

# Manhattan Fire Protection District

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	Subject: Fire Investigation	Date 4/1/99 <i>Revised 1/1/10</i> SOP# 900-1

## **PURPOSE**

To define the minimum recommended practices to be included in all operations that pertain to fire investigations and the Office of Fire Investigation

## **APPLICATION**

The Office of Fire Investigation shall be under the control of the Chief of the Manhattan Fire Protection District, and shall have the ultimate authority, as provided in State statute. The Fire Chief will appoint members to serve in the Office of Fire Investigation. Qualifications for members appointed shall be as follows.

Fire Department members assigned to the Office will meet the following qualifications:

### **Fire Investigator**

- Firefighters employed by the Department.
- Shall not be under the age of twenty-one years (21) at the time of appointment.
- Completion of the Fire Investigator training modules as outlined by the Office of the Illinois State Fire Marshal (120hrs).
- Certification as a Fire Investigator as outlined by the Office of the Illinois State Fire Marshal.
- Must maintain continuing education / recertification requirements as set forth by the Office of the Illinois State Fire Marshal.
- Additional requirements as deemed necessary by the Fire Chief.

### **Arson Investigator**

- Full-time firefighters employed by the Department.
- Shall not be under the age of twenty-one years (21) at the time of appointment.
- Completion of the Arson Investigator program as outlined by the University of Illinois, Police Training Institute (200hrs).
- Certification as an Arson Investigator as outlined by the Office of the Illinois State Fire Marshal and the Illinois Law Enforcement Training and Standards Board.
- Must maintain continuing education / recertification requirements as set forth by the Office of the Illinois State Fire Marshal.
- Additional requirements as deemed necessary by the Fire Chief.
- Members designated as Arson Investigators shall be considered Peace Officers as defined in the Illinois Compiled Statutes (20 ILCS 2910) and shall have all police powers enumerated in such, but shall only perform such police duties as are assigned by the Fire Chief. Members so designated shall be issued identification cards / badges identifying them as such.

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- Members designated as Arson Investigators shall be required to comply with continuing education requirements (I.E. firearms qualification, use of force, interview / interrogation, evidence collection, etc.), as required by the Police Training Institute.

## **INVESTIGATOR SAFETY:**

As fire scenes by their very nature are dangerous places, investigators need to be aware of the general and particular dangers of the scene under investigation.

### **Minimum number of Investigators**

It will be the policy of the Office of Fire Investigations, that the minimum number of investigators present, conducting an investigation will be two (2).

Additionally, these investigators will be furnished with a two-way radio which is monitored at the Dispatch Center. If only two investigators are present on the scene, and there is no other personnel (I.E. Fire), the Dispatch Center will perform status checks with the investigators working, every 30 minutes until such time that they have completed their investigation in the structure.

### **Personnel Protective Equipment**

Proper safety equipment, including safety shoes or boots, gloves, safety helmet, and protective clothing should be worn at all times while investigating the scene.

The type of protective clothing will depend on the type and level of hazard present.

### **Atmospheric Monitoring**

As fire scene atmospheres may contain ignitable gas, vapors, and liquids, in addition to the by-products of combustion, the atmosphere should be tested using appropriate equipment to determine if such hazards exist before working in the area. The following atmospheric conditions must be corrected prior to conducting an investigation.

- Oxygen Deficiency: < 19.5%
- Flammability: > 10% of the Lower Flammable Limit (LEL)
- Carbon Monoxide (CO): > 35 PPM
- Hydrogen Sulfide (H<sub>2</sub>S): > 10 PPM

Atmospheric monitoring shall continue as long as investigators are working on the scene.

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## Fire Scene Hazards

Many varying factors can influence the danger potential of a fire or explosion scene. The investigator should be constantly on the alert for these conditions and should ensure that all appropriate safety precautions are taken.

- Status of Suppression                      Investigators should not begin their activities until the fire has been completely extinguished.
  
- Re-kindles / Hot Spots                      If performing activities soon after a fire has been extinguished, the investigator should be mindful of the possibility of a rekindle. The investigator should be alert for continued burning or a rekindle and should remain aware at all times of the fastest or safest means of egress.
  
- Structural Stability                              Roofs, ceilings, partitions, load-bearing walls, and floors may have been compromised by the fire. Before entering structures involved in a fire, the investigator should make a careful assessment of the stability and safety of the structure.
  
