Conquering the 'Unknown': Addressing Undetermined and Unknown Origin and Cause Entries in Fire Incident Reporting

Electronic "Toolkit" of Resources for the First Responder

(E-Book Format)

Introduction: Why NFIRS Matters

By: Battalion Chief (Ret.) Robert Avsec

One of my former mentors, Deputy Chief (Ret.) Jim Graham of the Chesterfield County (VA) Fire and EMS Department, was a huge proponent for the use of information whether it was on a fireground operation or developing a new training program or addressing budget reductions. One of his favorite sayings—one that stays with me to this day—was:

> *"We must constantly strive to become better at data-driven decision making, instead of following the 'I think, I feel, or I believe model."*

But he usually followed that up with a caveat that we should also strive to ensure that we had good information, not just any information.

Profession. According to Oxford English Dictionary, profession is a noun for which one definition is: a paid occupation, especially one that involves prolonged training and a formal qualification: his chosen *profession* of teaching; he was a lawyer by *profession.* Many firefighters and officers refer to the Fire and EMS world as their chosen profession, and while we've made many positive improvements over the years to buttress that belief, we still have much room for continued improvement. One significant area needing improvement is our ability to collect accurate, complete, and meaningful data from across the USA about fires: their consequences; our efforts to extinguish them; and our efforts to prevent them.

In other professions, e.g., research, engineering, medicine, etc., there is a strong bias for using data to support any position, conclusion or recommendation (Data-driven decision making). We must improve our ability to collect and analyze data if we are to continue our efforts at enhancing the status of our profession and meeting today's many challenges, such as, making the case for financial support from our communities, policy changes, and code and legislative changes.

A Data-Driven Success Story

In 1964 and 1966, public pressure grew in the United States to increase the safety of cars, culminating with the publishing of *Unsafe at Any Speed*, by Ralph Nader, an activist lawyer, and a report from the National Academy of Sciences entitled, *Accidental Death and Disability—The Neglected Disease of Modern Society*.

That 37-page booklet, commonly referred to as the "White Paper," addressed the huge and costly problem of accidental deaths and injuries in the United States. In 1965, there were 52 million accidental injuries leading to 107,000 deaths, 10 million temporarily disabled persons, and 400,000 permanently impaired individuals. Those deaths and injuries cost an estimated $18 billion (about $129 billion in 2012 dollars). The White Paper stated that accidents were the leading cause of death for persons aged 1-37, and the fourth leading cause of death for all ages in 1965. For people under 75, **motor vehicle accidents** constituted the **leading cause of accidental death**.

By 1966 our society finally had enough of the deaths and destruction from automobile crashes on the highways and by-ways of America. The United States Congress enacted the **National Traffic and Motor Safety Act** in 1966.

The National Traffic and Motor Vehicle Safety Act empowered the federal government to set and administer new safety standards for motor vehicles and road traffic safety. The Act created the National Highway Safety Bureau (now the National Highway Traffic Safety Administration). The Act was one of a number of initiatives by the government in response to increasing number of cars and associated fatalities and injuries on the road following a period when the number of people killed on the road had increased 6-fold and the number of vehicles was up 11-fold since 1925.

So what happened? We as a nation took a systematic approach to solving the problem that resulted in changes such as:

Creation of the modern trauma care and the Emergency Medical Services in the United States;

Engineering changes to automobiles to protect occupants: lap/shoulder belt restraint systems; air bag restraint systems; energy-absorbing steering columns; vehicle chassis construction that dissipates crash energy to protect vehicle occupants;

Improved road construction design that included: guard rails to prevent vehicles from striking stationary objects, e.g., bridge abutments, and vehicles from leaving the road, e.g., tight curves, and crossing into on-coming traffic.

The reduction of the rate of death attributable to motor-vehicle crashes in the United States represents the successful public health response to a great technologic advance of the 20th century—the motorization of America.

There's the **"why"** (unacceptable numbers for deaths, injuries, and costs) and the **"what"** (the measures taken to reduce those numbers) concerning our nation's response to accidental death and injuries. So **how** did we get there?

Data.

Data collected from across the nation from hospitals, state health departments, law enforcement agencies, and many other organizations that help us understand the accidental death and injury problem by answering the questions: who, what, when, where, and how?

Data that was analyzed and molded into meaningful information, information that drove the thousands of decisions that came after 1966 that had a positive impact on reducing accidental deaths and injuries in the United States.

The American Fire Service: Starving for Information

The United States has known it's had a fire problem since at least 1948, when President Harry S. Truman received the [Report of the Continuing Committee of the President's Conference on Fire Prevention and Education](). Our 33rd president responded to the report by stating:

> *"The serious losses in life and property resulting annually from fires cause me deep concern. I am sure that such unnecessary waste can be reduced. The substantial progress made in the science of fire prevention and fire protection in this country during the past forty years convinces me that the means are available for limiting this unnecessary destruction."*

The authors of that report, along with the participants at the five Wingspread symposiums since — ***Wingspread Conference on Fire Service Administration, Education and Research*** (1966), Wingspread II (1976), III (1986), IV (1996), and V (2003) — have all said the same thing when it comes to addressing the fire problem in America:

> *"Fire prevention and accident prevention employ the same techniques. – Over the years, the approaches to the accident problem have been popularly designated as the Three E's of Safety – Engineering, Enforcement, and Education. These 'Three E's' are equally applicable to fire prevention and protection."*

(Two additional "E's" have been added recently by the United States Fire Administration: ***Economic incentive:*** *Working to incorporate incentives that support risk reduction such as tax incentives for installation of residential sprinklers or free smoke alarms; and* ***Emergency response:*** *Support the existence of an adequately staffed, equipped and trained group of emergency responders).*

The National Commission on Fire Prevention and Control, in its landmark report *[America Burning]()* (1973), included a number of critical, forward-looking statements about **data being a vehicle for change**:

- The Commission worked in a field *where statistics are meager* (Translation: we knew we had a problem, but we had no tools to analyze it).
- Develop a ***comprehensive national fire data system***, which will help establish priorities for research and action.
- If these efforts are carried out, we predict a 5% reduction in fire losses annually until the Nation's losses have been halved in about 14 years.
- The recommendations emphasize prevention of fire through implementation of local programs.

The publication of *America Burning* provided the catalyst for Public Law 93-498, the **Federal Fire Prevention and Control Act of 1974**, which in turn led to the establishment of the U.S. Fire Administration (USFA) and the National Fire Academy (NFA).
One of the critical first actions taken by the newly established USFA was the creation and implementation of the National Fire Incident Reporting System (NFIRS) program, the first attempt at creating a national data collection and analysis system for the fire service in the U.S.

