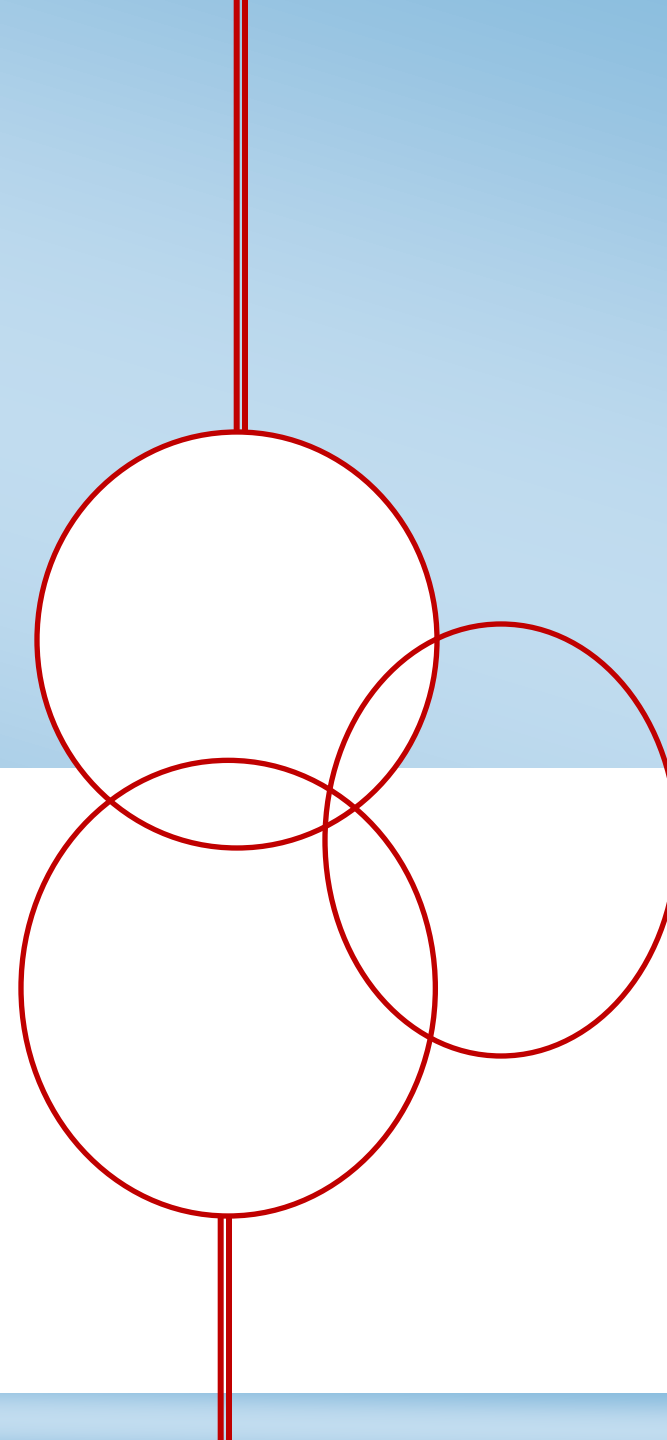


EMERGING TRENDS

(What's New in *Kirk's Fire Investigation*, 8th Edition)

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Approaches Seminar
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Presentation Goals and Objectives

- ◆ Track the emerging trends in forensic fire investigation
- ◆ Provide an insight into the **working** table of contents for Kirk's 8th Edition
- ◆ Allow input into the **working** draft (photos, case studies, references)
- ◆ Share essential references



