

INTERNATIONAL ASSOCIATION OF ARSON INVESTIGATORS

61ST Annual Training Conference

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RECOVERY OF HUMAN REMAINS FROM FATAL FIRE SETTINGS USING ARCHAEOLOGICAL METHODS: Instructor: **Gregory O. Olson** This presentation will focus on the recovery of human remains and associated artefacts from fatal fire settings utilizing archaeological methods. This lecture is designed to introduce the fire investigator and medical examiner/coroner to a method of recovery which maximizes the amount of human remains recovered in these types of fires. It is not difficult for the investigator to be overwhelmed at the sheer magnitude of some fires which carries the potential for missed or overlooked evidence. The introduction of the archaeological-style grid search will demonstrate the tremendous effect this method of recovery has and will have on the recovery. The presentation will include actual case studies where this method has been applied.

ESPERANZA FIRES/FIREFIGHTER FATALITY INVESTIGATION:

Instructor - **Douglas H. Allen.** This Case Study will follow the efforts of an arson task force to develop circumstantial evidence that leads to the conviction of Raymond Lee Oyler. This case is reportedly the only death penalty sentence where an arsonist has killed fire fighters as a result of his fire setting activities. Oyler was convicted of five counts of murdering fire fighters and sentenced to death on June 6, 2009

MOTORHOME & RV FIRE INVESTIGATIONS: Instructor **Chris Bloom:** This course presents the latest information on fires involving Recreational Vehicles of all types, including identifying and discussing the highly unique characteristics of the vehicles, their interrelated systems, as well as the materials commonly used in their construction. The presentation will include using this fundamental knowledge, along with the application of the NFPA 921 methodology, to assist the investigators in establishing a logical and sound scientific theory as to the origin and cause of the fire. Specifically included will be the important detailed questions for witnesses, case histories on problematic and recalled system components, and how to avoid several common investigative errors.

FIRE INVESTIGATION REVIEWS: "HOW IT LOOKS FROM THE "OTHER SIDE"

Instructor - **John J. Lentini.** The days of an investigator being the sole fire expert on a case have long since passed. Whether it is a civil case or criminal case, the investigator who puts forward a hypothesis about origin and cause is almost certainly going to have their work product reviewed. This may not always be obvious as the reviewer may be in agreement, but you can be sure that the attorney opposing you is more knowledgeable as a result of the review. This session will describe the kind of issues that are commonly addressed by a reviewer who is asked for a second opinion, and the kind of reports that are most likely to pass muster under this often demanding form of "peer review."

ANALYSIS OF COOKTOP FIRES: Instructors - K. Scott Barnhill & William B. Johnson.

The program material will familiarize the participants with the dynamics of cooking fires and the unique scene processing issues related to kitchen fires. The participants will be introduced to the design and construction of major manufacturers' ranges, surface units and controls. The instructors will present results from numerous full scale burn experiments and case studies.

MARINE VESSEL FIRE INVESTIGATIONS: Instructor – Steve Carman. The 2008 edition of NFPA 921 contains the first-ever chapter addressing Marine Fire Investigations. This class is designed to acquaint the investigator with the many unique aspects of marine fires and the factors important to consider. Discussions of safety concerns, vessel terminology, shipboard/boat systems, ignition sources, documenting the scene and other topics will be included in the presentation. Additionally, the application of fire dynamics principles to the marine vs. shore-based fire environments will be covered.

UTILIZATION OF CELL PHONE INFORMATION FOR FIRE INVESTIGATORS:

Instructor - **Jason Johnston.** This basic course will start you thinking of how many times the ball may have been dropped by not utilizing the often overlooked cellular phone information. If you could know where your suspect, witnesses, spouse or significant other was at the time of the fire would you want this information? This class will help you obtain this information and much more such as the value of obtaining text messaging. This course is designed for the fire investigator who wants / needs that missing piece of information to solve that in depth investigation. Information will be presented through lecture and practical course exercises to give the student the skills to obtain this valuable information.