What Happened Next…and What Has to Happen in the Future

We have made some remarkable improvements to fire safety in the forty years since America Burning was published. Many of those improvements, e.g., building and fire codes changes, residential fire sprinklers, smoke detectors, and many more, have been made possible because of the data that's been collected and analyzed through NFIRS. In more recent years, that data from NFIRS has been instrumental in the fire service getting the first meaningful financial support from the federal government in the form of the **Assistance to Firefighters Grant** (AFG) and **Staffing for Adequate Fire and Emergency Response** (SAFER) Grant programs.

But we are far from done. Roughly 3,500 civilians die each year from preventable fires and hundreds of thousands more are significantly injured. Preventable fires are still causing hundreds of billions of dollars in property loss annually. Noted public safety risk reduction expert, Gordon Graham sums it up nicely, *"If it's predictable, it's preventable."* So how can we predict it so that we might prevent it?

Data.

Every fire has a story to tell, but every fire doesn't have someone "hearing" and "seeing" its story and then in turn "telling" the story by entering a complete and accurate account of the fire—the "story"—into NFIRS in the form of data. We can only get better at preventing the next fire, helping occupants deal with a fire or helping the fire service to attain the proper tools for dealing with a fire when we have a central database that can be searched for information and statistics for every community, regardless of size, in the USA.

We don't have that today. The search for meaningful fire data can often be frustrating because the forms are incomplete or contain bad data or don't even get completed. (Approximately 30-40 percent of fire departments in the United States don't even submit fire data to NIFRS; it's a voluntary process and they choose not to participate).

Regardless of the reason, the fire service and the people we're sworn to protect are the big losers. Proper and complete completion of the NFIRS form is vital to the mission and is the key to working for a fire-safe America.

Which Brings Us to the Purpose of this Document

The U.S. Department of Homeland Security (DHS) awarded a grant to the National Association of State Fire Marshals (NASFM) for the stated purpose of making significant improvements to the completeness and accuracy of data entered into NFIRS.

NASFM, through its Fire Research and Education Foundation, conducted a project, **"Conquering the Unknown: Addressing Undetermined and Missing Origin and Cause Entries in Fire Incident Reporting"**, to determine:

- Why are so many NFIRS reports submitted with **Undetermined** or **Missing** in the data entry fields applicable to a fire's origin and cause?
- Are there systemic issues with NFIRS and the report data fields and protocols for data entry that contribute to the issue of **Unknown** or **Missing** data entries?
- What are the characteristics of good NFIRS data entry by fire departments and how can we categorize these "best practices" and promulgate them across the fire service?
- What training and educational opportunities currently exist for firefighters and officers to become more knowledgeable and skilled in determining a fire's origin and cause so that they can more frequently submit fire data to NFIRS that contains the proper entries for fire origin and cause?

Taking our cue from that final item in the bulleted list (What training and educational opportunities…), we've created this **Electronic Toolbox of Resources for First Responders**. We located the "tools" for inclusion by conducting Internet searches, soliciting ideas from allied fire service organizations, and asking for input from the various professional networks of team members. In it you will find a variety of available training and educational opportunities, tools, and resources that can aid you in better preparing yourself to:

- Have a better understanding for using and getting the most out of NFIRS; and
- Become more knowledgeable and skilled in determining a fire's origin and cause—as a first responder, not a trained and experienced fire investigator—so that you can accurately and completely categorize those elements as you enter data into NFIRS.

This manual contains a descriptive narrative and contact information (and cost where applicable) for:

- Self-study or on-line NFIRS training;
- Instructor-led NFIRS training;
- Self-study training for determining fire origin and cause;
- Instructor-led training for determining fire origin and cause; and
- College level courses and degree programs for determining fire origin and cause.

The resources listed in this manual are in no manner indicative of every type of training or training delivery methodology for determining fire origin and cause that exists. Rather, we've designed it as a "sampler" that seeks to provide you with some of the more commonly available options for the type of training you're looking for.

Today, we have greater ability to collect and analyze data from even the most remote locations on the planet using through the use of an ever expanding cadre of technology that includes wireless computing devices, wireless telephones, and GPS. Improvements in technology, however, cannot minimize the significance of the most important "piece" in the fire data collection "puzzle": the informed and educated firefighter. The quality of the data outputs from NFIRS can only be as good as their data inputs, that is, their on-scene observations, evaluations, and determinations regarding the fire's origin and cause.

About the Author

Battalion Chief Robert Avsec (Ret.) served with the Chesterfield (Va.) Fire & EMS Department for 26 years. He was an active instructor for fire, EMS, and hazardous materials courses at the local, state, and federal levels, which included more than 10 years with the National Fire Academy. Chief Avsec earned his Bachelor of Science degree from the University of Cincinnati and his Master of Science degree in executive fire service leadership from Grand Canyon University. He is a 2001 graduate of the National Fire Academy's Executive Fire Officer Program.

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United States Fire Administration

National Fire Incident Reporting System (NFIRS) Training

You can access any website by Ctrl + Click on the applicable screen shot with your mouse.

NFIRS User Information

National Fire Incident Reporting System

| System Information | Documentation | Training | Support Center | Web-based Tools | User Section | Vendor Section |

Documentation

Reference Guides
Design Documentation
Incident Type/Module Rules
Entity Relationship Diagram

**RELATED DOCUMENTATION
NFIRS 5.0 USERS**

- USFA Software User Guides
- USFA Web Tools User Guides

LINKS OF INTEREST

- NFIC
- Data Center (NFDC)

USFA : NFIRS : Documentation : Reference Guides

NFIRS 5.0 Reference Guide

NFIRS 5.0 Reference Guide

This handbook is a component of the National Fire Incident Reporting System (NFIRS) Version 5.0. It provides both instruction for reporting data and understanding of the data elements collected by the system. It also serves as a reference for the coding of the data.

The NFIRS 5.0 Complete Reference Guide (CRG) has been updated and posted below.

The CRG is consistent in content with the January 2013 Specification Release Cycle and is intended for use by NFIRS users beginning January 1, 2013. This version of the document supersedes all previous versions. Those using older versions of the NFIRS 5.0 Handbook or draft versions of the CRG should replace them with the January 2013 CRG version as many changes and corrections have been made in the revised guide.

If corrections to the text of the Complete Reference Guide must be made, an updated CRG document file will be posted as well as individual section or page to which the correction was made. For those who downloaded and printed the entire CRG, refer to the **Complete Reference Guide Notice** section on this page to obtain file update information.

NFIRS 5.0 Reference Guide; includes the **Coding Questions and Answers Guide** that provides information on coding NFIRS 5.0 incident reports in a question-and-answer format.
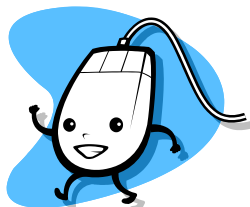
You can access any website by Ctrl + Click on the applicable image with your mouse.