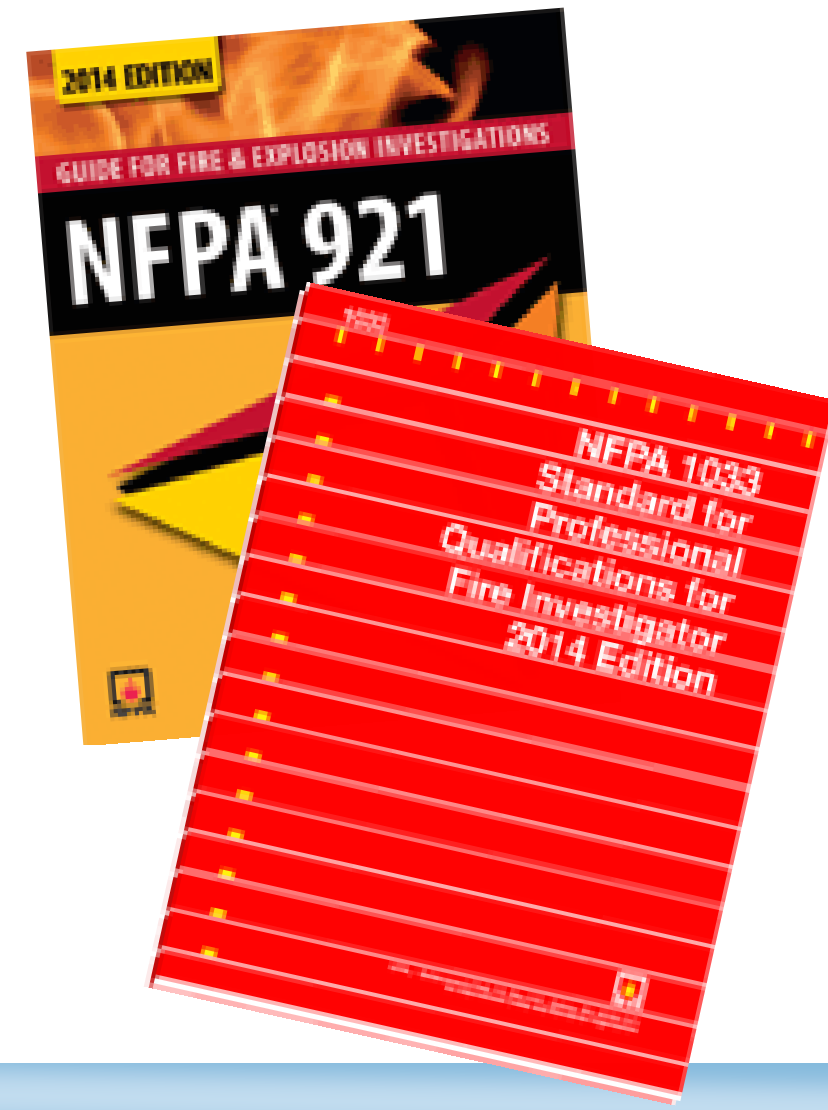
Overview

1. What's New?
2. Need for Science?
3. Fire Patterns
4. Documentation
5. Fire Scene Analysis
6. Analytical Tools
7. Motor Vehicles



The Quick List

- ◆ New Co-Authors – John DeHaan, David Icove, Gerald Haynes
- ◆ Merger of the chapters from *Kirk's 7th* and *Forensic Fire Scene Reconstruction 3rd*
- ◆ Updated references
- ◆ Cross-referenced to NFPA 1033 (2014) and 921 (2014)
- ◆ FESHE and NFPA compatible format
 - Learning objectives for each chapter
 - Key words highlighted and defined in margins
 - Lesson plans and exam banks for instructors



NFPA 1033 Matrix

NFPA 1033 identifies the professional level of job performance requirements for fire investigators. This standard specifies the minimum job performance requirements for service as a fire investigator in both the private and public sectors. Job performance requirements (JPRs) for each duty are the tasks an investigator must be able to perform to successfully carry out that duty and are summarized in the following matrix:

