Introduction to NFIRS 5.0

Intro to NFIRS 5.0-Student Manual

3rd Edition, 3rd Printing--March 2006

Homeland Security

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U.S. DEPARTMENT OF HOMELAND SECURITY

FEDERAL EMERGENCY MANAGEMENT AGENCY

UNITED STATES FIRE ADMINISTRATION

NATIONAL FIRE ACADEMY

FOREWORD

On March 1, 2003, the Federal Emergency Management Agency (FEMA) became part of the U.S. Department of Homeland Security. FEMA's continuing mission within the new department is to lead the effort to prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident. FEMA also initiates proactive mitigation activities, trains first responders, and manages the National Flood Insurance Program and the U.S. Fire Administration.

FEMA's U.S. Fire Administration (USFA) serves as the agency fire protection and emergency response community expert. It is located at the National Emergency Training Center in Emmitsburg, Md., and includes the National Fire Academy and the Emergency Management Institute. The mission of the USFA is to save lives and reduce economic losses due to fire and related emergencies through research and training, public education and coordination with other federal agencies and fire protection and emergency service personnel.

To achieve the USFA's legislated mandate (under Public Law 93-498, October 29, 1974), "to advance the professional development of fire service personnel and of other persons engaged in fire prevention and control activities," the USFA's National Fire Academy offers a diverse delivery system. Courses are delivered at the Emmitsburg campus and throughout the nation in cooperation with state and local fire training organizations.

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UNIT 0: INTRODUCTION AND OVERVIEW

OBJECTIVES

The students will be able to:

1. *Describe the benefits provided by the National Fire Incident Reporting System (NFIRS) 5.0.*
2. *Explain how the need to collect fire data led to the organization and development of NFIRS.*
3. *Identify the modules that are included in NFIRS 5.0.*
4. *State the purpose of the NFIRS* Handbook *and* Quick Reference Guide *(QRG).*

INCIDENT DATA COLLECTION

The Incident Report

An incident report is the written or electronic documentation that a fire or other incident occurred. It may be as brief as a basic fact statement or as lengthy as an extensive discussion of the incident, supported by photographs, witness statements, and laboratory test results. The length and complexity of the report will depend on the nature and magnitude of the incident, State and local policies concerning data collection, the need for specific data, and the resources available for obtaining information and completing reports. They also depend on the training and motivation of the person filling out the report.

The incident report should include a description of the circumstances related to the incident, including the cause, factors contributing to the magnitude of the incident, actions taken by the fire department to mitigate the incident, and a description of the casualties or the damage resulting from the incident.

Purpose of the Incident Report

There are three basic purposes of an incident report at the local level. First, it is the legal record of the fact that a fire or other incident occurred; it provides official notification to those who may be required legally to know of the incident, such as the State Fire Marshal. It reports facts concerning the incident. In the case of a fire, it describes the particular property affected, why the fire occurred, how building components and fire protection devices performed, casualties or damage that resulted, and fire department action.

Second, it provides information to senior officers and fire department managers so that they are kept informed about what is happening within their areas of responsibility. This allows them to evaluate the performance of their units at the incident and to talk intelligently about the incident to the media and others. Furthermore, good information about a fire can motivate change in fire protection approaches in a community or even the Nation.

Finally, the incident report provides data on fire and other emergency services to fire service management so they can track trends, gauge the effectiveness of prevention and intervention measures presently being used, evaluate the impact of new methods, and indicate those areas that may require further attention.

The first two purposes can be served by any report that is an accurate description of the incident. The third purpose, however, requires that information be collected in a consistent format that will permit a meaningful aggregation of the data from reports on many incidents.

It is important that the locally collected data have a visible, significant use at the local fire service level.

It also is important that a single report serve the basic data needs of several types of potential users. The data needed at the State and national level must be provided from what is collected locally. At the same time, it is important that the locally collected data also have a visible, significant use at the local fire service level. If the data are collected only for the benefit of those outside the local area, the motivation and commitment to quality and completeness may diminish, with a resulting reduction in the usefulness of the data.

It is difficult to collect routinely all of the data items that are likely to be needed by all types of potential users in the future. Compromises are needed between the ease of filling out an incident report and the potential uses of it. Ease of use also increases reliability, and the reliability of the data increases their usefulness.