National Fire Incident Reporting System

| System Information | Documentation | Training | Support Center | Web-based Tools | User Section | Vendor Section |

Web-based Tools

Report Incidents (DEBI)
Summary Output Reports Tool
Bulk Import Utility (BIU)
Bulk Export Utility (BEU)
System Admin Tools
User Services
Data Warehouse Access Admin Tool

USFA : NFIRS : Web-based Tools : **NFIRS 5.0 Web-based Tools**

NFIRS 5.0 Web-based Tools

Welcome to the USFA NFIRS 5.0 Web-based Tools section. General Information about the new web-based tools is provided below.

NFIRS 5.0 Web-based Tools

New web-based tools which provide reporting and data transmission capabilities through the use of standard Internet technology are now being offered to State Program Managers participating in the USFA NFIRS 5.0. Following the test period of each tool, a phased approach for its release and implementation allows State Program Managers to review system requirements and plan their state's user participation.
If State Program Managers choose to do so, they may assign to selected users in their state the necessary permission for one or more of the new web-based tools. The user must have an activated NFIRS 5.0 User account with necessary permissions assigned for the tool use or action.
Using the web-based NFIRS 5.0 Tools requires Internet connectivity, a browser on and PC that meets necessary system requirements as outlined for each tool s information page.

National Fire Incident Reporting System

| System Information | Documentation | Training | Support Center | Web-based Tools | User Section | Vendor Section |

Documentation

Reference Guides
Design Documentation
Incident Type/Module Rules
Entity Relationship Diagram

**RELATED DOCUMENTATION
NFIRS 5.0 USERS**

- USFA Software User Guides
- USFA Web Tools User Guides

LINKS OF INTEREST

- NFIC
- Data Center (NFDC)

USFA : NFIRS : **Documentation**

Documentation

The USFA makes available the documentation that will assist Users in reporting NFIRS 5.0 data and to assist vendors and third party custom integrators developing software to meet the NFIRS 5.0 specification.

Documents are available in standard formats indicated by the logo accompanying the document link. Documents may be downloaded and saved to the user's hard drive, or viewed On-line as desired. File size varies. Select a link below to access the page which contains the desired documentation.

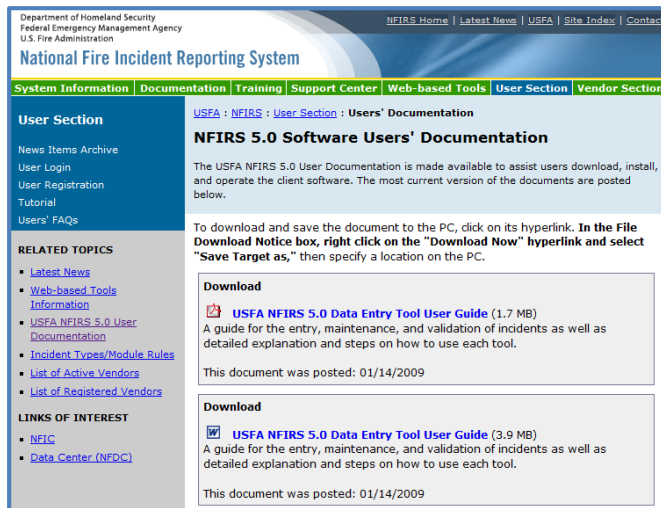**AVAILABLE GUIDES AND SYSTEM DOCUMENTATION**

- Current (as of 2013) NFIRS 5.0 Design Documentation (for developers)
- NFIRS 5.0 January 2012 Design Documentation
- NFIRS 5.0 January 2009 Design Documentation
- NFIRS 5.0 January 2008 Design Documentation

NFIRS Software Tutorial
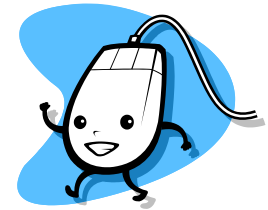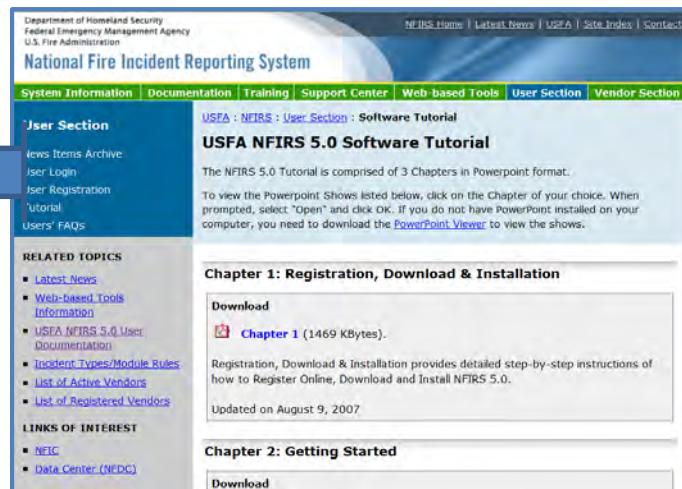
You can access any website by Ctrl + Click on the applicable image with your mouse.

Software Users' Documentation

NFIRS Data Analysis Tools

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Allied Fire Service Resources for Reporting and Information Collection

NFPA 921: Guide for Fire and Explosion Investigations

NFPA 921 sets the bar for scientific-based investigation and analysis of fire and explosion incidents. Referenced in the field, in training, and in court, it is the foremost guide for rendering accurate opinions as to incident origin, cause, responsibility, and prevention. It is intended for use by both public sector employees who are responsible for fire investigation and private sector professionals who conduct investigations for insurance companies or litigation purposes.

NFPA 921: GUIDE FOR FIRE AND EXPLOSION INVESTIGATIONS
Current Edition: 2011   Next Edition: 2014
Free access to the 2011 edition of NFPA 921
About free access

Alerts: Receive e-mail updates on this document   Manage my alerts

Committee members: Sign-in to view your documents.

| Document Information | Next Edition | Technical Committee | Technical Questions | Products Training |

Edition to display: 2011

What is NFPA 921?
NFPA 921 sets the bar for scientific-based investigation and analysis of fire and explosion incidents. Referenced in the field, in training, and in court, it is the foremost guide for rendering accurate opinions as to incident origin, cause, responsibility, and prevention. It is intended for use by both public sector employees who are responsible for fire investigation and private sector professionals who conduct investigations for insurance companies or litigation purposes. Official document scope

National Fire Information Council
Fighting Fire With Facts

email: contact@nfic.org

:: home :: membership/contacts :: news/notices :: forum :: resources :: using NFIRS data :: links ::

