By MICHAEL L. DONAHUE

Fire Investigators Anonymous

A 12-Step Program For Improving Health and Safety

The safety and health of fire investigators working at fire scenes are often taken for granted, since many incorrectly assume that by the time they arrive at a fire scene, the potential hazards are eliminated or diminished to the point that they are no longer a concern. The widespread use of synthetic building materials and furnishings manufactured from plastics, however, has greatly increased the amounts and kinds of toxic byproducts of combustion that may result in injury, illness and death. Many investigators fail to recognize that post-fire suppression activities are inherently dangerous since many of the products formed by incomplete combustion may be more hazardous than when they are "free-burning."

Photos by Michael L. Donahue

Virtually all fire scenes contain numerous toxic byproducts of combustion, several of which are known or suspected carcinogens. Fire investigators may be inadvertently exposed to numerous toxins that may cause serious illnesses days, months or years after exposure.

Several studies of firefighter occupational safety and health hazards associated with overhaul operations conducted in Canada, the United Kingdom, New Zealand and the United States since the early 1990s have documented that virtually all fire scenes contain numerous toxic byproducts of combustion, several of which are known or suspected human carcinogens, such as acrolein, acrylonitrile, benzene, formaldehyde and vinyl chloride. The health and safety of investigators working at fire scenes are among the most neglected areas of training throughout the fire investigation community and few organizations consider it a priority. Regardless of the scientific and technological advances that have occurred in fire investigation over the past decade, investigating fires to determine their origin and cause still requires investigators to work in potentially hazardous environments. Working in these environments for extended periods without wearing appropriate personal protective clothing and equipment and following strict safety policies and procedures may result in injury, illness and death.

All of the safety and health-related funding, research and studies completed over the past decade supported by organizations such as the International Association of Fire Fighters (IAFF) and the U.S. Fire Administration (USFA) have primarily focused on the safety and health hazards faced by firefighters associated with firefighting and overhaul operations. However, although investigators typically begin their investigation into the origin and cause of fires after fire suppression operations are completed, they face many of the same safety and health hazards encountered by firefighters. Investigators may be inadvertently exposed to numerous insidious toxicological hazards that may cause serious adverse health effects several days, months or years after exposure. For this reason, it is critical that all organizations

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Safety is both an attitude and a behavior that all personnel throughout the organization must embrace to maintain a safe and healthy workplace.

representing the interests of fire investigators make the commitment to fund and maintain effective occupational safety and health programs a top priority.

The ability of investigators to safely investigate fires depends on several factors:

- A commitment by individuals to change their attitudes and practice safe behaviors at scenes
- An investigator's level of knowledge, training and expertise
- The use of proper personal protective equipment (PPE)
- The availability of required resources to safely and effectively manage an emergency incident
- The development, implementation and adherence to a structured system of strict safety standard operating policies and procedures
- A comprehensive occupational safety and health program that incorporates mandatory medical surveillance

The Fire Investigator's 12-Step Program

Before an organization can begin to develop an effective fire investigator occupational safety and health program, all personnel in the organization, especially investigators, need to have the proper "safety mindset." This is an important first step in the identification, recognition and modification of attitudes and behaviors that are potentially detrimental to one's safety and health. Safety is both an attitude and a behavior, which is one reason why some of the most progressive organizations with the best health and safety training programs, the largest safety/health budgets and the lowest incidence of injuries, illnesses and fatalities still experience accidents. Individual behavior is one of the most difficult human factors to control that is often a contributor in on-the-job accidents and injuries. The proper attitude plus the proper actions will yield positive "safe" behavior. This formula for success must be embraced, implemented and continuously reinforced organization-wide to be successful in maintaining a safe and healthy working environment.

The following 12 steps are intended as a guideline to assist agency administrators/managers and investigators in changing their behaviors to improve their overall safety and health and to effect positive organizational and operational changes to reduce the potential for future injury, exposure and chronic occupational illnesses and diseases.

1. Admit organizational and behavioral changes are needed. Personnel must want to change their attitudes and behavior. The mindset of not wanting to change because "it's the way things have always been done" has to be set aside. Investigators must be open to the possibility that there may be a better (and safer) way of doing things to accomplish their objectives. The practice of making excuses and erecting roadblocks to change must end if organizations are to achieve success from a safety and health perspective. Many injuries and deaths to investigators can be prevented if individuals possess the proper mindset. All investigators must have the willingness, motivation and desire to adopt a new way of investigating incidents to reduce the potential for injury, exposure and death.

2. Seek assistance and support. Investigators and managers should reach out to sources of information and assistance that can provide knowledge, expertise and experience to better manage and change beliefs. Training, education and technology can help increase your level of safety; however, there are limitations that only the

proper attitude, beliefs and actions can overcome. Don't be ignorant and selfish; be willing to ask for help and share information with others at all times.

3. Turn the problem around. A conscious decision to turn bad behaviors, practices and traditions into positive beliefs and safe behaviors must be made by everyone. Successful and effective safety behaviors must be identified, implemented and complied with by all members of the organization, regardless of their position or title. Constantly ask yourself, "What is more important than my personal safety and the safety of those I work with? Don't wait for management to care or act or for an accident to occur; be proactive and cause positive changes to be made that prevent injuries, illnesses and fatalities. With respect to one's health and safety, it is always better to be proactive rather than reactive.