Uniformity of Incident Reporting

To achieve uniformity in reporting, the U.S. Fire Administration (USFA), within the Federal Emergency Management Agency (FEMA), has developed the National Fire Incident Reporting System (NFIRS). This system is based on the work of the National Fire Information Council (NFIC) and the National Fire Protection Association (NFPA) Technical Committee on Fire Reporting.

The NFPA Technical Committee on Fire Reporting is responsible for developing and maintaining NFPA 901, *Standard Classifications for Incident Reporting and Fire Protection Data*. This Standard establishes basic definitions and terminology for use in incident reporting and serves as a means of classifying data so that the information can be aggregated.

Benefits of an Incident Reporting System

At the local level, a fire department can derive many benefits from a good incident reporting system, particularly if it is based on NFIRS. Some of the following uses involve no more than totaling data from the system. Others require more extensive analysis. Many of these benefits can be

derived at the State and national levels when a database is used that combines the fire experience of many local fire departments. It is important to note that while this examination focuses on fires, similar benefits can be derived for other types of incidents handled by fire departments, such as emergency medical services (EMS) and hazardous materials (haz mat) incidents.

Describing a community's fire problem: It is possible to pinpoint where fires are occurring, what factors are most responsible for ignitions, and what casualties and damage are occurring as a result of fires. With the problem placed in proper perspective, the most serious and solvable aspects of the fire problem can be tackled first.

Supporting budget request: In this era of increasing concern about taxes, municipal officials are quick to cut budgets and slow to add new programs. Frequently, fire department managers do not have the statistics to support their requests for additional funds. Good statistics will put the fire problem in perspective with other municipal concerns and help community officials realize the consequences of budget cuts or the value of new programs for the fire department. Such new programs may involve the delivery of other emergency services, such as EMS and haz mat spill mitigation.

Supporting code refinements: A good database permits fire departments to identify and describe fires that might have developed differently or might not have occurred at all if certain code changes had been in place. Loss statistics from other areas with more stringent codes also can be used for comparison. Estimating the likely impact of a code change can involve complex analysis, however, and no incident database can address all the subtleties of code impact.

Evaluating code enforcement programs: It is not sufficient to have codes on the books if they are not enforced properly. In evaluating loss experience, it may be possible to see whether certain losses are occurring in occupancies that are not up to code or are without desired features such as sprinkler systems.

Evaluating public fire education programs: Not all problems can be solved by establishing and enforcing codes. There are certain aspects of the fire problem that can be controlled best by public education programs that inform people of the dangers of fire and tell them how to reduce fires and how to react when hazardous situations arise. It is important to know the exact problem that has to be addressed. Appropriate evaluation criteria also must be in place to measure whether an educational program is, in fact, helping to solve that aspect of the problem.

Planning future fire protection needs: Many communities and fire departments are becoming very active in planning and are developing master plans. It is essential that the fire service be involved in such planning. A good database will allow a fire department to compute fire rates relative to population and building inventory, as well as monitor response times. These, with other characteristics of the community fire problem and planning, will support better fire protection in the future, based on changing demography and planned community growth. It also will provide input to decisions about the type and level of fire protection a community will provide so that requirements can be established for developers who construct properties that exceed fire department capabilities.

Improving allocation of resources: Proper analysis of fire incident data may show where a redeployment of existing resources can provide the same level of protection or even improve the level of protection within a community.

Scheduling nonemergency activities: Training sessions, in-service inspections, and other activities are important aspects of a fire department's function. A fire department that tracks the times that fires occur and their severity can schedule these activities when they are least likely to be interrupted by emergency calls or when the normal delay caused by such activities will have the least impact on emergencies.

Regulating product safety: Particularly at the national and State levels, a fire reporting system can be useful in measuring the size and severity of problems associated with various types of consumer products. By identifying the most commonly involved products and the ways these products become involved in fire, this reporting system can help manufacturers redesign their products to make them safer, and it can prompt changes in standards and regulations to require safer products. The reported information also can be incorporated into public fire education programs to warn consumers of the dangers of using certain products.

Support for fire engineering models: Engineering models to design or evaluate fire protection depend upon the output of fire reporting systems to guide and calibrate the models.

Support for fire engineering analysis: Analysis of fire data can indicate those methods of fire defense that work best.