Professional Levels of Job Performance for Fire Investigators as Cited in NFPA 1033, 2009 Edition	
General Requirements for a Fire Investigator	<ul style="list-style-type: none"> 4.1.2 Employ all elements of the scientific method as the operating analytical process 4.1.3 Complete site safety assessments on all scenes 4.1.4 Maintain necessary liaison with other interested professionals and entities 4.1.5 Adhere to all applicable legal and regulatory requirements 4.1.6 Understand the organization and operation of the investigative team and incident management system
Scene Examination	<ul style="list-style-type: none"> 4.2.1 Secure the fire ground 4.2.3 Conduct an interior survey 4.2.4 Interpret fire patterns 4.2.5 Interpret and analyze fire patterns 4.2.6 Examine and remove fire debris 4.2.7 Reconstruct the area of origin 4.2.8 Inspect the performance of building systems 4.2.9 Discriminate the effects of explosions from other types of damage
Documenting the Scene	<ul style="list-style-type: none"> 4.3.1 Diagram the scene 4.3.2 Photographically document the scene 4.3.3 Construct investigative notes
Evidence Collection/ Preservation	<ul style="list-style-type: none"> 4.4.1 Utilize proper procedures for managing victims and fatalities 4.4.2 Locate, collect, and package evidence 4.4.3 Select evidence for analysis 4.4.4 Maintain a chain of custody 4.4.5 Dispose of evidence
Interview	<ul style="list-style-type: none"> 4.5.1 Develop an interview plan 4.5.2 Conduct interviews 4.5.3 Evaluate interview information
Post-Incident Investigation	<ul style="list-style-type: none"> 4.6.1 Gather reports and records 4.6.2 Evaluate the investigative file 4.6.3 Coordinate expert resources 4.6.4 Establish evidence as to motive and/or opportunity 4.6.5 Formulate an opinion concerning origin, cause, or responsibility for the fire
Presentations	<ul style="list-style-type: none"> 4.7.1 Prepare a written report 4.7.2 Express investigative findings verbally 4.7.3 Testify during legal proceedings 4.7.4 Conduct public informational presentations

Sources: NFPA 1033, 2009 ed.; S. Sklar presentation, 2008.

NFPA 1033 Matrix Cross-Referenced

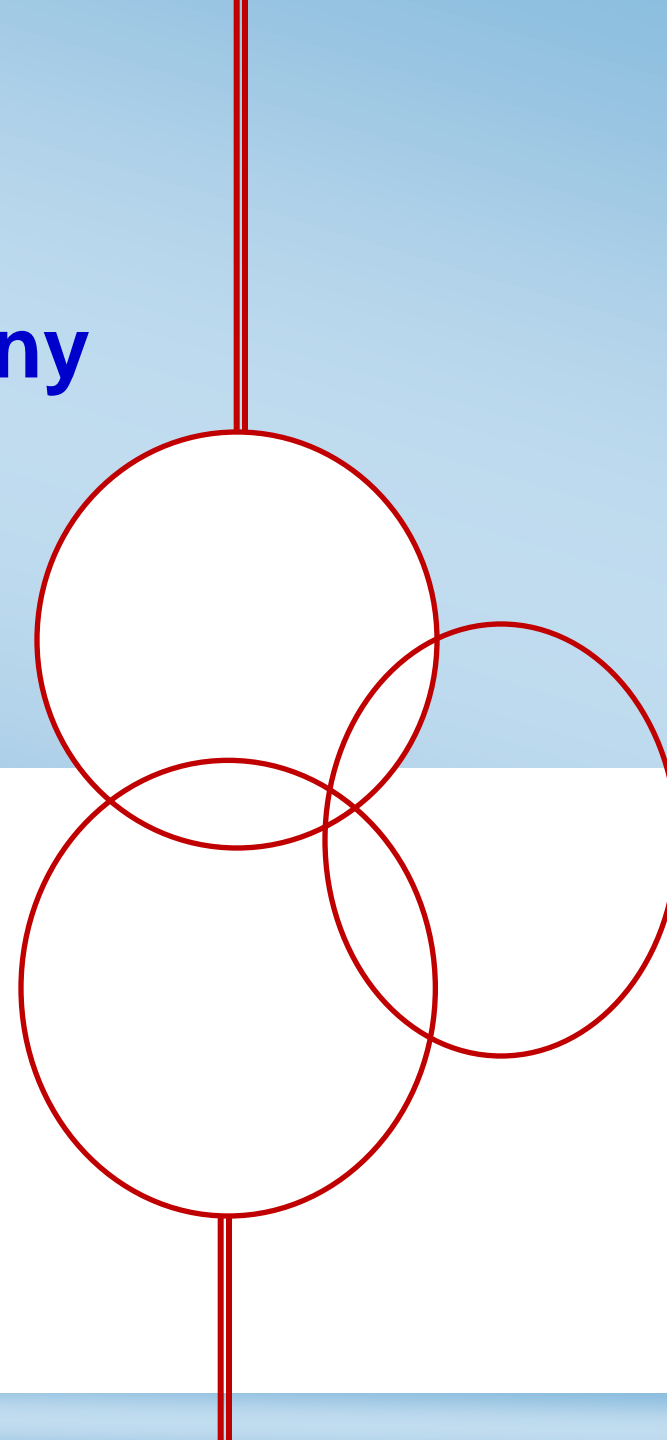
Kirk's 8th Edition Table of Contents (Draft)