4. Take a critical look at your safety sense. Investigators should continuously analyze their beliefs, attitudes and actions with respect to their safety and health. Investigators should not be embarrassed or shy about acknowledging practices that are stupid from a safety or health standpoint, and they should resist the temptation to succumb to peer pressure. When all else fails, a little common sense can often mean the difference between life and death. Although others may think you look stupid wearing a respirator while conducting a fire scene examination, at least you stand a much better chance of enjoying retirement by not lying in a hospital bed attached to a breathing machine. Close calls or acts of stupidity make good stories to tell around the kitchen table as long as you remain alive to tell them.

5. Admit wrongs to others. Management and employees must make a serious commitment to confess their "safety sins." Personnel should not be afraid to share information concerning professional miscalculations or errors in judgment. The ability of others to learn from your mistakes is critical and is a key component of an organization's safety and health program. Although it's a good idea to learn from your mistakes, it's always better to learn from someone else's.

6. Be ready to change your behavior. All personnel throughout the organization must adopt and embrace a proper "safety mindset" and use it all times for all investigative activities. Investigators must remain alert and open minded, and not only talk about safety, but practice it. Investigators should approach all situations with the "SWAT mentality": constantly train and plan for the worst, but hope for the best possible outcome. A little fear can be a good thing when encountering a potentially high-risk situation. Fire scenes can be hazardous to one's safety and health. A few extra minutes spent evaluating hazards and planning your actions can often make the difference between a safe operation and a disaster. Respect all situations that you are faced with and always weigh the potential risks before committing yourself to a course of action.

7. Assess shortcomings and de-

ficiencies. Organizations should continually evaluate their safety polices, standard operating procedures (SOPs), training and education programs, technology, equipment and resources. This is helpful to determine readiness based on the mission of the organization and the tasks to be performed by investigators. Organizations should reach out to others for information and assistance and remain current and conversant in safety and health standards and regulations. Post-incident analyses and critiques can be effective tools to identify weaknesses and deficiencies in existing programs, procedures or equipment so that corrective measures can be implemented. Management should avoid tunnel vision and solicit input from all affected personnel in the organization to get a "buy in" to the safety and health program.

8. Make a list (and check it twice). Investigators should list all of the potential safety and health hazards, risks and safety violations associated with their jobs that may cause harm to themselves or others. This list helps to heighten awareness and recognition of the potential impact of these hazards and risks beyond the immediate workplace. This "reality check" forces personnel to ask themselves, "Is my ignorance and disregard for my personal safety and health really worth it?" Investigators should always be risk evaluators and not risk takers. Sometimes, the hardest lessons are the easiest to learn from.

9. Acknowledge potential harm. Investigators should not be afraid or reluctant to share their safety and health "war" stories with others, including management. Personnel should verbalize or submit in writing details about an incident that has potential safety and/or health implications. Investigators should always ask themselves, "Is my job worth dying for?" This information exchange may help prevent injuries and illnesses to others. Acknowledging that there is a problem is an important first step in implementing a solution.

10. Institute a means for a personal inventory. Investigators must continuously evaluate their actions, behaviors and attitudes to promptly identify problems and correct deviations from policies and SOPs that could spell trouble from a safety and health standpoint. All personnel in the organization must take the safety pledge, accept responsibility and be accountable for their actions.

11. Continue to train and educate yourself. Personnel should take advantage of all available training and education opportunities. Investigators should operate in an environment where management reinforces and rewards positive safety behaviors and punishes negative (unsafe) behaviors that may jeopardize someone's overall safety and well-being. Investigators must adopt the mindset that, "If I cannot perform this task or operation safely based on my level of knowledge, training and education, then I will not perform it." Personnel should always rely on and listen to their "sixth sense" – if it feels wrong, it probably is wrong.

12. Be willing to help others. Investigators should not be selfish with their newfound knowledge and abilities. All members of an organization should be "safety messengers" and preach the value of safety and health at any available opportunity and venue. All investigators should embrace a goal and a vision for a safer and healthier future for their profession. No one should underestimate his or her ability to make a difference. Our common health and welfare is based on a commitment and unity of the fire investigation profession as a whole. Only you are ultimately responsible for your safety and health.

Summary

Fire investigators must remain vigilant in the recognition and identification of all potential safety and health hazards and should take the necessary time and steps to identify, evaluate and mitigate them at all fire scenes. Engineering controls, work practices and PPE should also be used where feasible to ensure the safety of all personnel. The scene should continually be reassessed to evaluate safety and/or health hazards and risks that may change due to fire conditions, suppression efforts, overhaul activities or lapses in time.

Investigators should keep in mind that the potential for serious injury exists at any time, and they should not become complacent or take unnecessary risks that compromise their health and safety. However, it is the responsibility of the investigator's organization to establish adequate safety and health policies, procedures and programs such as the 12-step program to ensure the safest possible working environment and reduce the incidence of occupational injuries, illnesses and fatalities.

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Additional health-related information on the hazards and short- and long-term health effects associated with firefighting can be obtained at www.firescene-safety.com.

USFA Offers Web-Based Training on Lightweight Building Construction

The U.S. Fire Administration (USFA), in partnership with the American Forest & Paper Association (AF&PA,) has released a comprehensive web-based educational program developed to enhance firefighter awareness of the performance of different forms of lightweight construction components during fires to create a safer operational environment for the fire service. These components include trusses, glue laminated beams, I-joists, structural composite lumber and wood structural panels. Included in this program is FireFrame, an interactive tool on building construction for the fire service. The program was developed with the assistance of several state and local fire training systems.

Further information on this program may be found under the Research section of the USFA web site, www.usfa.dhs.gov and at www.woodaware.info.