NATIONAL FIRE INCIDENT REPORTING SYSTEM OVERVIEW

The Data-Based Decisionmaking Process

Fire personnel accurately recording the circumstances of all incidents, using a reliable and consistent coding methodology, is the first step in the data reporting process and a key for developing profiles that affect a department's decisions. Incident data can be used by fire departments to document their experience, support all types of management decisions, and identify, prepare, and justify budget requests.

Consistent response data support local decision-making in administration and operations

Local agencies then can send their incident data to the State, where the information is combined with data from other fire departments into a statewide database. By combining data at the State level, trends in fire problems can be detected that often are too infrequent to be seen at the local level, and a State fire profile can be developed. Trend information can be used to target fire safety and prevention programs, as well as to assist in identifying the safety level of products and practices. For these reasons, fire incident reporting is mandatory in many States.

State incident data are sent to the National Fire Data Center (NFDC) at the USFA for further analysis. The NFDC can compare and contrast statistics from States and large metropolitan departments to develop national public education programs, make recommendations for national codes and standards, guide allocation of Federal funds, identify consumer product failures, identify the focus for research efforts, and support Federal legislation, such as the Hotel/Motel Fire Safety Act (PL 101-391--Sept. 25, 1990).

National-level data can be used by information partners to address community risk reduction issues.

At the national level, data combined from participating States can be used by the information partners. These organizations use national-level fire data to establish policy, allocate funds, and set standards to affect the fire problem. Decision-making based on incident patterns identifies common areas for prevention and high-risk products, and geographic areas so partners can take steps in response.

Addressing issues nationally can help local emergency responders acquire resources to address high-risk issues.

The purpose at all levels in the data reporting system is to provide timely and reliable information that supports the decisionmaking process, whether it is a fire captain identifying target hazards and properly deploying resources based on incident information, or the Consumer Product Safety Commission (CPSC) banning unsafe products like flammable sleepwear for children.

Development of NFIRS

The need to collect data was realized and identified in 1972 when *America Burning* was published. *America Burning* recommended "…that a national fire data system be established to provide a continuing review and analysis of the entire fire problem" (page 9). The USFA, which was created based on this and other recommendations in *America Burning,* is the agency that evaluates the Nation's fire problem.

Among other duties, the USFA is charged with providing for a nationwide exchange of information pertaining to fire and life safety and with having data collection, storage, retrieval, and dissemination capability.

Early data collection efforts varied throughout the country. The first States to pilot test the NFPA Pamphlet 901 system were California, New York, Ohio, and Oregon. Version 1 NFIRS software, developed by the National Fire Prevention and Control Administration (NFPCA--the predecessor to USFA), was used in Minnesota, Missouri, and South Dakota. The program started in 1975 with a "NFIRS Users Conference." Version 2 software was completed between 1976 and 1978, Version 3 development began in 1979, and Version 4 in 1985. Version 4.1, with the added HazMat Module, was implemented in 1990.

NFIRS 5.0, the latest version, was ready for implementation in 1999. It featured all-incident reporting. Each State developed its implementation plan individually.

NATIONAL FIRE INFORMATION COUNCIL

The critical need for a national network to collect, analyze, and share fire data led to the formation of the NFIC. By participating in a uniform NFIRS, Council members are dedicated to "fighting fire with facts." From its meager beginning with just six States in 1975, the Council now encompasses 49 States, the District of Columbia, and 35 metropolitan jurisdictions, with nearly 14,000 fire departments participating throughout the Nation.

The NFIC's unique partnership of Federal, State, and local participants has proved to be one of the most successful, productive, and cost-beneficial programs ever attempted on a national level. The Council's partnership with the USFA/FEMA is through a cooperative agreement that provides Federal funding to support specific program objectives. Strategies to "fight fire with facts" include

- system development and expansion;
- integration of new computer information technologies;
- technical assistance to member States/metros;
- regional and national training workshops;
- data analysis; and
- use of data for public fire safety awareness education.