HONOUR KILLINGS: Instructor – Brent Hyatt. In 2006 Inspector Hyatt commenced the investigation of the poisoning of Alexander Litvinenko, the “Russian Spy Case.” He interviewed Mr. Litvinenko at his bedside until his death, and he continues as the Investigating Officer to date. Inspector Hyatt is also a world renowned expert on “honour killings.” In October 2002, Insp. Hyatt investigated the “honour killing” of a 17-year-old Kurdish girl who was murdered by her father, the first case in the UK whereby a father was convicted of the murder of his daughter in these circumstances. Insp. Hyatt is also involved in the investigation of the murder of Banaz Mahmoud, a 20 year - old Kurdish girl, whose body was discovered in a suitcase, buried under a house in Birmingham. In March 2006, a six year old became the youngest victim of “honour killing” in the UK, when she was murdered as a result of an arson attack, and in February 2007, a man was arrested for killing his wife and four children by pouring gasoline over them while they slept and setting them afire. Insp. Hyatt presents as to why “honour killings” differ from conventional murders, and how this affects the investigative process.

FIRE TESTING INSTRUMENTATION & SCALE MODELING:

Instructors – **Jim Quintiere & Robert Schaal.** Scale models can be useful for reconstructing some fire scenarios. The basis for scaling will be presented, and examples will be given. One example includes the operation of a smoke control system for a department store atrium. The smoke dampers were being blamed for the cause of the damage, but in fact the scale model proved that the design of the smoke control system was at fault. Another example will be the reconstruction of the fire on one floor of the WTC event. Also covered in this class will be the proper use of instrumentation when conducting laboratory and field tests.

IGNITABLE LIQUID RESEARCH: Instructor – **Steve Andrews**. This course illustrates the use of the fire test dummy in "man-on-fire" gasoline vapor explosion homicide case in the UK using cases which have resulted in convictions for murder or attempted murder in the English courts. This will involve detailed examination of the methodology of fire testing in several cases, the calculations and health & safety considerations required to undertake the tests, and the way in which the results were presented for courtroom purposes.

CASTLE WEST APARTMENT FIRE: Instructors - **Chris Forkner & Jamie Lord**. This course will present a case study of the investigation of the Castle West Apartments fire, which occurred in 2007 in Colorado Springs, CO. The building contained over 130 apartment units on three levels. This two-fatality fire was investigated jointly by local agencies and ATF's National Response Team. This investigation utilized a wide variety of resources which will be discussed. Other topics to be discussed will include use of the "team concept" of investigation, working within the framework of the ICS system for large multi-agency investigations, investigation of fatal fires, techniques for analyzing large numbers of witness statements about a fire, computer fire modeling, and full scale fire testing.

ENERGIZED GAS LINE FIRE INVESTIGATIONS – Instructor- **Mark Goodson** This seminar will deal with the recognition of a fire caused by the failure of Gas Appliance Connectors (GACs) or Corrugated Stainless Steel Tubing (CSST) runs when either is exposed to electrical current. GACs can fail and leak when exposed to electrical current, CSST can fail when damaged by lightning; in both cases, escaping fuel gas can be ignited by the arcing process. Course attendees will understand the development of both products and will be reviewed on patents covering the products. The theoretical basis of failures will be detailed, as will the results of numerous fire investigations that have been carried out involving both GACs and CSST.

CIGARETTE/GASOLINE IGNITION STUDY: Instructor – **Jack Malooly**. From Hitchcock's *The Birds* to *The Usual Suspects*, it has been one of the staple clichés of Hollywood: the cigarette butt tumbling in slow motion into a pool of gasoline unleashing a lake of fire. Have you ever heard this? I accidentally spilled gasoline on the floor and dropped a cigarette, and the whole place went up... Well, it just isn't likely. Check out this class and learn why.

SERIAL ARSON-GEOGRAPHIC ANALYSIS - Instructor **Douglas H. Allen:** This class provides the attendees with the six known geographic patterns set by the serial arsonist. Knowing and analyzing these patterns can assist the investigator to determine where the next arson target may occur, and where the arsonist may live.

FIRE TEST DUMMIES: Instructor - **Steve Andrews** . This course will describe the development of a fire-test dummy for use in forensic casework. In this class the design, construction, uses and limitations of the fire test dummy will be addressed.

VEHICLE FIRE INVESTIGATIONS: Instructor – **Steven R. Mackaig**. This presentation will provide a scientific approach to vehicle fire cause examination suitable for any level of fire investigation experience. Proving an incendiary vehicle fire cause requires the consideration and elimination of potential accidental fire causes. The course will study vehicle arson motives and include the relationship of our current economy. Learn how simple it has become to commit vehicle arson using methods other than ignitable liquids and difficult to prove due to the complexity of modern vehicles. This course will improve the effectiveness of new vehicle fire investigators and provide a contemporary courtroom tested approach for vehicle fire cause determination for the seasoned.

