



New York State Chapter 23 of the
International Association of Arson Investigators, Inc.

FIRE SCENE PRESERVATION



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International Association of Arson Investigators, Inc.

NYS IAAI's Awareness Series

- Free series of training modules designed to educate/promote awareness to line fire officers and fire fighters
- Modules address Origin and Cause investigations, role of the fire investigator, multi-agency investigations, role of suppression crews in fire investigations, etc.
- Presentation was developed and disseminated in conjunction with a 2013 FEMA Fire Prevention and Safety Grant awarded to NYS IAAI





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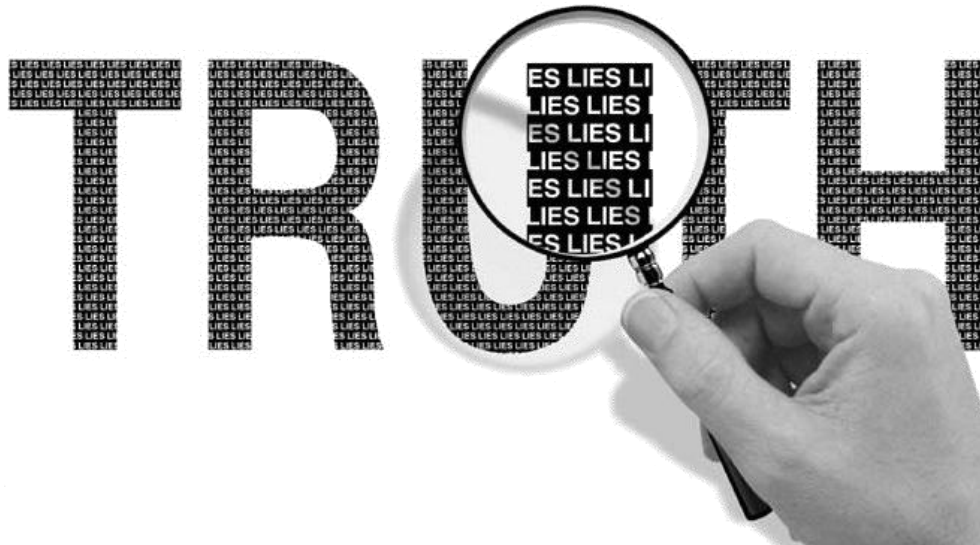
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Fire Scene Preservation

Getting to the



beginns with your help!



Enabling Objectives

- Scene Preservation & its purpose.
- Fire Chief Responsibilities
- The importance of Fire Investigation & its purpose.
- The Responsibility & Role of Fire Suppression personnel.



Enabling Objectives

- Fatal Fire Preservation considerations
- Spoliation
- Public & Private Sectors



What is Scene Preservation?

The ability to maintain the fire scene as close as possible to its original form, with no significant changes that would destroy or alter it after extinguishment or during overhaul.



Why “preserve” the Scene?

To efficiently and accurately determine the cause so that future fire incidents can be avoided!

Fire Investigations make life and property safer

Considerations:

- Recalls / Product Defects
- Code Violations / Construction Defects
 - Liability Issues



Who's Responsible for Preserving the Scene?

Preservation **is not** the sole burden of the fire investigator!
It's everyone's and starts with fire suppression personnel!



Fire Chief

NYS General Municipal Law; Article 10, 204-D

■ § 204-d. Duties of the Fire Chief.

The fire chief of any fire department or company **shall**, in addition to any other duties assigned to him by law or contract, *to the extent reasonably possible determine or cause to be determined the cause of each fire or explosion which the fire department or company has been called to suppress.* He shall file with the office of fire prevention and control a report containing such determination and any additional information required by such office regarding the fire or explosion. The report shall be in the form designated by such office. **He shall contact or cause to be contacted the appropriate investigatory authority if he has reason to believe the fire or explosion is of incendiary or suspicious origin.** For all fires that are suspected to have been ignited by a cigarette, within fourteen days after completing the investigation into such fire, the fire chief shall forward to the office of fire prevention and control information detailing, to the extent possible: (a) the specific brand and style of the cigarette suspected of having ignited such fire; (b) whether the cigarette package was marked as required by subdivision six of section one hundred fifty-six-c of the executive law; and (c) the location and manner in which such cigarette was purchased.