Effectively working towards its goal to establish the United States as the number one Nation in fire safety, the Council has developed these objectives:

- to preserve lives, property, and natural resources from the effects of destructive fire;
- to enhance the quality of life for all people by employing NFIRS data to assist in developing effective fire prevention and protection strategies;
- to increase the understanding of the causes of destructive fire by combining experience at the community, State, and national levels;
- to provide data essential to the evaluation of existing and proposed fire safety laws, standards, codes, and regulations;
- to identify behavioral factors that contribute to the causes of accidental fires;
- to increase the awareness of all people about the hazards of fire and how to defend themselves against those hazards;

- to provide a comprehensive fire information resource to legislators; code developers; Federal, State, and local government agencies; fire and building officials; researchers; fire safety educators; the media; public and private sector organizations; the business community; and the general public; and
- to promote a positive fire safety attitude in people's daily activities --whether at home, work, or play.

All over the Nation, dozens of prominent organizations participate in and benefit from Council activities and data. These span the media, industry, government, and educational institutions, in addition to fire-related groups and associations.

To coordinate its broad national representation, the Council is organized into four geographical regions. Three State members from each region serve on the Council's Board of Directors along with three directors who represent the metropolitan city members (those fire departments serving a population of more than 500,000).

The Council, with its broad NFIRS network, is providing valuable data to an extensive range of decisionmakers in both the private and public sectors.

The All-Incident Reporting System

The USFA, as well as many States, is mandated by law to collect information on fires, and to rely on the Nation's fire service to meet that requirement through the NFIRS. NFIRS Version 4.1 cannot meet today's fire service information needs adequately because it was designed to collect only fire information, which represents a fraction of the tasks performed by the fire service. The NFIRS 5.0 addresses the fire service's need for a system that accounts for the full range of fire department incidents.

NFIRS 5.0 is based on 20 years of experience in data management among current NFIRS users, and ideas from national fire service organizations.

NFIRS program managers representing 49 States and 35 metro fire departments have learned many lessons about fire reporting during the past 20 years. With the input of State Fire Marshals, metro fire chiefs, local fire departments, and customers such as the International Association of Fire Chiefs (IAFC), International Association of Fire Fighters (IAFF), NFPA, CPSC, and the National Highway Transportation Safety Administration (NHTSA), they developed NFIRS 5.0, guided by the following specific design objectives.

System Design Objectives

- Create an All-Incident Reporting System. To keep pace with the rapidly changing activities of the fire service, NFIRS 5.0 must be designed as an "all-incident" system including, but not limited to, fire, EMS, haz mat, wildland, and arson incidents.

NFIRS 5.0 records information about all responses, not just fires.

- Inclusion of new incident types must be supported by the NFIRS 5.0 Standard.
- Develop a set of reporting codes that describe any incident accurately, reliably, and easily. All data should be readily collectible, reportable, and usable.

NFIRS 5.0 is broadly supported by national organizations.

- Promote uniformity of incident reporting by establishing the NFIRS 5.0 coding methodology as the accepted national standard, with the consensus of the USFA, NFIC, NFPA, IAFC, IAFF, National Association of State Fire Marshals (NASFM), and other information partners.

NFIRS 5.0 is flexible and adaptable, working with a variety of hardware and software systems, including previous editions of NFIRS.

- Make the system hardware platform independent. The NFIRS 5.0 design specifications must support the development of a data collection system on any hardware platform to ensure its universal acceptance and the capability to integrate with existing systems, where needed.
- Make the system application software/ database independent. The NFIRS 5.0 design specifications must support the development of a data collection system using industry standard software that is non-proprietary to the specification. This will help to ensure universal acceptance of the NFIRS 5.0 Standard and allow for its integration with existing systems.
- Map the historical data from the old system to the new system where feasible.

- Preserve the ability for a State to collect Version 4.1 incident reports without maintaining a separate database.

Benefits

The new system is modular in design and uses only the modules necessary to describe the incidents. Data are collected for all incident types in one Basic Module. Information that is more detailed can be collected with other modules to further profile fires, structure fires, civilian fire casualties, firefighter casualties, hazardous materials, wildland fires, arson, apparatus, personnel, and EMS incidents as necessary.

A modular design increases the system flexibility, and decreases data collection.

The modular design makes the system easier to use because only the data required to profile the extent of the incident are captured. Accuracy and reliability have been improved by modifying the coding system.

Ease of Use

Data coding has been revised to reduce confusing classifications.

- Simplifies look-ups by alphabetizing coding lists with multiple choices for the same code.

- Merges the codes ending in 9 and 0. Version 4.1 required a distinction between the codes ending in 9, "not otherwise classified," and the codes ending in 0, "insufficient information to classify further." Often, the proper distinction between these two codes is not observable in the field.