Resources

USFA NFIRS 5.0 Documentation:
NFIRS 5.0 Reference Guide
NFIRS Paper 5.0 Forms
NFIRS 5.0 Coding Questions Guide

USFA NFIRS 5.0 Federal Client Tool:
NFIRS 5.0 On-Line System Availability
USFA NFIRS 5.0 Latest News
Data Entry Tool Guidebook
User Registration
Data Entry Browser Interface (DEBI) Log In

USFA NFIRS 5.0 Cycle Changes and Updates:
NFIRS Preliminary January, 2013 Specification Changes and Corrections

NFIRS Enhancements:
NFIRS Enhancements Background
NFIRS Enhancements Overview
NFIRS Data Entry Browser Interface Q & A

Estimated Dollar Loss:
ICBO Building Valuation Table
Determining Replacement Cost
Estimating Home Values

The **National Fire Information Council** (NFIC) is committed to enhancing public safety through the collection and dissemination of timely, accurate, and useable fire-related emergency response information. http://www.nfic.org/resources.html

The NFIC's Goals are:

• Encourage every fire service organization to institute the NFIRS program.

• Provide leadership to fire service organizations on the collection and use of fire-related incident information.

• To reduce the vulnerability to our nation's citizens by identifying the fire-related problems facing our communities.

• Equip fire service leaders with necessary information to effect change.
• Leverage technology to enhance and sustain the data exchange resulting in highly accurate and timely information.

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National Fire Academy (NFA) On-line: NFIRS User Training—No Cost

National Fire Incident Reporting System (NFIRS) Self-Study (Q494)

Serving as an introduction to version 5.0 of the National Fire Incident Reporting System (NFIRS), this self-study course provides an overview of the data collection system, its modules, and data conversion issues. Coding scenario exercises are also included. *This training program is geared to allow you to proceed at your own pace.*

NFIRS is the comprehensive method for detailed tracking of fire, emergency, and related incident responses. The information that can be recorded in NFIRS can be used by your emergency services organization to:

- Track current workloads, develop response metrics and statistics, and help with current asset management.
- Provide a basis for identifying, developing and implementing new programs, or redirect existing programs.
- Generate and support data that may justify the acquisition of additional resources.
- Help reduce the needless loss of life and property in both your jurisdiction and throughout the United States.

How to Enroll

NFIRS 5.0 Self-Study (Q494) is available through NFA Online. Once enrolled, students may download the course content and take an exam to achieve a National Fire Academy (NFA) Certificate of Completion.   Enroll Now »

NFIRS 5.0 Self-Study Course Materials

For students not wishing to enroll, course materials for Q494 may be downloaded below. The post-test is not included. A certificate of completion from the NFA may be earned through NFA Online only.

Adobe Acrobat (PDF)/Other Help

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Downloading Course PDF Files. You can download all the PDF files for Q494 (TOC, Introduction, Overview, Units 1-11, Summary, and Appendices A & B)

- [Download all PDF files below](#) (ZIP, 19.6 Mb); **Or** You can download individual PDF files using the links below.

NFIRS 5.0 Self-Study Modules and Appendices

[Table of Contents, Introduction, and Overview](#) (PDF, 353 Kb)

[Unit 1 - Basic Module: NFIRS-1](#) (PDF, 2.1 Mb)

[Unit 1S - Supplemental Form: NFIRS-1S](#) (PDF, 182 Kb)

[Unit 2 - Fire Module: NFIRS-2](#) (PDF, 490 Kb)

[Unit 3 - Structure Fire Module: NFIRS-3](#) (PDF, 1.8 Mb)

[Unit 4 - Civilian Fire Casualty Module: NFIRS-4](#) (PDF, 1.6 Mb)

[Unit 5 - Fire Service Casualty Module: NFIRS-5](#) (PDF, 1.6 Mb)

[Unit 6 - Emergency Medical System (EMS) Module: NFIRS-6](#) (PDF, 1.8 Mb)

[Unit 7 - HazMat Module: NFIRS-7](#) (PDF, 1.7 Mb)

[Unit 8 - Wildland Fire Module: NFIRS-8](#) (PDF, 1.7 Mb)

[Unit 9 - Apparatus or Resources Module: NFIRS-9](#) (PDF, 1.2 Mb)

[Unit 10 - Personnel Module: NFIRS-10](#) (PDF, 1.0 Mb)

[Unit 11 - Arson & Juvenile Firesetting Module: NFIRS-11](#) (PDF, 2.0 Mb)

[Summary](#) (PDF, 63 Kb)

[Appendix A: Scenario Answers](#) (PDF, 4.7 Mb)

[Appendix B: Pretest Answers](#) (PDF, 57 Kb)

The post-test for this course and a National Fire Academy certificate of completion is available through [NFA Online](#).

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NFA: Introduction to NFIRS 5.0 (F0497)
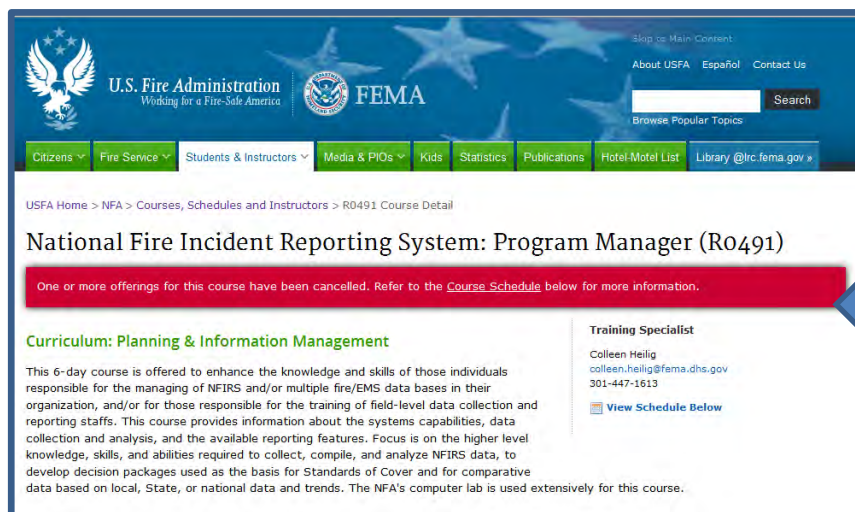
This 2-day course teaches students how to use standardized forms to achieve uniformity in their incident and activity reporting. This training program is designed specifically to support local fire service organizations, and will assist them in providing data to their management and to decision makers, as well as to their State uniform fire reporting system. At a local level, the NFIRS data can be used to:

- Describe a community's fire problem;
- Support budget requests or fundraising goals;
- Improve decision-making for allocation of resources;
- Assist in planning for future fire protection;
- Help identify opportunities for scheduling nonemergency activities;
- Evaluate code enforcement programs; and
- Identify target audiences for public fire education programs.

