

# **Fire Investigator Independent Study Continuing Education**

## **NFPA 921 UNIT #13**

**NFPA 921 Guide for Fire and Explosion Investigations 2004 Edition**

**Objective:** Given an examination the participant shall demonstrate a knowledge and understanding of physical evidence in the field of fire investigation.

**Reading/study assignment:** NFPA 921 Guide for Fire and Explosion Investigations, 2004 Edition, pp. 921-122 through 921-131 (Chapter 16)

### **Study/reference questions:**

Why should consideration be given to temporarily placing removed ash into bags, tarps, or other suitable containers?

How should chain of custody be passed?

Who makes the decision of what evidence to collect at the incident scene?

What is physical evidence?

Who else may also collect evidence at a fire scene?

Why are comparison samples important?

When should a comparison sample be collected & will you always have a comparison sample?

When would an exemplar be used as a comparison sample?

What part of the scene should be considered physical evidence?

What is the purpose of physical evidence documentation?

How can a canine/handler team assist the fire investigator and can they always be used?

Who has the responsibility for preservation of the fire scene?

Potential evidence may include what?

Where should a comparison sample be collected from?

What does a comparison sample allow a lab to do?

What are fire patterns and are they physical evidence?

What is artifact evidence and how may it be used?

How can you protect evidence?

What role responsibility do fire suppression personnel have in reference to evidence?

What are GC and MS?

What does preservation of evidence mean and how should it be done?

How may overhaul affect the fire scene and what does overhaul conflict with?

How may salvage affect the fire scene and what should be avoided?

How does movement of knobs and switches affect evidence?

How does limiting access affect evidence?

In addition to yourself, the fire investigator, who else may collect evidence from the fire scene?

What are some evidence containers and what determines the selection of a container?

What is the role and responsibility of the fire investigator in reference to the scene & evidence?

When can contamination of evidence occur?

What is the fire investigator's responsibility for locating evidence during a fire investigation?

How does contamination of evidence by containers occur and how may it be avoided?

How does contamination of evidence during collection occur and how can it be avoided?

What practical considerations are relative to evidence?

What are some of the characteristics of liquid accelerants?

Why should evidence not be packed directly in loose packing materials such as "peanuts" or shredded paper?

What determines the method of collection of fire investigation evidence?

What do the following terms refer to in reference to evidence and evidence collection?

Physical state, Physical characteristics, Fragility, Volatility

When should evidence be documented and how may this be accomplished?

What solid material with absorbed liquids may be collected for liquid accelerant testing?

What problems may be associated with the collection of solid samples for accelerant testing?

How and why are canine teams used in fire scene evidence collection?

Where and how would a fire investigator collect gaseous samples?

When, why and how would the fire investigator collect electrical equipment and components and what precautions should be taken prior to and in reference to this evidence?

What appliances or small electrical equipment may be collected from a fire scene, why would you collect these and what precautions should be taken in reference to this evidence?

What determines an appropriate evidence container and what should the evidence container do?

If evidence in a criminal case is of no further value, may it be disposed of?

What are some liquid and solid accelerant evidence containers and what is the concern in using these evidence containers?

What is traditional forensic physical evidence and what should the fire investigator do with it?

What physical state may accelerants be found in?

How does contamination of evidence by fire fighters occur and how can it be avoided?

How may the fire investigator collect liquid samples for accelerant testing?

Why would solid evidence be collected for liquid accelerant testing?

What is the recommended container for liquid and solid accelerant evidence?

Where and when would you use metal cans as evidence containers and what are some advantages and disadvantages of using these containers?

Should sealed evidence bags not intended for accelerant testing be opened during storage? Why or why not?

Where and when would you use glass jars as evidence containers and what are some advantages and disadvantages of using these containers?

Where and when would you use special evidence bags as evidence containers and what are some advantages and disadvantages of using these containers?

Where and when would you use common plastic bags as evidence containers and what are some advantages and disadvantages of using these containers?

How should physical evidence be identified and what precautions should be taken?

What is the recommended method of transporting physical evidence?

When should an investigator dispose of evidence? When should evidence not be disposed?

What should the fire investigator do in reference to shipment of physical evidence?

Should physical evidence ever be shipped and if so what precautions need to be taken?

What precautions must be taken in reference to shipment of volatile or hazardous materials?

What precautions should be taken during fire suppression?

How can the use of water and hose streams affect the fire scene?

How should evidence be stored and what precautions must be taken?

What should be done to protect the chain of custody of evidence?

What is involved in hand delivery of physical evidence and what precautions should be taken?

How long should evidence be kept?

Examination and testing of evidence may be done for what purposes?

What factors may affect the results of laboratory examinations and tests?

How must laboratory examinations and tests be performed or carried out?

How does use of power tools affect evidence?

Study the various test methods.

What should the fire investigator do in reference to sufficiency of samples?

How may comparative examination and testing and exemplars be used?

How may physical evidence be transported to the lab or testing facility?

How should an investigator dispose of evidence?

Should electrical evidence be shipped? Why or why not?