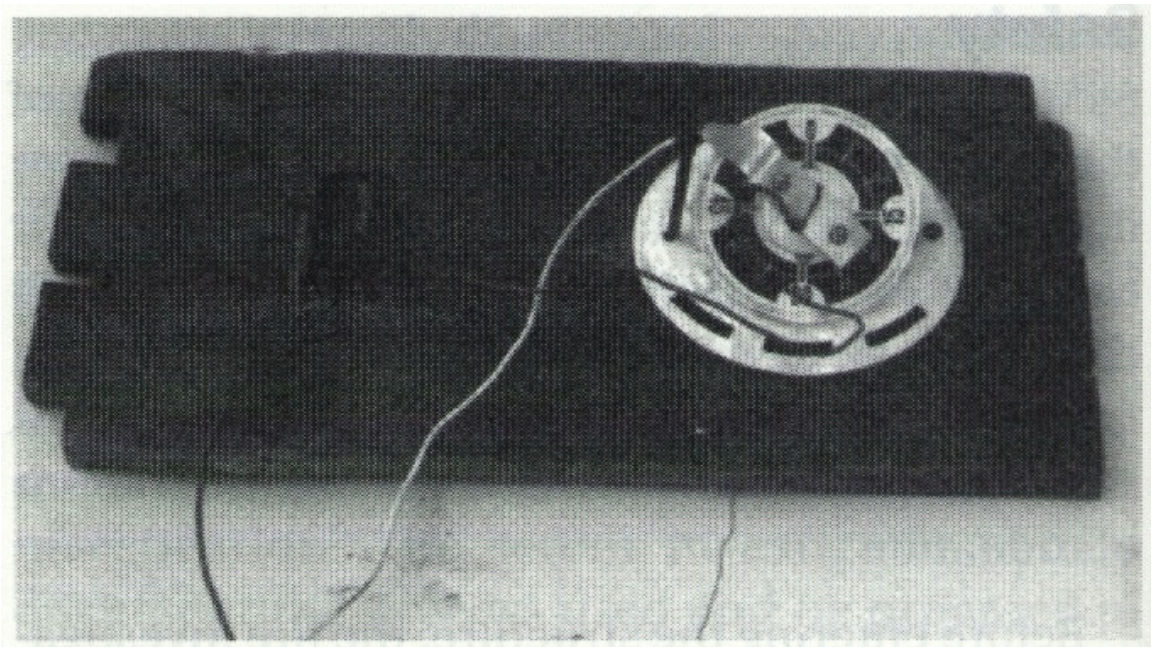

Figure 3 - Example of an Incendiary Device

Lack of Expected Fuel Load or Ignition Sources
When the fire damage at the origin is inconsistent with the expected low fire loads, limited rates of heat release, or limited potential-accidental ignition sources, the fire may be incendiary. An example of all three is an isolated burn at floor level in a large, empty room. Examples of limited fire load areas include corridors and stairways. Stairways, while usually having limited fire loads, may promote rapid fire spread by allowing flames or hot gases to travel vertically to other areas. This action may cause severe damage on exposed stairway surfaces. Additional examples of areas with limited potential-accidental ignition sources include closets, crawl spaces, and attics.

Unusual Fuel Load or Configuration
If the investigation reveals the presence of an unusually large fuel load in the area of origin, or a fuel load in the area of origin that either would normally not be expected in that area or would not be expected to be in the configuration it was found in, the fire may be incendiary. An example of an unusual configuration is where furniture, stock, or contents are deliberately stacked or piled in a configuration to encourage rapid or complete fire development. An example of an unusually large fuel load is where accumulations of trash, debris, or cardboard cartons are deliberately introduced into a room or space in order to encourage greater fire involvement.

Other Things to Consider
- presence of flammable liquids in area of orgin
- fire near service equipment and appliances

- removal of contents prior to the fire
- absence of “personal” items prior to the fire
- entry blocked or obstructed
- sabotage to structure or fire protection systems and devices
- open windows and exterior doors