Course Learning Outcomes for Unit V

Upon completion of this unit, students should be able to:

4. Define the functions of a fire prevention bureau.

Reading Assignment

Chapter 9:  
Fire Prevention Through Investigation

Chapter 14:  
Community Risk Reduction

Unit Lesson

Fire Prevention Through Investigation

The Reason for Fire Investigation

Why bother to investigate the aftermath of a fire? Why rummage through the debris, ashes, soot, and water-soaked contents? Our answer to these questions, as well as others, can be summed up in a single word: Prevention! In order to “learn” how to prevent fire, we must first “understand” fire, specifically the cause and origin of fires.

Hopefully in the final analysis of every fire investigation, we have gained sufficient information and knowledge that can then be incorporated into our fire prevention methodologies in our respective communities. Additionally, the findings of our investigation will determine the cause. In the wide-world of fire investigation, there are four categories into which the cause of fires are placed:

1. accidental (children playing with matches, overloaded circuit);
2. undetermined (lack of evidence leading one of the other three causes);
3. incendiary (intentional, fire bombs, arson); and
4. natural (lightning strike, deposition of material) (NFPA, 2011).

In essence, the post-fire investigation should be looked upon as a mandate, not an option. In many communities, the duty of fire investigation is likely to fall upon the Fire Prevention Official. There may also be others involved, such as the Fire Chief, group or platoon chief officers who conducted suppression operations, local police agency, and/or state officials, such as Fire Marshall or State Police.

If you are assigned to the Fire Prevention office, it is required that you know who must be called upon in order to properly conduct a post-fire investigation. This is especially true in the aftermath of a fatal fire. Fires involving the death of humans may at first appear “accidental;” however, upon closer investigation, the cause has often been found to be incendiary. Never underestimate the cause, and never “write off” the cause as accidental electrical in order to close the case.

The Investigation Process

Diamantes (2016) points out that, “the functions involved in the investigation of fires include interviews of witnesses; follow-up investigation, including interviews and examination of records and test results; securing
and serving search and arrest warrants; and court preparation and testimony” (p. 152). This is a “short-list” of required functions that we will discover.

Your investigation will begin at the very heart of the incident: the fire scene. You should, when suppression crews have completed their operations, interview suppression, EMS, and fire-ground officers. Ask them what they saw when first arriving on scene. Their recollection of what they saw and heard will build the foundation for your investigation.

Before entering the scene, ensure that the structure or area is safe from any potential life-threatening hazards, such as collapse, toxic wastes, and rubble. The entire scene must be properly secured, typically on the outer perimeter, where bright yellow “CAUTION” or “DO NOT CROSS” scene tape has been established.

Once you are able to enter the scene safely, you will begin a methodical and careful investigation, which will include gathering evidence, taking photographs, and writing detailed information of your findings in a dedicated case notebook. At all times, bear in mind that paramount to a full-thorough investigation is preservation of scene, protection of evidence, and chain-of-custody of evidence (Diamantes, 2016).

Be as thorough as necessary. DO NOT cut corners or make arbitrary conclusions. Be factual and truthful. DO NOT embellish or distort your findings for sake of time-saving or because other agencies are “tapping their feet,” anxious to leave the scene. What you find, or more importantly what you do not find, during your investigation will not support your case, should you need to proceed to the courts.

Never forget that a courtroom can be brutal, especially if you are attempting to prove arson (intentional/incendiary) because a lack of physical evidence will be the fuel used by the opposition to destroy your case. There is nothing more embarrassing to the position of fire investigator or prevention officer than having a glib lawyer for the defense tear you down in front of a courtroom or jury. As the old adage goes, “leave no stone unturned!” In the past, even the smallest piece of evidence has proved arson, thus sending the arsonist to prison!

**Community Risk Reduction**

One of the benefits of a full, complete, and thorough investigation of every fire is the outcome leading directly to prevention methods that ultimately facilitates reduction of risk within the community. Of course, investigation results alone do not contribute to risk reduction, as we will see in Unit VI (Fire Prevention Through Public Education, Awareness, and Forum).

The fire service of today is well beyond the, “put the wet stuff on the red stuff,” as there are other diverse areas of responsibility in addition to suppression and EMS functions. Today’s fire service must project a positive image to the community, and one such method is undertaken through community risk identification, analysis, and implementation.

**Identifying Risk in the Community**

Diamantes (2016) offers us two forms of risk that are most likely to affect the community: human-created risks and naturally occurring risks. As their names denote, each form of risk identifies its original source: human and nature. Human-created risks are, by definition, the result of human actions or inactions. Among them are: hazardous material risks associated with industrial occupancies, transportation (rail, air, water, and roadway) incidents, and commercial occupancies (restaurants, hotels, and malls). Some human-created risks are accidental; however, others are intentional. Intentional risks include bombings, arson, and terrorism (Diamantes, 2016).

Naturally occurring risks are, by definition, the result of acts of nature in the form of hurricane, floods, earthquakes, and tornados (Diamantes, 2016, p. 226). Very few regions on Earth are free of natural risks, which should come as no surprise, since the Earth is surrounded by an ever-changing environment.

**Demographic and Risk Profiles**

Two courses offered by the National Fire Academy focus on community risk reduction: RO200 (Leadership Strategies for Community Risk Reduction), and RO274 (Executive Analysis of Community Risk Reduction). These courses respectively provide students with a full and complete understanding of how two “sister”
courses interact and how they are applied to the students’ community (Diamantes, 2016). The latter is required to be taken by all students enrolled in the Executive Fire Officer Program (EFOP).

Developing respective profiles for each demographic and risk requires research and analysis of the community and its environment as well as its surrounding communities. Keep in mind that an industrial high-risk incident occurring in an adjacent community could pose a serious threat to your own community if environmental conditions progress to a point where negative effects are blown across town lines.

**Community Risk Analysis**

Demographic risk profile development should include:

1. housing and location,
2. people, and
3. economic information.

Tracking residential, single, and multiple resident dwellings provides a picture of where residential clusters are located, what types of occupancies are included, and overall condition of occupancies.

Identifying the people of the community provides data by age groups, gender groups, education levels, and density of populated areas. Additionally data must be gathered identifying occupancies housing persons with disabilities. Finally, the overall economic data will provide income levels, areas of poverty, and economic projections for the community as a whole (Diamantes, 2016). Once all pertinent data has been researched and gathered, it must be analyzed in order to establish both short- and long-range risk reduction and preparedness. Many government-based websites offer “ready-made” data analysis, which can be sorted out by state, county, and city/town. There is a variety of data and statistical analysis software available; however, the one most commonly found on computers is the spreadsheet/worksheet software, which is known by various names such as, Microsoft® Excel, Microsoft® Works, and Lotus®, to name a few.

If you are assigned the task of data research, gathering, and analysis, keep in mind that large complex spreadsheets can be very intimidating and confusing to those who are not familiar with such software. As the old adage goes, “Keep it Simple, Silly (KISS)” Do not overwhelm yourself or your audience.

Remember the goal is to identify the risk and educate emergency service personnel and the public. Community risk reduction can only be accomplished by combining these actions.

**References**


**Suggested Reading**

Joseph Wambaugh, a retired Los Angeles police detective, has written hundreds of law enforcement-related books; however, his fire-related book about Fire Captain, John Orr, is a must-read for all fire investigators.


As a fire prevention officer, you may want to familiarize yourself with NFPA 912 – Guide for Fire and Explosion Investigations 2011 Edition. This book is a “must have” in your toolbox of knowledge.