Fire Chief

- **Awareness:** Understand that someone has to determine the cause of the fire. (NYS GML 204-d)
- **Attitude :** Know what needs to be accomplished to determine the origin & cause and try to make conscious efforts to educate and advise suppression personnel as it will move the investigation along quicker, increasing the chance of finding the cause.
- **Common Sense:** Make every attempt to protect & preserve the entire scene keeping all furnishings, contents & fixtures in place. Further, avoid taking anything apart!



What is the purpose of Fire Investigation?

- **To determine the origin, cause, and development of a fire or explosion.**
- **To determine the responsibility, circumstances and factors that were necessary for the fire to have occurred.**
- **Fire Prevention!!!to identify & learn how to avoid this from happening again!**



How do Fire Investigators arrive at the Origin?

NFPA 921 Guide for Fire & Explosion Investigations (2014 Edition)

- **(1) Witness Information.** The analysis of observations reported by persons who witnessed the fire or were aware of conditions present at the time of the fire
- **(2) Fire Patterns.** The analysis of effects and patterns left by the Fire.
- **(3) Arc Mapping.** The analysis of the locations where electrical arcing has caused damage and the documentation of the involved electrical circuits .
- **(4) Fire Dynamics.** The analysis of the fire dynamics, that is, the physics and chemistry of fire initiation and growth, and the interaction between the fire and the building's systems .



Fire Cause Determination

- Is the process of identifying the *first fuel ignited*, the *ignition source*, the *oxidizing agent*, and the circumstances that resulted in the fire.
- Generally follows origin determination
- Is reliable only if the origin has correctly determined.



Fire Suppression Personnel Responsibilities:

- Consider the Entire scene as evidence
 - Preservation begins with the 1st arriving unit
 - Secure the scene to the best of your ability!
 - Avoid *contamination* and *spoliation*!
- ❖ Not to be implied that Life & Property preservation are secondary



Fire Suppression Personnel

- **Observe**
- **Recognize**
- **Protect**
- **Notify**



OBSERVE: Entry / Suppression

- Victims / Injuries (body locations)?
- Witnesses?
- Shoe / Tire Impressions?
- Occupants not dressed appropriately?



OBSERVE: Scene Observation/Size-Up

- Fire Location (multiple)
- Windows (open/closed)
- Fuel packages
- Containers
- Unusual issues/absence of the norm



OBSERVE: Entry / Suppression

- Obstructions?
- Doors (forced entry)?
- Contents missing / removed?
- Contents don't match décor



OBSERVE: Entry / Suppression

- Contents in the car outside
- Fire Location (specific)
- What's burning
- Trailers →



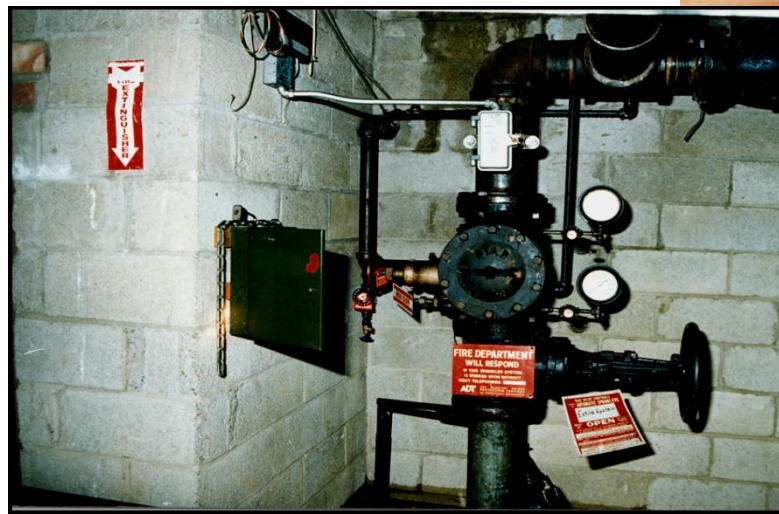
RECOGNIZE: Physical Evidence

- Patterns
- Containers
- Devices



RECOGNIZE: Physical Evidence

- Accidental Evidence
- Tampering
- Smoking
- Smoke Detectors
- Prints



PROTECT: Scene Integrity

Limit Access

- Fire line / Barrier tape
- Set up a perimeter

Avoid Contamination

- Tracking foreign substances
- Refueling

Avoid Spoliation/ Excessive overhaul

The Entire scene is evidence!