KIRK8 CHAPTER	Kirk 7/e Chapter	FFSK 3/e Chapter
1 - Principles of Fire Investigation Introduction	1	1
2 - Basic Fire Science The Elementary Chemistry of Combustion Combustion Properties of Liquid and Gaseous Fuels Combustion Properties of Solid Fuels Basic Fire Dynamics	2 4 5	2
3 - Chemical Fires and Explosions Explosions and Explosive Combustion Chemical Fires and and Hazardous Materials	12 13	
4 - Sources of Ignition	6	
5 - Fire Scene Examination and Analysis Fire Pattern Analysis		3
6 - Fire Scene Documentation Fire Scene Documentation		4
7 - Fires by Property Type Structure Fires and their Investigation Fire Behavior and Building Construction Grass and Wildland Fires and their Investigation Automobile, Other Motor Vehicle, and Ship Fires	7 3 8 9	
8 - Forensic Laboratory Services Laboratory Services	14	
9 - Electrical Causes of Fires	10	
10 - Fire Testing	11	8
11 - Arson Crime Scene Analysis	16	5
12 - Fire-Related Deaths and Injuries	15	7
13 - Fire Modeling		6
Appendices A. Glossary B. Mathematics Refresher C. Websites D. Material Properties	D	A B C
INDEX		

EMERGING TRENDS

Factors Involving Expert Testimony

- 1) Challenges
- 2) Expert Reports
- 3) Guidelines and Standards
- 4) Certification and Licensing
- 5) Spoliation



Factors Impacting Fire Investigator Expert Testimony

- ◆ 1. Daubert/Frye Challenges: How does one meet challenges when qualify and testify as an Expert Witness?
- ◆ 2. Expert Reports: What are the best practices for preparing and writing expert reports?
- ◆ 3. Guidelines/Standards: What are the present day standards that apply to expert reports and testimony?
- ◆ 4. Certification and Licensing: What are the certifications and licensures needed for expert witnesses?
- ◆ 5. Spoliation: What are the pitfalls for a fire investigator relating to expert testimony?

1. Daubert / Frye Challenges

- ◆ Problem: Fire investigators offering courtroom testimonies are being challenged more often through *Daubert/Frye* or *in limine* motions
- ◆ Discussion:
 - What is the rationale for a typical challenge?
 - What can an investigator do to prepare for these challenges?
 - What emerging future issues do you foresee?
- ◆ Resource Materials: “Experts Beware”

2. Expert Reports

- Problem: The requirements and demands for Expert Reports in civil and criminal courts are more prevalent
- Discussion:
 - ▣ What are Expert Reports and what format should be used?
 - ▣ What are the best practices for preparing and writing expert reports in civil and criminal court cases?
 - ▣ What should we do about draft reports?
- Resource Materials: Draft Reports, IAAI Presentations, Rule 26 Updates

3. Guidelines and Standards

- ◆ Problem: Guidelines and Standards are eclipsing the fire investigation field
- ◆ Discussion:
 - What is the difference between guidelines and standards?
 - What are the present day standards that apply to expert reports and testimony?
 - What are their hierarchy
- ◆ Resource Materials: NFPA, ASTM, IAAI

4. Certification and Licensing

- ◆ Problem: Fire investigators are meeting tougher requirements for certifications and licensures
- ◆ Discussion:
 - What are the certifications and licensures needed for expert witnesses?
 - CFI, FIT, CFEI, CFII, CVFI, CFPS, PE, DFE
- ◆ Resource Materials: NFPA, IAAI, NAFI, NAFE, state licensing boards

5. Spoliation

- ◆ Problem: Fire investigators are confronted with decisions regarding how to protect evidence from spoliation
- ◆ Discussion:
 - What is spoliation considered to be in my state?
 - What professional guidelines/standards exist that provide guidance?
 - What are the pitfalls for a fire investigator relating to expert testimony?
- ◆ Resource Materials: U.S. Law Compendium

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