

# Chapter Fourteen – Conducting the Investigation

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## *A Guide for Commercial Kitchen Fires*

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*The fire suppression detector was so covered with grease that it did not activate.*



*Duct wrap still connected to the duct above the sub ceiling*



*The fire extended up the duct, radiant heat ignited the 2x4 of the sub ceiling. The duct in the sub ceiling was wrapped but not where the duct was closest to the 2x4s. The wrap collapsed down onto the shelf of the hood.*



*Views of the fan*

# Conducting the Investigation

## Introduction

One of the fire investigator's first tasks is the accurate documentation of the fire scene before it is altered. Documentation of the building, fire patterns and the equipment through photography, video, diagrams, and field notes may all be required. These will serve as the underpinnings of an investigator's findings and opinions for fire origin<sup>1</sup> and fire cause<sup>2</sup>, and cause(s) for the loss. On-site investigative work also includes the fire department responder's observations and documentations, the observations of kitchen staff, and background information provided by facility management.



These witness observations and information are preserved through tape recordings or interview notes.

During the fire scene investigation, potential evidence must be identified, documented in place before alteration, and possibly preserved. This must be done by mutual agreement among the various parties involved to avoid spoliation<sup>3</sup> issues.<sup>4</sup> At a later date, the documentation may involve more detailed examination of cooking equipment, the exhaust, or fire-extinguishing systems in a laboratory or at a storage site.

Systematic documentation, by various media, provides a basis for the review and analysis of the facts surrounding the incident. This will support the investigator's findings and opinions developed during the analysis, hypothesis development and testing phases. Systematic fire investigation<sup>5</sup> documentation also provides reliable support for presentation of the facts and findings during deposition or trial testimony.<sup>6</sup>

Some guidelines for conducting the investigation are:

- Follow the scientific method<sup>7</sup> as previously discussed
- Keep an open mind – develop the facts before arriving at fire origin and cause determinations. After the scene documentation phase, there will be ample time to evaluate the facts and develop conclusions.
- Use a systematic documentation process
- Be thorough in video work, photography and note taking. The significance of a particular photo or series of photos or details in note form may not be apparent at the time of the documentation, but later may prove pivotal.
- Stop, look, and listen to eyewitnesses – how do the physical scene indicators match witness statements? Keep the door open for follow-up interviews and further evaluation.
- Be mindful of legal concerns; such as right of entry and spoliation
- Coordinate with other parties when working the scene and preserving evidence

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<sup>1</sup> The general location where a fire or explosion began. (See Area of Origin and Point of Origin in NFPA 921 Chapter 3 Definitions)

<sup>2</sup> The circumstances, conditions, or agencies that brought about or resulted in the fire or explosion incident, damage to property resulting from the fire or explosion incident, or bodily injury or loss of life resulting from the fire or explosion incident. (NFPA 921 Chapter 3 Definitions)

<sup>3</sup> 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 Chapter 3 Definitions)

<sup>4</sup> This means that the investigator, typically retained by the insurance company representing the property or business owner, should identify potential interested parties associated with a product or service which may have caused the fire. The investigation may need to be suspended pending notification of those interested parties to allow participation by their representatives.

<sup>5</sup> The process of determining the origin, cause, and development of a fire or explosion. (NFPA 921 Chapter 3 Definitions)

<sup>6</sup> For discussion of systematic protocols, see NFPA 921, Chapter 15 Documentation of the Investigation, 2004 Edition and Icove, David J, DeHaan John D., Forensic Fire Scene Reconstruction, Chapter 4 Fire Scene Documentation, Prentice Hall 2004.

<sup>7</sup> The systematic pursuit of knowledge involving the recognition and formulation of a problem, the collection of data through observation and experiment, and the formulation and testing of a hypothesis. (NFPA 921 Chapter 3 Definitions)

## Planning the Investigation

### Basic Incident Information

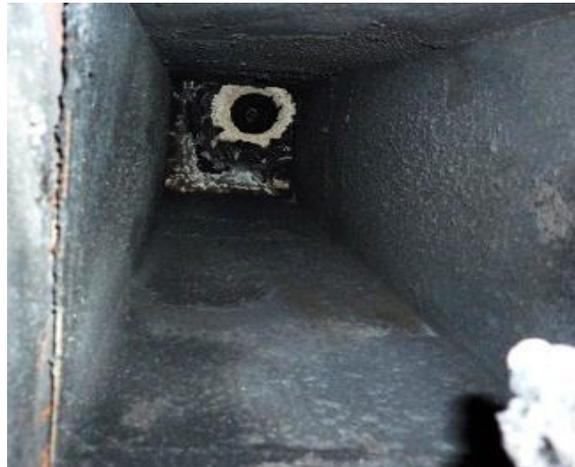
After receiving the assignment, the following points should be considered prior to going to the site.

- Location
- Date and Time of Incident
- Weather Conditions
- Size and Complexity of Incident
- Type and Use of Structure
- Nature and Extent of Damage
- Identification of parties involved and coordinating with their representatives

### Purpose of Investigation

The investigator should always be aware of what is expected of him or her throughout the investigation. The scope of responsibilities will depend on the role of the investigator, such as a public sector fire investigator vs. private sector consultant. The role of the fire department investigator is usually to determine fire origin and classification (natural, accidental, incendiary, or undetermined) but not always the cause. An investigative consultant may also be assigned to determine the significant factors, which resulted in the cause for the loss and the potential responsibilities of various parties. This may include a failure analysis<sup>8</sup> of a suspected kitchen component or fire prevention system.

**Note:** Some jurisdictions may restrict individuals who can conduct investigations, including interviewing witnesses. They may require that you be registered or licensed to conduct fire investigations.



*A one story duct interior after a fire. In this case the un-burnt grease remains, likely meaning that the fire department did not hose down the duct.*



*Exterior of the removed duct previously covered with insulation*



*Residue of an aluminum upblast fan after a fire*



*Results of a grease fire in a fast food restaurant*

<sup>8</sup> A logical, systematic examination of an item, component, assembly, or structure and its place and function within a system, conducted in order to identify and analyze the probability, causes, and consequences of potential and real failures. (NFPA 921 Chapter 3 Definitions)