PROTECT: Control Suppression

Water

- Limit straight stream usage
- Limit & Supervise wash-downs
- Limit Drain-Holes to areas away from the area of origin.
- Overall usage



PROTECT:

Control Suppression

Tools

- Use clean tools
- Clean PPE
- Avoid gas powered equipment usage
- Fuel Equipment outside
- Avoid Contamination!!



PROTECT:

Control Suppression

Windows

- Open vs. Breaking
- Preserve positioning- locks
- Ventilation (Vertical vs. Horizontal)
- Fire Patterns



PROTECT: Control Suppression

Doors

- Avoid removal or Destruction
- Evidence of Forced Entry
- Ventilation (Open & Closing)
- Fire patterns



PROTECT: *Control Suppression*

Walls & Ceilings

- Avoid Collapsing to maintain fire patterns.
- Make inspection holes vs. full openings
- Use Thermal Imaging Camera



PROTECT: Control Suppression

Overall Considerations:

- Your 2nd priority..... to protect “property”.
- Treat the victim’s property as yours!
- Unnecessary damage and the reaction to your actions!!



PROTECT:

Control Overhaul

STRUCTURE

Avoid Hydraulic Overhaul and wash-away

Limit overall usage in/around the area of origin

Avoid the use of heavy equipment unless there is imminent danger

Allow FI's to document before heavy equipment usage



PROTECT:

Control Overhaul

INTERIOR

Avoid Use of gas-powered equipment

Avoid "cleaning out" or "stripping" the scene

Avoid over-aggressive behavior

Open walls from opposite rooms

Avoid dismantling appliances



PROTECT:

APPLIANCES

Gas / Electric / Water

- Turn off appliances at the source (main only)!
- Avoid moving an appliance from it's original position.

Knobs / Switches / Valves

- DO NOT move/turn/flip or alter from the original position.
- Avoid fracture
- Note the original position.



PROTECT:

EVIDENCE

- Avoid movement / handling outside of exigent circumstances
- Secure in place (cover)
- Avoid loss, destruction or alteration (spoliation)!
- Consider accidental and incendiary evidence as equally important!



PROTECT:

Control Salvage

- Protect property & evidence.
- Cover items of evidence instead of removing.
- Keep contents, furnishings and fixtures in place
- Deter excessive overhaul and salvage until the area of origin has been established
- Be observant for evidence.



NOTIFY

Report to Incident Command or Fire Investigator

- Observations upon arrival
- Observations during Entry and Suppression
- Observations during Overhaul & Salvage
- Any potential evidence
- Communicate with your fire investigator
- *Anything odd.....*



NOTIFY

Anything Odd.....



Fatal Fire Scene Preservation

Fire Suppression Personnel

- Secure the scene immediately
- Avoid unnecessary personnel into the scene
- Notify Incident Command (FD → FM/PD → ME)
- Minimize Firefighting operations in the area of the body.
- Recognize and treat the scene as “crime scene”
- Avoid hose-streams and equipment usage to not disturb or alter the body.
- Avoid unnecessary foot traffic and viewing exposure of the body.



Fatal Fire Scene Preservation

- Leave the body in-place for documentation and subsequent examination.
- Preserve all clothing and associated body parts.
- Limit overhaul

❖ Premature movement or removal should be limited to:

- **Chance of Resuscitation**
- **Imminent Collapse**
- **Uncontrollable Fire**

❖ ANY PREMATURE MOVEMENT SHOULD BE DOCUMENTED!!!!