Eliminates compound code--asks more questions with fewer choices.

- Eliminates compound codes. Some of the previous codes have contained embedded multiple questions. NFIRS 5.0 splits these elements, since they are often confusing to the reporter and result in ambiguous or erroneous answers. Although this may increase the number of fields, the choices will be more clear among alternatives, and the number of codes is decreased. For example, "Equipment Involved in Ignition" in Version 4.1 is a long complex list of equipment that includes factors on power source and use. Version 5.0 creates just three categories (Equipment, Equipment Portability, and Equipment Power Source) to make coding easier, more accurate, and specific.

Abbreviated reporting for most incidents will reduce data collection and classification times.

- Provides for abbreviated reporting of self-contained, nonloss fires by using a basic incident form that can be completed with as few as three look-ups. This may represent the majority of all fire incidents in many jurisdictions.

- Abbreviates paths through the system for nuisance fires where there have been no losses or casualties. This will eliminate the amount of information that needs to be entered into the system.

- Documents small spills of common hazardous materials on the basic form. Information that is more detailed can be provided on the optional Hazardous Materials Module if a serious release of hazardous materials occurs.

Compatibility

NFIRS 5.0 works with current technology and anticipates future equipment and software developments.

- Compatible with current electronic technology. Version 5.0 is designed for electronic media technology. The design specification contains specific data libraries, programming specifications, and data flow charts.
- Designed to support current and anticipated technologies: client-server, object-oriented database; and Internet Web server technology.

NFIRS 5.0 includes a data mapping strategy to convert 4.1 to 5.0 and provide for statistical analysis of historical data.

- Includes a mapping strategy back to Version 4.1 to provide for statistical analysis of historical data.
- Allows for the inclusion of optional State or local data storage and retrieval. These data are for use at the local or State level only.
- Recognizes that there may be a need for additional data elements to meet the local situation.

Comprehensiveness

- Collects behavioral information on multiple levels, e.g., children playing with fire, age range, what they used to set the fire, and if they were alone at the time of the incident.

NFIRS 5.0 offers more precise information classification.

- Formats the address to allow computerized queries and street-based address matching for Geographic Information System (GIS) purposes.
- Breaks fire losses into property and contents to better define structure losses. Pre-incident value now is also captured as an optional data element.

- Captures specific property information about multiple onsite materials and their use. This will allow identification of nonintended or illegal uses of property, such as residential drug houses or laboratories.
- Notes information on the number of acres burned for all fires. Specific and detailed information about wildland or large open fires is captured for those fires only.
- Represents missing (not reported) data as blanks system-wide. Missing data no longer will be lumped in with undetermined default code values.

Reliability

NFIRS 5.0 data fields can capture information beyond simple incident descriptions.

- Profiles fire prevention and code issues that affected the fire.
- Captures multiple factors contributing to the causes of the fire for the first time. This allows identification of juvenile firesetters, gang involvement in fires, alcohol and cigarette interaction, as well as drugs and youth involvement by age categories.
- Expands on equipment involved in starting fires. Detailed tracking of specific equipment involved in fire ignitions is possible.
- Highlights factors that affect fireground suppression. Burglar bars, high-rack storage, balloon construction, and unprotected vertical openings are some examples of this information.

Usefulness

Administrative information is gathered and classified routinely.

- Transmits certification of applications with certification numbers to the State.

- Provides better information on the impact of fire protection features.
- Includes carbon monoxide incidents.
- Notes one-time information for special studies purposes.
- Groups fire service resources for apparatus and personnel by use at the incident. Specific detailed information about the use of fire service personnel and apparatus will be collected in a standard way for the first time in optional modules. This will permit staffing studies on several levels of use.

Data fields profile building and systems information that can be used to develop prevention strategies.

- Outlines detailed information on the impact of fires on buildings. Information on the building's size, number of stories, and status now is available. Specific information on fire origin, damage patterns, flame spread, and materials contributing to flame spread is captured as well.
- Expands information on detectors and automatic suppression systems. Information on the system's presence, range, power supply, effectiveness, operation, and reason for failure is included.
- Extends information on casualties to provide a better understanding of the relationship of the casualty to factors contributing to injury, as well as the nature and cause of injuries.