How to Enroll: The administration and delivery of this NFA course is now the responsibility of the State Training Facility (STF) for each of the individual states. Contact your state's STF for course availability.

NFA: Introduction to NFIRS 5.0 (W0497)

This course is the "twin sibling" of F0494 (above) and is only available during NFA-Sponsored State Weekends at the NFA's Emmitsburg, Maryland campus. Contact your state's STF for course availability.

NFA: NFIRS Program Manager (R0491)

Not an entry-level class. This 6-day course is offered to enhance the knowledge and skills of those individuals responsible for the managing of NFIRS and/or multiple fire/EMS data bases in their organization, and/or for those responsible for the training of field-level data collection and reporting staffs.

This two-day course is designed for experienced NFIRS users who need enhanced fire incident analysis and reporting skills. **This is not an introductory level course**. Exclusive use of the computer classroom provides an environment where students receive step-by-step instruction in Excel, pivot table preparation, querying the NFIRS database and publishing pivot tables and charts on the web.

NFA: Fire Origin & Cause Training for First Responders—Self-Study On-line

Fire Investigation Techniques

What is interFIRE VR™?

interFIRE VR™ is a virtual reality fire investigation training program available to the fire fighting community, law enforcement and the insurance industry.
For the first time, the "best practices" from the major groups concerned with fire investigation and prevention are available in a single source. Combining the finest investigative techniques with high technology, this CD-ROM program offers a comprehensive guide from which all can work. The program encourages a "team approach" to fire investigation and contains essential information for both the novice and seasoned fire investigator.

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Material includes:

- Critical steps applied in consistently successful fire investigation programs nationwide;
- Misconceptions about fire behavior and arson fraud; and
- Information insurers maintain on a claim that can prove invaluable in the investigative process.

Program Description

SCENARIO

interFIRE VR[TM] uses "Quick Time" virtual reality technology that combines numerous high resolution film images into a single 360 degree navigable scene. This puts the student "in the shoes" of a fire investigator arriving at a fire scene. Using a computer mouse, the investigator can tour the entire fire scene, inside and out. As in any real investigation, the investigator is immediately faced with decisions that will be critical to the success of his or her investigation.

Questions to be answered include:

- Should the fire scene be examined immediately or should witness interviews begin?
- What is the best way to quickly identify high impact witnesses?
- What physical evidence is present?
- How should evidence be documented and collected?
- What assistance may be needed?

The computer program keeps track of choices and compares them to "best practices" recommended by a panel of experts. If the investigator determines that the fire was intentionally set, he or she must conduct a follow-up investigation with insurers and others who have important information. This program has a large section on insurance fraud investigation, underwriting against arson and other information of vital interest to the insurance industry.

TUTORIAL

interFIRE VR[TM] takes a student through a step-by-step process that can be applied to any fire investigation. The program shows a comprehensive outline of all the individual components of a thorough investigation. It combines the best of investigative theory with a variety of real world practices that have proven highly successful through years of actual fire investigations. The goal is to show a systematic method for investigating any fire.

The Development Team

The development of *interFIRE VR*[TM] is the result of a unique partnership between public and private organizations, including the Bureau of Alcohol, Tobacco & Firearms, and Explosives (ATF), American Re-Insurance Company, the U.S. Fire Administration, and the National Fire Protection Association (NFPA) - organizations sharing a common goal to significantly increase the baseline knowledge and skills of all fire investigators nationwide. Combining the best practices of major groups involved in fire investigation and prevention accomplished this goal.

Significant contributions were provided by the National Institute of Standards & Technology (NIST), the law firm of Butler, Burnette and Pappas, the Congressional Fire Services Institute (CFSI), the International Association of Arson Investigators (IAAI), Massachusetts State Police, and numerous fire service, law enforcement and judicial personnel in Tallahassee FL, and Rehoboth Beach and Talleyville, DE.

RESOURCE FILE

interFIRE VR^{TM} provides a repository of additional information on a wide variety of fire-related topics. There are numerous hotlinks between these three sections, which allows access to important information just when the investigator needs it.

Individuals progress at their own pace. They can study the entire process or pick and choose specific areas where they feel they need particular help. They can listen and watch experts in a variety of fields provide valuable tips on how to collect evidence, interpret burn patterns or interview a potential suspect.

Order a Free Copy Today!

To obtain a copy of *interFIRE VR*^{TM} send a request on organizational letterhead, signed by a department chief or supervisor (con't)

Please include requestor's name, rank, and name of organization, and a description of how *interFIRE*^{TM} is to be used. Letters of request can be mailed, faxed or attached to an email to USFA's Tracey Hefelfinger.

Tracey Hefelfinger
U.S. Fire Administration
16825 South Seton Avenue
Emmitsburg, MD 21727
Phone Number: (301) 447-1085
FAX: (301) 447-1178
Email: tracey.hefelfinger@fema.dhs.gov
For More Information

Visit the *interFIRE*^{TM} website (CTRL+Click on the logo)

National Fire Academy: Instructor-Led Programs for Fire Origin & Cause

Arson Detection for the First Responder

Course Description: This course covers topics which fire suppression personnel must be familiar with in order to facilitate cause and origin determination and possible subsequent investigation of intentionally set fires. Upon successful completion the student will be able to provide a clear definition of the role of initial responder organizations and to provide essential knowledge to enable them to recognize the potential of an intentionally set fire, preserve evidence, and properly report the information to appropriate officials. This course was developed by the National Fire Academy.

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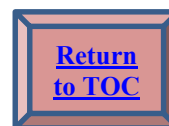
Selection Criteria: Fire suppression personnel that may be first in on scene of structure fire or other fire where recognition of suspicious activities would be an essential skill.

The administration and delivery of this NFA course is now the responsibility of the State Training Facility (STF) for each of the individual states. Contact your state's STF for course availability.

Fire Cause Determination for Company Officers (R0811)

Course Description: This 6-day course is part of the **Volunteer Incentive Program (VIP)** and addresses the basic skills needed to conduct initial scene examinations to determine causation. Upon successful completion of this course, students will be better prepared to make observations and gather information that will assist in identifying area(s) of origin and cause and assess the need for additional assistance if necessary.

Subjects include, but are not limited to, collection and documentation of information, behavior of fire, determining area of origin, accidental and incendiary fire causes, fatal fire scene examinations, motives of the fire setter, vehicle fires, legal aspects, and securing the fire scene to preserve evidence.

Selection Criteria: Company officers and command/chief officers. In addition, prospective students must meet the "VIP Program Eligibility" described on the VIP Web Page.