- Utilities    The investigator should determine the status of all utilities (I.e., gas, electric and water) within the structure under investigation. Determining the status of all utilities is necessary to prevent the possibility of electrical shock or inadvertent release of fuel gases or water during the course of the investigation.
  
- Atmosphere                                        Fire scene atmospheres may contain ignitable gas, vapors, and liquids, in addition to the by-products of combustion. The atmosphere should be tested using appropriate equipment to determine if such hazards exist before working in the area. The atmosphere must also be continuously monitored throughout the investigation in the structure.

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## **INVESTIGATING:**

### **Notification**

An investigator from the Manhattan Fire Protection District, assigned to the Office of Fire Investigation, will be contacted in the following situations:

- When the cause / origin of the fire is undetermined.
- At the discretion of the Incident Commander.
- There is a serious bodily injury as a result of the fire; civilian or fire service.
- There is a death as a result of the fire; civilian or fire service.
- There is a possibility of a criminal act being involved.
- At the request of the Police Department.
- At anytime another agency investigator is contacted.

The MFPD Investigator will respond to the scene and based upon information provided and observed, will contact other members of the Office of Fire Investigation.

Upon arrival of responding members from the Office of Fire Investigation, the MFPD Investigator will brief all members on the basic incident information known. This includes, but is not limited to the following:

- Location of the incident.
- Time
- Date
- Weather conditions
- Size of the incident
- Complexity of the incident
- Type of structure
- Current use of structure
- Nature of damage
- Extent of damage
- Known injuries / death, either civilian or fire service.
- Purpose of the investigation (cause / origin only or possible criminal act)

### **Pre-planning the Investigation**

Members from the Office of Fire Investigation should then develop a plan on how to conduct the investigation. This should include:

- Estimating what tools and equipment will be needed.
- Estimate how many personnel are needed to perform the investigation.
- Estimate what types of specialty personnel (I.e. heavy equipment operators, evidence technicians, etc.) are needed.

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- Estimate what else might be needed, that might assist in the effectiveness of the investigation.

The following functions should be addressed in the pre-investigation meeting.

- leadership / coordinating function
- photography
- note taking
- mapping
- diagramming
- interviewing witnesses
- searching the scene
- evidence collection
- evidence preservation
- on-going safety assessment

## Conducting the Investigation

**While the actual investigation may take and include different steps and procedures,** dictated by the nature of the incident, the following are typical steps taken during the course of an investigation.

- Conduct scene inspection.
- Document scene through photography and diagramming.
- Determine area of origin.
- Investigate the cause: circumstances, conditions, or agencies that brought the ignition source, fuel, and oxidant together.
- Recognize, document, and preserve evidence (according to established practices within the State of Illinois).
- Interview witnesses.
- Review and analysis of the investigations of others.
- Identify and collect data or information from appropriate sources.
- Identify the cause of the fire and classify as one of the following:
  - Accidental – All fires for which the proven cause does not involve a deliberate human act to ignite or spread fire into an area where the fire should not be.
  - Natural – Involve fires caused without direct human intervention, such as lightning, earthquake, wind, and the like.
  - Incendiary – A fire deliberately ignited under circumstances in which the person knows that the fire should not be ignited.

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- Undetermined – Whenever the cause cannot be proven, the fire is considered to be undetermined. The fire might still be under investigation, and the cause may be determined later.
- Complete all necessary reporting as required. The Office of the Illinois State Fire Marshal must be notified, as prescribed by law, in all of the following incidents:
  - There is a death as a result of the fire, civilian or fire service.
  - There is serious bodily injury as a result of the fire; civilian or fire service.
  - There is a monetary fire loss greater than \$ 100, 000.
  - The fire is located on a property owned and / or operated by the State of Illinois.

## **Evidence Collection / Testing**

Collecting evidence at a fire scene requires attention to documenting and maintaining the integrity of the evidence. The investigator should ensure that evidence collectors identify and properly document, collect, and preserve evidence for laboratory analyses, further investigations, and court proceedings, in accordance with *NFPA 921* and other recognized national guidelines. This will ensure that critical evidence is not contaminated or lost prior to analysis and that the chain of custody is maintained.

To optimize the recovery and evaluation of physical evidence, evidence collectors should:

- Take precautions to prevent contamination.
  - Establish and maintain strict control of access to the scene.
  - Recognize that fuel-powered tools and equipment present potential contamination sources and should be avoided.
  - Wear clean, protective outer garments, including footwear.
  - Use clean disposable gloves for collecting items evidence.
  - Use clean tools for collecting items of evidence from different locations within a scene.
  - Place evidence in clean, unused containers and seal immediately.
  - Store and ship fire debris evidence containers of evidence collected from different scenes in separate packages.
  - Package liquid samples to prevent leakage and ship them separately from other evidence.
  - Store and ship fire debris evidence separately from other evidence.
  - Follow any specific laboratory requests / procedures.