NFIRS 5.0 MODULE OVERVIEW

Version 5.0 uses a modular format to increase the accuracy and applicability of data collection for all incident types. The overall number of data fields has been increased. However, because Version 5.0 takes advantage of selective field entries based on incident type, the number of fields used to define an incident has decreased compared to Version 4.1. Version 5.0 has 11 modules that are described below.

Each module (form) in the system is designed to collect specific data. Nevertheless, the modules have some characteristics in common. Any portion of a module identified by a letter--A, B, etc.--is called a section. Sections may be subdivided into blocks such as A1, A2, etc. A block can contain one or more lines and each entry within a line is called a field. Codes are used, in some cases, to capture data within a field.

Whenever a data-entry point is marked with a star (☆), the information requested is considered essential and the section, block, line, and/or field **must** be completed.

NFIRS 1--Basic Module

The Basic Module is used for every incident. State agencies that are responsible for incident reporting will determine which optional modules (EMS, HazMat, Wildland, Apparatus, Arson) are required to be submitted.

If the State does not mandate the use of optional modules, the local fire department still may elect to use the module(s).

NFIRS 1 includes information on:

- Fire Department Identifier (FDID);
- location;
- incident type;
- aid given or received;
- dates and times/shifts/special studies;
- actions taken;
- dollar losses and values;
- casualties;
- haz mat releases;
- property use; and
- persons and entities involved.

For certain incident types, NFIRS 1 is the only module that must be completed:

- confined fires, e.g., food on stove;
- small vegetation fires;
- outside rubbish fires;
- explosions;
- some "other" fire types; and
- non-fires.

This feature meets the need for an abbreviated method of incident reporting for those fires and other emergencies routinely encountered by the fire department.

NFIRS 2--Fire Module

The Fire Module is used for any fire that extends beyond a non-combustible container. It would be used to record information on incidents involving fires, including buildings, outside storage fires, vehicle fires, and larger vegetation fires. As an option, the Wildland Module can be used for vegetation and other outside fires. Building fires require the additional use of the Structure Fire Module.

NFIRS 2 includes information on:

- property details;
- on-site materials;
- ignition: area, source of ignition, material ignited, factors contributing, human issues, equipment involved;
- human factors involved;
- mobile property description;
- fire origin and spread description; and
- fire suppression factors.

NFIRS 3--Structure Fire Module

The Structure Fire Module is used in conjunction with the Fire Module for building fires that extend beyond a noncombustible container (Incident Types 111 and 120's). The Fire Module provides details about the property involved, and the Structure Fire Module furnishes information regarding the buildings involved in the fire--how the fire started, and detection and suppression equipment present.

The Structure Fire Module, through its available data fields, provides a means to describe larger fire incidents extensively.

NFIRS 3 includes information on:

- structure type;
- building status, height, main floor size;
- fire origin, fire spread, number of stories damaged by flame;
- material contributing to flame spread;
- presence of detectors, detector type, detector power supply, detector operation, detector effectiveness, detector failure reason; and
- presence of automatic extinguishment system (AES), type of AES, AES operation, AES effectiveness, and AES failure reason.

NFIRS 4--Civilian Fire Casualty Module

The Civilian Fire Casualty Module captures data regarding any civilian (non-fire-service) casualty associated with fire-related incidents. An entry in H1 of the Basic Module will initiate the completion of this module.

The Civilian Fire Casualty Module is designed to provide a better understanding of human reaction to fire, not just major fires, but those likely to be encountered by the fire department on a more frequent basis. In this way, public safety education programs can be targeted to address these behaviors. Furthermore, building codes can be modified in recognition of how people likely will react in fire conditions.

NFIRS 4 includes information on:

- person's identification;
- demographic information;
- injury causes, including human and contributing factors;
- activity when injured;
- location when injured;
- symptoms and portion of body injured; and
- disposition.

NFIRS 5--Fire Service Casualty Module

The Fire Service Casualty Module is used when fire service personnel suffer an injury, fall, or exposure involved with any incident. When the Fire Service Casualty Module is used, at a minimum the Basic Module also must be completed. Other modules also may be required, depending on the incident type.

An exposure is when fire service personnel are exposed to a toxic substance or harmful physical agent through any route of entry (e.g., inhalation, ingestion, skin absorption, or direct contact). Exposures can be reported regardless of the presence of clinical signs and symptoms.

Firefighter casualty information can be used by Health and Safety Officers to reduce risks at incidents.