Applicants can access the **International Association of Arson Investigators (IAAI)** *Distance Learning Network* at cfitrainer.net CFI Trainer is an on-line training resource that provides free fire/arson investigation-related training for fire service, law enforcement and insurance personnel interested in furthering their knowledge and understanding of a wide range of fire investigation related topics. These training modules complement many of the concepts that are fundamental to the goals, objectives and learning outcomes of the courses offered in the Fire/Arson and Explosion Investigation curriculum at the National Fire Academy.

Delivery Type: 6-Day On-Campus

Prerequisites: ICS 100 level and ICS 200 level training. Preferred courses are Q462 and Q463 available through NFA Online at nfaonline.dhs.gov. Chief's signature attests that the applicant has completed this required training.

ACE Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Fire Science or Arson Investigation.

CEUs: 3.6

Post-Course Requirements: None.

Student Pre-Course Materials: 📄 http://www.usfa.dhs.gov/downloads/pdf/pcm/pcm_r0811.pdf (23K, PDF Help)

NFPA Standards: None.
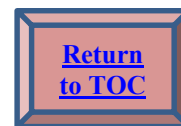
Department of Homeland Security: Instructor-Led Programs

Federal Law Enforcement Training Centers: Tuition-Free Training

Wildland Fire Origin and Cause Determination (WFOCD/FI-210)

Wildland fires result in tremendous devastation of public resources and private property. The increasing frequency of these types of fires has brought on a need for additional, specially trained fire investigators. The WFOCD is based on the recently developed certification standards and training programs for wildland fire investigators put in place by the National Wildfire Coordinating Group (NWCG).
This program culminates in a six hour practical exercise where students work as a team to investigate and document a wildland fire case. Teams will determine the fire origin, collect evidence, conduct interviews, and document the case.

Type: Advanced

Length: 4.5 days

Curriculum
- Professional Ethics For Fire Investigators
- Fire Behavior and Burn Pattern Interpretation
- Fire Scene Evidence, Identification, Preservation, and Collection
- Fire Investigation Methodology
- Witness Interviewing
- Ignition Factors and Sources
- Arson Recognition
- Courtroom Preparation and Testimony

Instructors
Instructional personnel in the Wildland Fire Origin and Cause Determination (WFOCD/FI-210 are current and former law enforcement officers with many years of experience conducting and supervising wildland fire investigations. This mix of qualified and experienced instructors comes from such agencies as the United States Forest Service, occasionally other land management agencies and state and local police departments. All instructors are members of the National Wildfire Coordinating Group/Wildfire Investigation Working Team.

Who Should Attend?
Qualified applicants must be full-time, sworn law enforcement peace officers, specifically trained fire investigators.
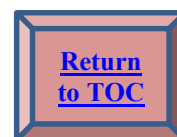
National Institute of Justice

A Guide for Investigating Fire and Arson

Ctrl + Click on screen shot to go to website

This handbook is intended as a guide to recommended practices for the collection and preservation of evidence at fire/arson scenes.

Jurisdictional, logistical or legal conditions may preclude the use of particular procedures contained herein.

Follow Agency Policies!

Actions taken following these guides should be performed in accordance with department policies and procedures and federal and state laws.

NIJ's Crime Scene guides were created by multidisciplinary technical working groups of content area experts from across the United States.

Not every portion of this document may be applicable to all fires. It is at the discretion of responding personnel (depending on their responsibilities, as well as the purpose and scope of their duties) to apply the procedures recommended in this Guide to a particular incident. Some of the procedures described in this Guide may not be performed in the sequence described or may be performed simultaneously.

Steps in this guide include:	Arriving at the scene	Evaluating the scene
Documenting the scene	Processing evidence at the scene	Completing the investigation

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National Center for Forensic Science

(The National Center for Forensic Science (NCFS) is a Florida Type II Research Center hosted by the University of Central Florida)

Fire and Arson Scene Evidence: A Guide for Public Safety Personnel

(Written and Approved by the Technical Working Group on Fire/Arson Scene Investigation)

While many agencies have programs in fire and arson scene processing, the level of training and resources available varies from jurisdiction to jurisdiction, as does the opportunity to practice actual investigation.

To assist these agencies, the National Institute of Justice convened a group of law enforcement and legal practitioners, as well as expert fire investigators, to develop improved procedures for the investigation and collection of evidence from fire and arson scene (The Guide was originally published in June 2000 and the link below will take you to that version of the Guide. Be sure to see the **Emergency Response to Fire Investigations: A Guide for First Responders**, and its link following the blue separator line. This outline, published in 2008 is a very good adjunct to the original Guide).

As the authors of the Guide indicate, the field of fire and explosion investigation lacks nationally coordinated investigative protocols. NCFS recognizes the need for this coordination. The Center maintains and updates its training criteria and tools so that it may serve as a national resource for public safety personnel who may encounter a fire or explosion scene in the line of duty

Download the Guide in PDF file format

Emergency Response to Fire Investigations: A Guide for First Responders

The purpose of this outline is to provide general guidance in the preparation of training curriculum for the instruction of first responders in the awareness and their responsibilities at a fire scene. The actions of the first responder providing emergency services at a fire scene are critical not only to lifesaving and fire suppression efforts but also to any subsequent criminal investigation of an incendiary fire. This material is **designed to enhance and expand the basic steps** provided in the National Institute of Justice *Fire and Arson Scene Evidence: A Guide for Public Safety Personnel* published in June 2000. **Download the Training Outline in PDF Format**

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Commercially Produced Origin & Cause Training Programs—Non-Profit