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- Document the location of evidence using written notes, sketches, photographs, photo and video logs, an evidence recovery log, evidence tags, and container labels.
- Take special care to collect evidence in any areas of origin (such as the first fuel ignited and ignition source) in cases where the fire is not accidental.
- Place evidence in labeled containers for transportation and preservation. Evidence collected for laboratory identification of ignitable liquids must be immediately placed in clean, unused, vapor-tight containers (e.g., clean, unused paint cans; glass jars; laboratory-approved bags) and then sealed.
- Label each container so that it is uniquely identified. Labeling may include the name of the investigator, date and time of collection, case number, sample number, description, and location of recovery.
- Collect and preserve suitable comparison samples but recognize that such samples may be unavailable.
- Package evidence in accordance with local laboratories' policies and procedures.
- Recognize the presence of other physical evidence, such as blood stains, shoe prints, latent prints, and trace evidence, and use proper preservation and collection methods or seek qualified assistance.

## **Establish and Maintaining the Chain of Custody**

Establishing and maintaining a chain of custody verifies the integrity of the evidence. The investigator should ensure that the chain of custody is maintained.

Personnel responsible for the chain of custody should:

- Maintain written records documenting the sample number, description of the evidence, date and location where it was found, collector's name, and miscellaneous comments.
- Document all transfers of custody, including the name of the recipient and the date and manner of transfer.
- Document the final disposition of the evidence.

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## **OTHER AGENCIES:**

Following is a listing of other agencies that must be contacted, based upon the circumstances of the incident, and other agencies that might be of assistance during an investigation.

### Office of the Illinois State Fire Marshal (217) 758-0969

OSFM *must* be notified in all of the following incidents:

- There is a death as a result of the fire, civilian or fire service.
- There is serious bodily injury as a result of the fire; civilian or fire service.
- There is a monetary fire loss greater than \$ 100,000.00.
- The fire is located on a property owned and / or operated by the State of Illinois.

### South Suburban Fire Investigation Task Force (708) 349-3121

The SSFITF is a management system that develops and implements strategies to investigate and prosecute individuals responsible for the crime of arson. It has the ability to mobilize public and private resources, coordinate responsibilities and integrate the efforts of agencies, groups and persons involved in fire investigations.

A call-out is initiated by contacting the Orland Central Dispatch Communication Center at (708) 349-3121 and requesting the South Suburban Fire Investigation Task Force. The following information will be required at the time of the request:

- Officer in charge.
- Location of the incident.
- Type of incident.
- Agency requesting the call-out and contact number.

### MABAS 19 Fire Investigation Team (708) 349-3121

A call-out is initiated by contacting the MABAS 19 on IFERN radio or the Orland Central Dispatch Communication Center at (708) 349-3121 and requesting MABAS 19 Investigators. The following information will be required at the time of the request:

- Officer in charge.
- Location of the incident.
- Type of incident.
- Agency requesting the call-out and contact number.



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Bureau of Alcohol, Tobacco and Firearms (ATF) (312) 886-5429

The BATF-NRT will be requested to the scene in the event of a death, serious injury or any public safety personnel and hate crimes involving religious facilities.

Illinois State Police District 5 (Dispatch) (815) 726-6291

The ISP Dispatch Center will be able to call-out evidence technicians to assist in the collection and processing of evidence

Illinois State Police Crime Lab (815) 740-3543

The ISP Crime Lab will be able to assist with the testing of evidence.

Will County Sheriff's Department (708) 672-5700

- Must be notified of all incidents located on county owned / operated property.
- Can assist with the collection of evidence.

Will County Forest Preserve District Police (815) 727-8700

Must be notified of all incidents located on forest preserve owned / operated property.

Manhattan Police Department (815) 478-3226

- Must be notified of all incidents located on Village owned / operated property.
- Can assist with the collection of evidence.

Cook County Bomb Squad (708) 458-1000

Illinois State Police Crime Lab (815) 740-3543

Can assist with the processing and testing of evidence.

Federal Bureau of Investigations (FBI) (708) 429-2227

Signature: Chief Dan Forsythe Date: 1/1/10