

Criminal investigation term

Law



The Phases of Arson Investigation Eric Conway American Military Richardson
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Introduction

Fire occurs because of rapid oxidation of a substance within the exothermic chemical progression of combustion, and thus leading to release of light, heat, as well as diverse reaction products (William, 2003). The flame forms the visible part of fire, which can have different colors due to variation in intensity. In its universal form, fire causes physical damage resulting into burning. Fire is a vital process, which affects ecosystems in the world. Its positive impact includes maintaining diverse ecosystems as well as stimulating growth. Moreover, it is used for cooking, signaling, propulsion purposes and generating heat.

Despite the benefits of fire, the disadvantages include atmospheric pollution, hazard to living organisms, soil erosion, and water contamination among others. Fire can obliterate one's house and the entire belongings within an hour or even destroy a large forest and thus, reducing it to a pile of cinders as well as charred wood. Owing to the magnitude of the effects of a fire, there is a need for a thorough analysis and enlightenment on the causes of such destructive fires, the burn indicators, fire setting, and mechanisms of initiating fire, establishing the motives of the arsonists as well as means of locating the suspects.

Origin and manner by which the fire started

One of the first steps in an arson investigation is to determine not only where the fire originated but also how it started. The importance of pin pointing the origin of the fire allows investigators to more accurately determine whether

foul play was involved or if the fire simply started by accident. A certain level of heat and some type of combustible material, which will combust at a given temperature, is needed to create a fire (Swanson, Chamelin, Territo, & Taylor, 2009). If the fire is accidental it could have started for many reasons to include a faulty electrical system, negligent smokers who fall asleep or leave their cigarette burning unattended, and the ever popular space heaters that are normally electrically powered will create enough heat or short out, thus creating a fire.

In addition, an accidental fire could occur due to spontaneous combustion. Take for example, linseed oil. This oil is normally purchased as a widely used stain and sealant and can be quite combustible. If in a concentrated form, on something as basic as a rag that was used for staining some furniture, the evaporation caused by the oxidation of the oil creates enough heat to spontaneously combust (William, 2003). This could happen over the course of a couple hours, days, or even weeks if the user was unaware of proper disposal of any excess oil and oil contaminated material. The familiarity of where and how the fire started in conjunction with burn indicators will aid to further an arson investigation.

Burn indicators

The next step in the investigation of arson involves what is known as burn indicators. These indicators are of the most significance as they direct the investigator as to how the fire was established together with starting points. Alligatoring is a term used to identify wood that has been charred and resembles the skin of an alligator. The larger ripples would indicate a high temperature and consequently the smaller ripples would point toward a lower level of heat (Swanson, et al, 2009). It is also the measurements of this

charring that directs the investigator to sites where the most destruction occurred, thus allowing him or her to obtain further clues as to what was used to facilitate the fire.

Another indicator is spalling. It occurs when masonry materials such as concrete fractures explodes from the extreme temperatures (Dwaikat & Kodur, 2010). This type of evidence could then guide the investigator to search for a possible accelerant. For example, an accelerant like gasoline could have been used to start the main source of the burn by pouring a stream of gasoline from that point to a safer point, so he or she is not harmed from the fire. Some arsonist might even create a fire in the center of the room, and due to unfamiliarity with spalling; evidence has now been created rather than concealed if in case another point of origin was the cause of the fire. At this stage of the investigation, it is appropriate to begin the investigation of mechanisms and accelerants most commonly used in arson.

Fire setting and related Mechanisms to initiate the fire

An arsonist has a multitude of incendiary apparatuses at his or her disposal. What an incendiary device does is inherently initiate the desired conflagration of a building such as a home or business and even timberlands. Matches and lighters are very common as they are uncomplicated, cheap, and easy to find. However, mercury thermostat is slightly more complicated yet incredibly easy to use. The tube containing the mercury has multiple wires with a different purpose that simply transfer electricity from one point to the next. The special coil of metal that mercury is fastened to fluctuates with the temperature raising or lowering the tube of mercury as it expands or contracts. Succinctly, when the tube of mercury is exposed to the set

temperature point, the electrical current provided at one end of the tube passes through the mercury, sparking at the connection point, and thus igniting a gas-filled room.

Occasionally, there can be an incendiary device and accelerant all in one like the linseed oil mentioned above. The chemical itself is an accelerant and can self-ignite under the right conditions. Other accelerants an investigator should watch out for is gasoline, lighter fluid, acetone, various types of alcohol among others. At times, in order to save time and obtain additional confirmation of the accelerant used, there is the need to bring in specially trained canines. However, the challenge for the investigator is not over. Now he or she must furnish possible motives for the arson.

Motives for arsonists

Motives for arson are vast and can sometimes be difficult to determine as an investigator if the said investigator is unaware of the various reasons that exist. Some basics are excitement or vandalism. People who set fires for these reasons can be young deviants or adults. However, habitual offenders would be known as pyromaniacs who have an irresistible urge to commit this type of crime due to their fascination with fire (Brophy, 1949). Others have malicious reasons such as revenge. This should be one of the first questions conveyed to the victim of arson, as it is usually a personal vendetta that is known by the victim.

Many people also commit arson for profit. For example, the owner of a company might decide to set his property on fire in case he or she anticipates financial losses due to certain reasons and believes that the amount of money the insuring agency will compensate him or her for a total loss is worth the risk. This is also known as insurance fraud. Lastly is

extremism. Some reasons for extremism are racial or religious hatred, which would lead to the burning of an ecclesiastical or burning laboratories used for animal testing by people who believe it is cruelty to animals. Nevertheless, there are multitudes of motives to incinerate buildings, other types of property, and even people or animals. After procuring a motive or narrowing it down to just a few, the investigator will be able to further investigation by searching for suspects.

Locating the suspect

The first step in locating a suspect is by interviewing. Neighbors, friends of the victims, a passerby who stopped to view the fire, city, or construction workers in the area, among others are all great witnesses. These people need to be asked if they saw anything suspicious before the fire like entry of an unknown person into the building and even after the fire. Some arsonists may like to watch their work making them stand out just a little differently than other spectators. Every witness should be thoroughly interviewed by the investigator as to what was seen, heard, maybe a particular smell, sequence of events, and time scales if possible (Swanson, et al, 2009).

Other extremely important witnesses include firefighters and medical examiners. These people are considered experts in their profession since they have been specially trained and conduct such particular type of work on a daily basis. For instance, a firefighter has immense education and experience as to how fires are started and what they are started with in order to understand how they can be extinguished. Finally, after completion of interviewing process, the investigator can close in on a single or multiple suspects who meet the criteria of committing the crime. However, this does not automatically mean that the interviewing process ends. Further

interviews may be conducted if the suspects are a dead end. At this point, the main aim is to prove the suspect had committed the crime of arson and most importantly obtain a confession subsequently making for an easier conviction.

Conclusion

Therefore, for a criminal investigator to establish any information about fire outbreak, he or she must have sufficient information and knowledge about fire. For instance, he or she must be in a position to establish the origin and the means, by which the fire started, establish burn indicators, be able to establish motives of the arsonist as well as methods of locating the perpetrators of the fire. In case an investigator has such knowledge, his or her job will be made easier thus facilitating the arrest and prosecution of arsonists who cause death, misery, and loss of property globally.

References

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