interFire On-Line

interFIRE Online, is a clearinghouse that provides a wealth of resources for fire services, fire insurers, law enforcement and others whose duties involve arson investigation, fire investigation safety and fire scene training.
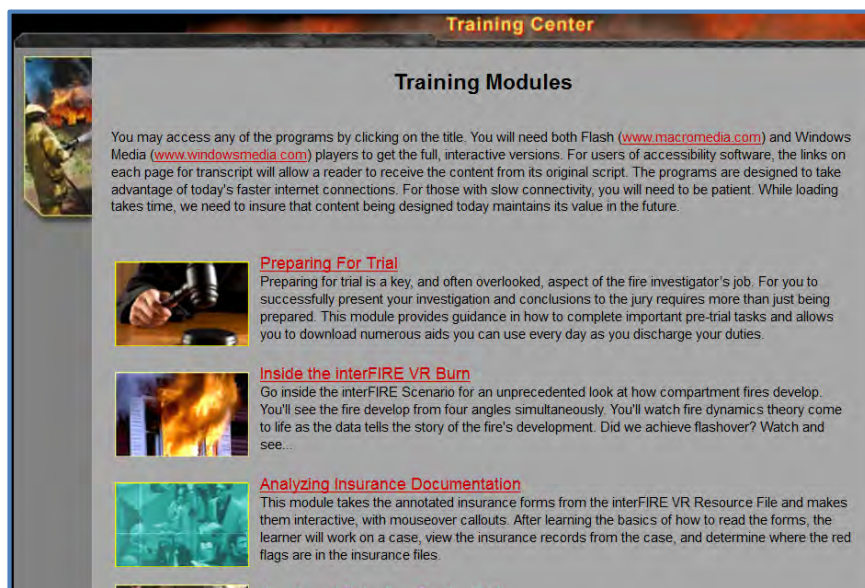
The **online Training Center** provides interactive tutorials on critical fire and arson investigation procedures and cover fire investigation from before the fire through to follow up and legal preparation.
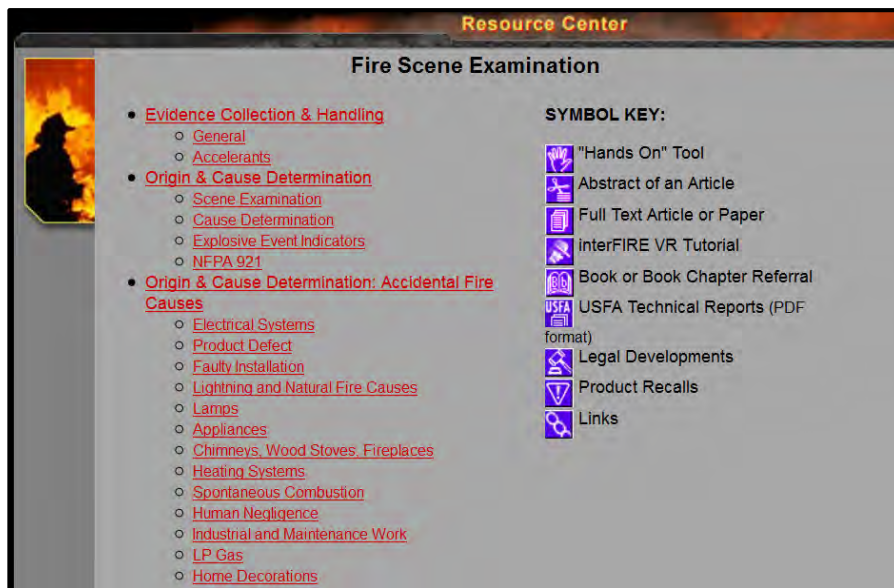
In the **online Resource Center** is a very comprehensive bibliography where you can access fire investigation materials that include: arson investigation abstracts; articles and tutorials; United States Fire Administration technical reports; fire investigation links; and more.

Hands-on training is available by assessing the **online Training Calendar** of fire investigation training programs covering topics from arson awareness to fire insurance fraud and fire codes and standards.
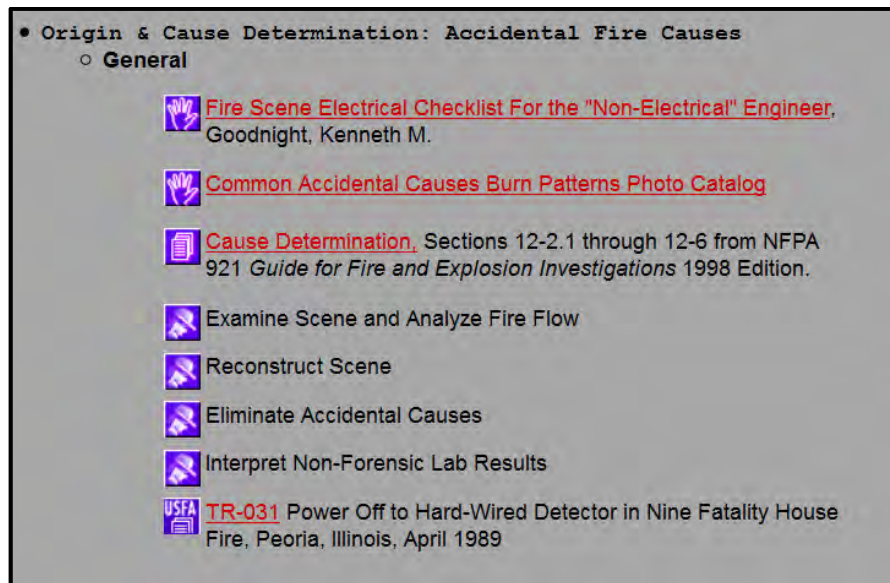
Example of resources available for **Origin & Cause Determination: Accidental Fire Causes**. Note the blue icons that reflect the Key in the figure above this one.

Critical Info Net

[Critical Info Net](#)

Commercially Produced Origin & Cause Training Programs—For Profit

Action Training Systems
http://www.action-training.com/
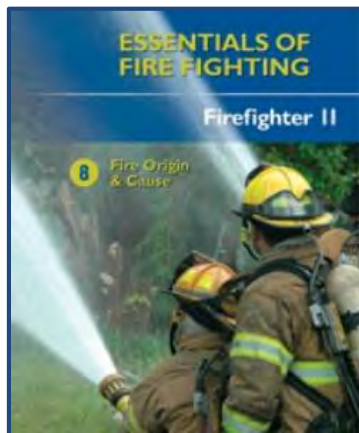
Quick Overview

Presents the firefighter's role in fire cause determination from first alarm to final overhaul. Shows how to secure the scene pending an investigation and describes legal considerations of fire cause determination. Demonstrates how to safeguard evidence at the scene.

Cost: Contact Action Training Systems

Ctrl+Click on the image to see a short video clip explaining the highlights of the **Fire Origin and Cause** training provided by Action Training Systems.

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Fire Origin and Cause

International Association of Arson Investigators

This DVD teaches first responders, including fire, police and EMS, how to make critical observations and take important scene preservation actions as they discharge their first responder duties. These observations and actions are crucial to the success of the subsequent fire investigation of the scene.
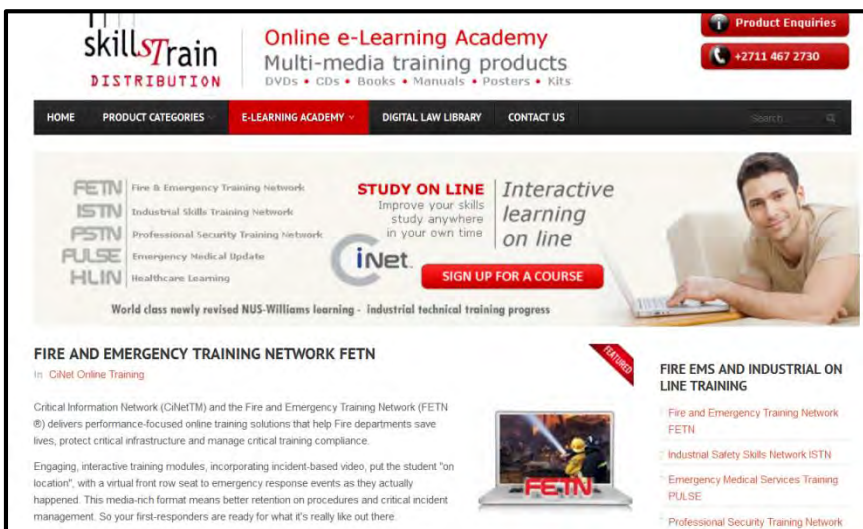
Pricing: 1-4 DVDs $5.00 USD

5-10 DVDs $11.00 USD

Ctrl+Click on image to access website to place order

SkillsTrain Distribution:
Online e-Learning Academy

This on-line e-Learning academy offers a six-part Fire Origin & Cause Determination curriculum at a cost of $99 USD for each of the six segments.