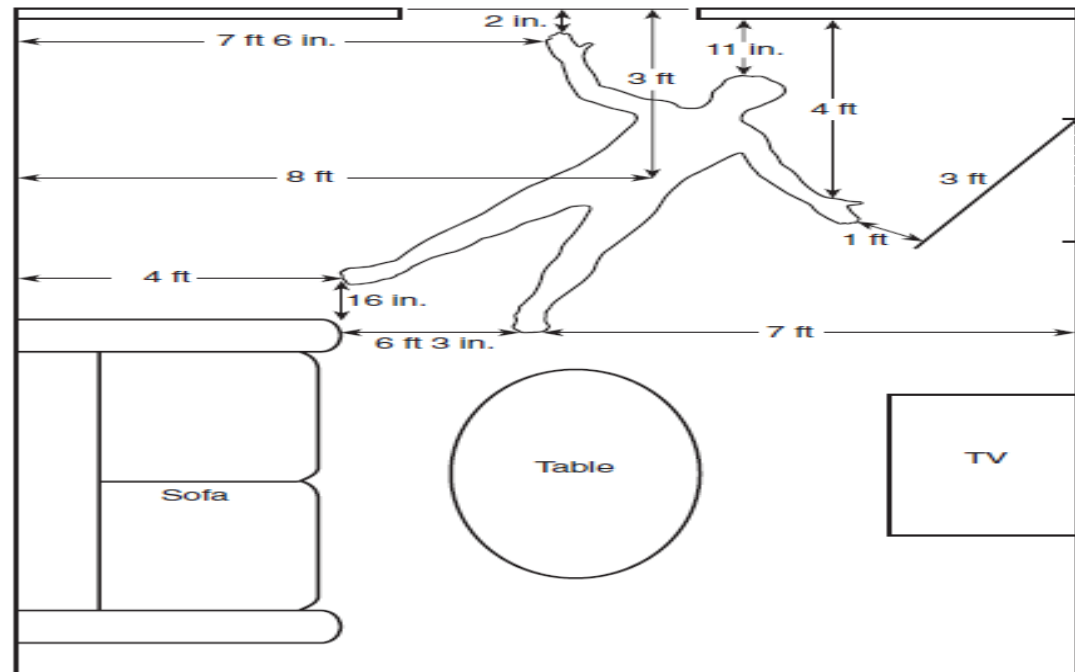
Fatal Fire Scene Preservation

Understanding the Fire Investigation Process:

- Multi-agency scene (PD, FD, ME, Forensic Unit) and a “Team Effort”
- Scene will always be treated as a “crime scene”
- Investigation can be prolonged to days/ weeks

Scene Examination:

- Documentation
- Area of Origin
- Cause



Fatal Fire Scene Preservation

Victim Preservation (Evidence):

- Location of the body
- Position of the body
- Clothing (type) on the body
- Burn patterns on the clothing / body
- Items found with the body
- Blast damage to the body