HOW TO STAY HEALTHY ON OSHA'S ALPHABET SOUP: Instructor - **Barry Lindley, Tom Keefer & RD Muldoon**. We are a firm believer that all fires are hazmat scenes and therefore need to be treated appropriately until air monitoring is done to prove that hazardous materials are no longer in the air. Why do we say all fires are hazmat scenes? We know that people die in fires from the following conditions: thermal and smoke. From kept statistics it is generally accepted that 70-75% of the people die from smoke inhalation. So the question that has to be asked is: What is in the smoke that kills people and how long does this material stay around? It is obvious if you arrive on scene when the fire is still burning; but once the fire is out and cold, are there hazardous materials still present that could present a hazard to the investigator? However, hazardous materials are just one of the things that could injure an investigator. This presentation presents a process of how to respond to a fire scene safely and the training that is required to safely do your investigations.

CUTTY SARK CLIPPER SHIP FIRE INVESTIGATION: Instructor - **Dr. Nick Carey**. The Cutty Sark fire in 2007 was one of London's highest profile incidents in recent years attracting considerable media and public attention from around the world. The presentation will give an overview of the 14 month multi-agency investigation including an electrical examination that took 30 days. Three-dimensional animations will be used in the presentation to explain the fire's area of origin and the relevant physical evidence recovered at the scene.

FLASHOVER AND UNUSUAL FIRE PATTERNS AND FIRE MYTHS:

Instructor - **Jamie Novak**. This course will cover effects of flashover/post flashover on fire scenes. It will also cover many unusual fire patterns that have been found at many test burns. Fire investigation myths will be covered and dispelled by test burns debunking many of these myths and misconceptions. This material will be covered by the use of many videos and photos of test burns and explosions.

ELECTRICAL FIRE INVESTIGATIONS: Instructors – **Rob Rush & Bill Macomber**

This course is designed to enhance the fire investigator's ability to detect and determine the origin and cause of a fire in structures when the cause is believed to be electrical in nature. Specific topics include basic fire behavior and how it relates to electrical equipment, investigator safety, basic electrical terminology, ohm's law, basic electrical circuitry, identification of electrical systems from power plant to plug, component compositions and fire hazards/failure points associated with electrical systems.

COLUMBUS CHEMICAL INDUSTRIES FIRE: Instructors – **Russell D. Melton, Steve Quandt & Cory Davis.** On May 11, 2009, fire and explosions rocked the small town of Columbus, Wisconsin. CCI is a processor, purifier, packager and blender of some of the most hazardous chemicals in the world. This presentation provides the means to establish the objectives, the strategy and the tactics to cost-effectively manage a catastrophic event, cooperate with the regulators, establish monitoring programs, conduct a unified origin and cause investigation, collapse the perimeters based on arc mapping, conduct selective remediation and effectuate a solid-waste program. The tactics of a forensic investigation that is designed to determine not only the root cause but has a focus on the owner, customers, employees and preserves the shareholder assets.

COMPREHENSIVE FORENSIC PHOTOGRAPHY: Instructor - **Ron Taniwaki.** This is a well rounded workshop on forensic photography, from basic photography to how to properly shoot a “black hole” fire scene. Mr. Taniwaki will cover beginning and advanced photography techniques. Topics will cover basic exposures, camera-handling techniques for forensic images: control layout, apertures and much more. Topics discussed also include chain of custody of digital images, Standard Operating Procedures and much much more. Mr. Taniwaki is a highly sought after instructor for Nikon USA, so don't pass up this opportunity to learn. It is highly recommended that you bring your camera to the class.

BUILDING CONSTRUCTION: Instructor - **Jack Malooly.** This course will present the various types of building construction and how these types might influence fire spread or post-incident collapse. The course will focus on how building construction can influence mechanisms of building collapse and discuss post-incident safety. Investigators will learn how to determine and recognize common structural failure modes, avoiding scene processing that may increase the danger of structure collapse.

PRACTICAL APPLICATION OF THE SCIENTIFIC METHOD TO FIRE INVESTIGATION: Week long 36 hour course, Instructors – **Jim Allen & Joe Konefal.** Practical Application of the Scientific Method to Fire Investigation, Latest Fire Investigation Methodology based on NFPA 1033, 2009 Edition, NFPA 921, 2008 Edition, and applicable ASTM Standards. Emphasis on establishing competent ignition scenarios in area of origin, and proving what started the fire as well as ruling out all circumstances that did not start the fire. This class is designed to be suitable for everyone from the new fire investigator to the seasoned veterans. The class will adapt to the needs of the students.