Ctrl+Click on Screen Shots 1-6 on the next page to access the **SkillsTrain** website for ordering information for each course module

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Fire Origin and Cause Determination, Part 1: Introduction to Fire Investigation

Brand: CiNet FETN
Product Code: 0380021
Reward Points: 85

Price: R999.00
Ex Tax: R876.32
Price in reward points: 85

Qty: 1 Add to Cart - OR - Add to Wish List / Add to Compare

0 reviews | Write a review

Share

Description   Specification   Reviews (0)

You may wonder, Why is it so important that I understand how a fire origin and cause investigation is done? As a line firefighter who often arrives with the first on-scene unit, you play an extremely important role in the success of a fire investigation. Understanding the purpose of a fire origin and cause investigation, along with search and seizure laws, investigation roles and responsibilities, and the related terminology, should provide you with the basic tools you need to effectively support a successful fire investigation.

Fire Origin and Cause Determination, Part 2: Fire Investigation

Brand: CiNet FETN
Product Code: 0380022
Reward Points: 85

Price: R999.00
Ex Tax: R876.32
Price in reward points: 85

Qty: 1 Add to Cart - OR - Add to Wish List / Add to Compare

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Share

Description   Specification   Reviews (0)

The following lesson knits together the basic fundamentals of combustion, fire spread and the common characteristics of fire in buildings. Understanding these basic concepts and fundamental patterns will assist you in recognizing common fire behavior patterns and clues left behind at every fire scene. The will be the first step of several in your job of determining the origin and cause of this fire.

Fire Origin and Cause Determination, Part 3: The Fire Scene

Brand: CiNet FETN
Product Code: 0380023
Reward Points: 85

Price: R999.00
Ex Tax: R876.32
Price in reward points: 85

Qty: 1 Add to Cart - OR - Add to Wish List / Add to Compare

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Description   Specification   Reviews (0)

The fire investigator's goal in a fire investigation is to locate the point of origin and determine the cause of the fire. Most accidental fires can be traced back to a relatively small area or point. These types of fires usually start with a small flame or heat source and spread slowly until they reach a point where flashover occurs.

Fire Origin and Cause Determination, Part 4: Ignition Sources

Brand: CiNet FETN
Product Code: 0380024
Reward Points: 85

Price: R999.00
Ex Tax: R876.32
Price in reward points: 85

Qty: 1 Add to Cart - OR - Add to Wish List / Add to Compare

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Description   Specification   Reviews (0)

Part 4 exposes the firefighter to an in-depth overview of the basic types of indicators typically found at accidental, electrical and arson-caused fires scenes. The number and physical type of indicators that will be covered in this segment is considerably large, so the depth and level that they will be covered will only be able to ensure awareness and an ability to recognize indicators in and around a post fire scene.

Fire Origin and Cause Determination, Part 5: A Systematic Approach

Brand: CiNet FETN
Product Code: 0380025
Reward Points: 85

Price: R999.00
Ex Tax: R876.32
Price in reward points: 85

Qty: 1 Add to Cart - OR - Add to Wish List / Add to Compare

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Share

Description   Specification   Reviews (0)

No two fires or investigations are going to be the same. Although this training module presents a set of basic guidelines for performing a structural fire investigation, you should never consider a structure fire investigation to be "routine." Safety continues to be the most important aspect to be considered by all fire investigators, including the protective gear you need to wear to defend yourself against toxic vapors, broken glass, or damaged structural components capable of impaling you.

Fire Origin and Cause Determination, Part 6: Basic Vehicle and Wildland Fire Investigation Procedures

Brand: CiNet FETN
Product Code: 0380026
Reward Points: 85

Price: R999.00
Ex Tax: R876.32
Price in reward points: 85

Qty: 1 Add to Cart - OR - Add to Wish List / Add to Compare

0 reviews | Write a review

Share

Description   Specification   Reviews (0)

Vehicle and wildland fire investigations require specialized training and expertise not normally available to most firefighters interested in becoming fire investigators. The infrequency of these types of fires in most jurisdictions generally limits the number of opportunities for training and experience, making it difficult for fire investigators to become proficient in either of these two specialties. This abbreviated introduction has been designed to provide the basic procedures and key points required to perform theses types of investigations.

College-Level Courses and Degree Programs for Fire Origin & Cause

More firefighters are seeking out college courses in the fire sciences in an effort to: (1) get the technical knowledge and skills that they need for their job and (2) to attain their Associate's or Bachelor's degree to fulfill promotional policy prerequisites in their department.

Educational Portal: Fire Investigation Training and Degree Overview

Educational Portal: Fire Investigation Training and Degree Overview

Kilgore College: Fire Academy On-Line

Kilgore College On-Line: Fire Academy Courses

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FIRE AND RESCUE TRAINING INSTITUTE
MU EXTENSION, UNIVERSITY OF MISSOURI-COLUMBIA

M U | FRTI

University of Missouri-Columbia
Fire Rescue Training Institute

Fire Cause Determination and Arson Awareness

Fire Cause Determination and Arson Awareness

Hours:	Prerequisites:	Min/Max:
16	None	15/25

Description:

This course is designed to provide the basic knowledge and skills necessary for senior firefighters and fire officers to conduct initial fire cause determinations at structural fire scenes. Improved determination of fire cause helps identify a community's fire problem that can enable the development of effective fire prevention strategies to improve public safety. Upon successful completion of this course, participants will be able to make observations and gather information that will assist in identifying the area(s) of origin, and assess the need for additional assistance to accurately determine the cause of a fire. Subjects include, but are not limited to; fire behavior, determining area of origin, accidental and incendiary fire cause determination, fire scene examinations, documentation, and handling/ preservation of evidence. This course includes classroom presentations along with a hands-on realistic fire cause determination module, utilizing a mobile fire cause simulation trainer.

Fire Cause etermination raining Unit

View additional photos

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