Fire Investigator Independent Study Continuing Education
NFPA 921 (2004 Edition) UNIT #4 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 patterns.**

Reading/study assignment: **NFPA 921 Guide for Fire and Explosion Investigations, 2004 Edition, pp. 921-41 through 921-49 (Chapter 6, 6.15 thru 6.20.2)**

Study/reference questions:

What areas generally experience heating before other areas that result in fire patterns?

What should the investigator remember, in reference to low burn patterns, if flashover has occurred?

What are linear patterns?

What type of object and in what form may an object take that can cause heat shadowing?

What are low burn patterns and why are they relevant to an investigation?

Can heat shadowing affect lines of demarcation?

What can distorted light bulbs indicate?

What type of object and in what form may an object take that can cause protected areas?

How do heat shadowing and protected areas help the fire investigator?

What patterns are found on ceilings and how do they appear?

Is the most ceiling damage always over the point of origin?

Why should the term pour patterns be avoided and what term should be used in its place?

How does damage occur inside walls and ceilings and can or how may this affect the interpretation?

How is elevation used in relation to fire patterns?

What can produce floor patterns?

What does flashover do to preexisting floor patterns?

What patterns are found on walls and how do they appear?

On carpeting produced since 1970, how is the fire spread on this carpeting different than older carpeting?

What does burning between seams or cracks of floorboards indicate?

What can cause curling of the edges of vinyl floor tiles?

What type patterns may occur on outside surfaces?

What patterns may form on building contents?

What is fall down and how may this affect an investigation?

What are V patterns, how doe they occur, what effects there angles and what do the angles mean?

What causes an inverted cone pattern?

How should inverted cone patterns be interpreted and what type fuels may produce them?

Will flashover and full room involvement always produce relatively uniform depths of char or calcinations? Why or why not?

What is pattern geometry, how are patterns formed, and is this based on scientific research?

What relationship does natural gas have to inverted cone patterns?

What is an hourglass pattern and how are they formed?

What are and what causes circular shaped patterns?

What may patterns on the bottoms of horizontal surfaces indicate and how will these patterns appear?

What are irregular patterns and what may cause them?

Would irregular patterns on different types of flooring possibly appear differently?

What is a U pattern and how are they formed?

What are truncated cone patterns and how are they formed?

How may patterns be generated by suppression?

What should be done if ignitable liquids are suspected to be associated with irregular patterns?

What are doughnut shaped patterns and what may cause them?

Will melted solids possibly produce patterns similar to liquids?

What are pointer and arrow patterns?

How and in what way will pointer and arrow patterns help the investigator?

What are the characteristics of commercial fuel gases and what patterns may they create?

What are saddle patterns, where are they found and what causes them?

What type patterns will flashover or full room involvement produce?

What are trailers, why are they used, what products may be used for a trailer, and what type patterns do they produce?

What is a protected area and why do they occur?

What are protected floor areas, what do they result from, and what patterns may be developed by them?

What type patterns can fuel gas jets produce?

What is an area pattern and what can produce them?

How can certain types of patterns be used to determine concerning objects during a fire?

What causes heat shadowing?

Where may fire patterns be located?

Where are fire patterns often found?

What are flash fires and what type patterns do they create?

What should the investigator do to help interpret suppression generated fire patterns?

Are secondary fuel fires always at or near the ignition source of the gas or vapor that caused a flash fire?

What is material distortion?

What is the difference in the appearance of various wattages of heated, distorted light bulbs?

What can metal construction elements indicate for the fire investigator?

What is a U pattern and how are they formed?

What are truncated cone patterns and how are they formed?