Fatal Fire Scene Preservation

Pre-Recovery Evidence Collection

- “Arms Reach”
- Surrounding Area
- Causation

Post-Recovery Evidence Collection

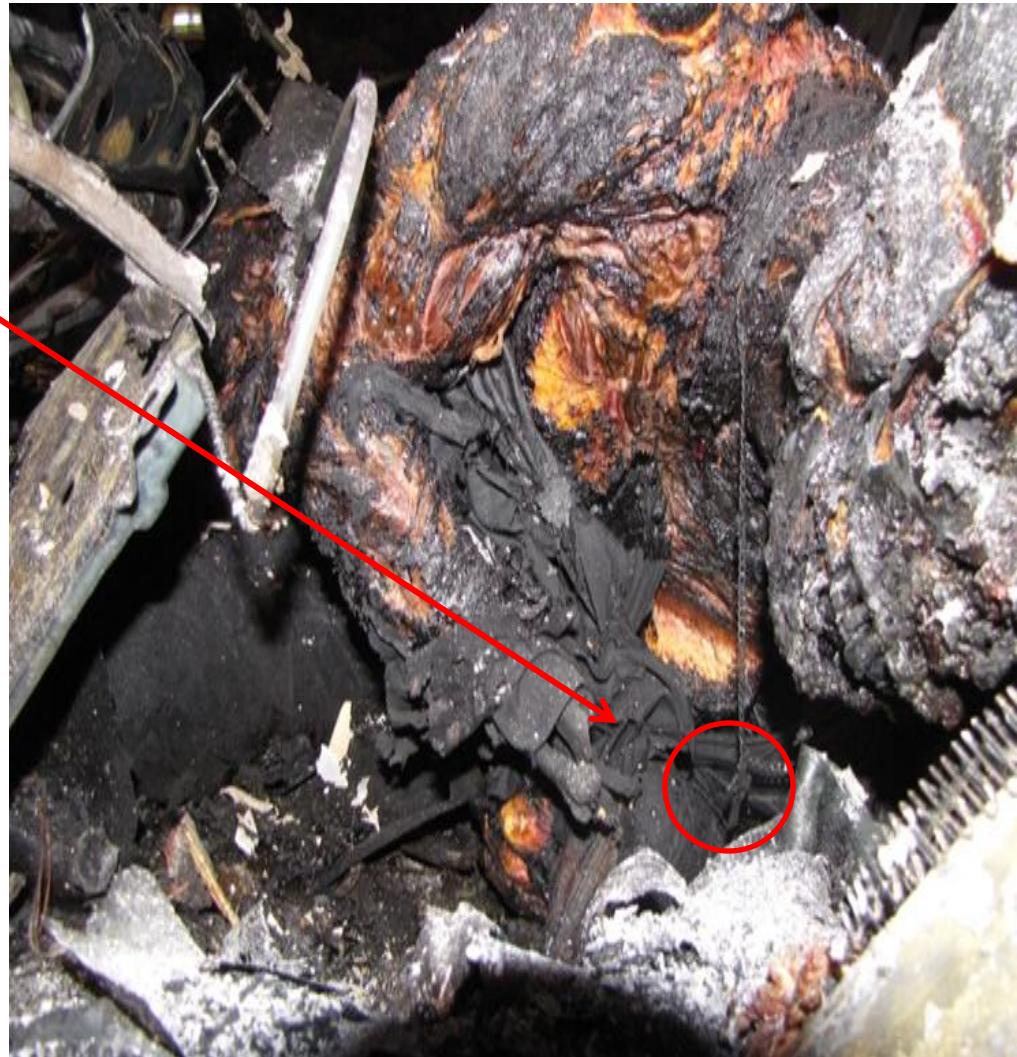
- Remaining evidence from protected areas
- Remaining body parts



Fatal Fire Scene Preservation

Post Scene Investigation

- Victim Identification
- Toxicology
- Carboxyhemoglobin levels (COHb)
- Cause of Death
- Manner of Death



Spoliation

Defined: Loss, destruction, or material alteration of an object or document that is evidence or potential evidence in a legal proceeding by one who has the responsibility for its preservation.
(NFPA 921)

Repercussions:

- Sanctions
 - ✓ Dismissal of claims or defenses,
 - ✓ Preclusion of evidence, and the
 - ✓ Granting of summary judgment for the innocent party.



Spoliation

DO NOT:

- ✓ Take “Trophies” or Souvenirs.... its stealing!!
- ✓ Destroy contents without reason
- ✓ Take appliances / devices / evidence apart
- ✓ Demolish the structure unless there is a life safety issue!
(Extinguishment of Fire vs. Nuisance)



Public and Private Sectors

What's the difference?

- Public does not typically engage in failure analysis
- Private will engage in failure analysis when investigation warrants it.
- Insurance has the “cooperation” clause
- Insurance has outside expertise
- Money!

The classification of “**Accidental**”

NFPA 921

19.2.1.1 Accidental fires involve all those for which the **proven** cause does not involve an intentional human act to ignite or spread fire into an area where the fire should not be. When the intent of the person's action cannot be determined or proven to an acceptable level of certainty, the correct classification is undetermined.



Public and Private Sectors

- **Subrogation**

- 3rd party; Circumstances in which an insurance company tries to recoup expenses for a claim paid out when another party is responsible.
- Plaintiff in an action

- **Liability**

- Being responsible for someone else's loss/damages.
- Defendant in an action



Points of Understanding

- What the Fire Investigator is looking for to conclude O&C
- The responsibilities of fire suppression personnel
- Scene Security and why we should limit access
- How fire suppression, overhaul and salvage operations affect the fire investigation.
- Fatal fire scene investigation issues
- What is evidence, Spoliation & Contamination
- Public vs. Private fire investigators obligations and that cooperation is best!



QUESTIONS?

References

- NFPA 921- Guide for Fire & Explosion Investigations; 2011 Edition.
- NYS Association of Fire Investigators Chapter 23 “Fire Preservation”; PPT- 2005 Ed.