

Fire Investigation Independent Study Continuing Education

NFPA 921 UNIT #15 – Study Guide

NFPA 921 Guide for Fire and Explosion Investigations 2004 Edition

Objective: Given an examination the participant shall demonstrate a knowledge and understanding of fire cause determination.

Reading/study assignment: NFPA 921 Guide for Fire and Explosion Investigations, 2004 Edition, pp. 921-137 through 921-139 (Chapter 18)

Study/reference questions:

What should the fire investigator do in reference to process of elimination?

How should the fire investigator use the scientific method in relation to determining cause?

What is the first material ignited/initial fuel?

What does “probable” mean in relation to fire cause determination?

What does the determination of the cause of a fire involve?

Does the cause of a fire always involve a single circumstance or factor?

Can “elimination of all accidental causes” be justified? Why or why not?

How does surface-to-mass ratio relate to first material ignited?

What does “possible” mean in relation to fire cause determination?

How does the scientific method relate to fire cause determination?

The determination of a fire cause requires what? Explain.

Does a fire investigator always have all the responsibility to address all facets of cause determination?

Study the process of elimination, section 18.2 and explain.

You have determined a fire is possible or suspected, how should you list the cause?

What is thermal inertia?

What is a competent ignition source?

What must a competent ignition source generate?

What does the transmission of sufficient energy involve?

A fire cause determination should be based on what rather than absence of what?

What is ignition sequence and why is it important?

Should the fire investigator know the proper operation of an appliance involved in a fire? Why?

Why is identifying the first material ignited important?

Is the cause of a fire always the result of a single factor or circumstance? Explain.

What are some precautions in the determination of an accidental cause? Explain.

What does the process of elimination involve?

How may an initial fuel not be part of an item that failed or malfunctioned?

When may the fire investigator properly determine a fire cause by the process of elimination?

How is the heating of a potential fuel relevant to fire cause determination? Explain.

If gases or vapors are the first material ignited, how may this affect your cause determination?

What are some unusual residues mentioned in this chapter?

Can the initial fuel ignited be part of a product that fails? If so, give an example.

Why can gases and vapors cause confusion in reference to first material ignited?

What must a fire investigator do to define the ignition sequence?

How does the surface-to-mass ratio relate to ease of ignition of a fuel?

What does the ignition process involve?

How does physical configuration and surface-to-mass ratio affect the first material ignited?

What are some examples of high surface-to-mass ratio fuels?

Are the components of most buildings readily susceptible to ignition? Explain.

Why is identifying the initial fuel important? Explain.

Is the ignition sequence important? Why?

How may energy be transmitted?

How may owners or occupants assist the investigator?

When the area of origin has been identified, what should the investigator look for?

What is a competent ignition source?

How does the transmission of energy relate to cause determination? Explain.

What are some examples of sources of ignition?

When can an investigator eliminate a potential ignition source?