NFIRS 5 includes information on:

- person's identification and age;
- injury time;
- assignment and activity at time of injury;
- severity of injury and disposition;
- location of victim when injured;
- symptoms and portion of body injured;
- cause of injury, factors contributing, object involved;
- where injury occurred; and
- equipment profiles.

NFIRS 6--EMS Module

The optional EMS Module is used to report all medical incidents to which a department responds.

- The EMS Module does not replace the Civilian Fire Casualty Module in cases where a civilian injury or death occurs because of fire.

- Data on fire service injuries or deaths are reported on the Fire Service Casualty Module.

Whenever an "Incident Type" in the 300 series (i.e., 311, 322, 371, etc.) is entered on the Basic Module Section C, the EMS Module also may be completed. It also may be completed for injuries that occur at other incidents.

One EMS Module should be used for each patient, and the number of modules submitted for an incident should match the "Number of Patients" entered in block B of the paper form.

NFIRS 6 includes information on:

- incident location and type;
- in-service dates and times;
- provider assessment;

- victim demographics;
- injury/illness description;
- procedures used;
- safety equipment involved;
- care level; and
- patient status and disposition.

NFIRS 7--HazMat Module

The optional HazMat Module is used when the Basic Module (Block H3--Hazardous Materials Release) indicates "other" for hazardous material. Its purpose is to document **reportable** haz mat incidents. A reportable haz mat incident is one in which:

- specialized haz mat resources were dispatched or used, or should have been dispatched or used, for assessing, mitigating, or managing the situation; or
- releases or spills of hazardous materials exceed 55 gallons.

The HazMat Module permits hazardous materials incidents to be profiled in depth for incident-management analysis and response-strategy development. It collects relevant information on:

- hazardous materials identification;
- container information;
- release amounts and location;
- actions taken; and
- mitigating factors.

NFIRS 8--Wildland Fire Module

Use the optional Wildland Fire Module when the Incident Type is coded as Forest, Woods, or Wildland Fire (Incident Type 141), or a Prescribed Fire (Incident Type 632). In these cases, the Wildland Fire Module would be used in lieu of the Fire Module.

NFIRS 8 includes information on:

- property details;
- fire cause;
- ignition information;
- fire suppression and management;
- mobile property type;

- equipment involved in ignition;
- weather data;
- fuel model at origin;
- total acres burned;
- property management;
- person responsible; and
- fire behavior.

NFIRS 9--Apparatus or Resources Module

The Apparatus Module is used as a local option to identify apparatus sent to each incident.

NFIRS 9 includes information on:

- apparatus identification and type;
- dispatch, arrival, clear dates and times;
- number of personnel;
- use; and
- actions taken.

If the Apparatus Module is used, the Basic Module also must be completed.

NFIRS 10--Personnel Module

The Personnel Module is used as a local option to identify personnel sent to each incident.

If the Personnel Module is used, the Basic Module also must be completed.

NFIRS 10 includes information on:

- apparatus identification and type;
- dispatch, arrival, clear dates and times;
- use;
- actions taken; and
- personnel ID, rank, actions taken.

The Personnel Module **or** the Apparatus/Resources Module may be used, but not both.

NFIRS 11--Arson Module

The optional Arson Module may be used whenever the Cause of Ignition, (NFIRS 2 E1) is coded as "intentional," or as "under investigation" without any distinction made as to whether or not a crime has occurred, or a determination of criminal intent. The Arson Module also may be used in cases where the cause is "undetermined after investigation."

The Arson Module also may be used to document juvenile-set fires, whether determined to be intentional or not. This information will permit analysis of juvenile firesetting trends, including intervention strategies and repeated activity.

The Arson Module consists of two parts: a local investigation module, which permits a fire department or arson investigation unit to document certain details concerning the incident; and a juvenile firesetter section, which identifies key items of information that could be used for local, State, and national intervention programs.

The NFIRS 11 includes information on:

- agency investigating the incident;
- case status;
- suspected motivation factors;
- entry methods, devices, other information;
- property ownership; and
- laboratory used.

Juvenile Firesetter Module

This portion of NFIRS 11 may be used to document information concerning juvenile-set fires, whether determined to be intentional or not.

This information will permit analysis of juvenile firesetting trends, including intervention strategies and recidivism.

This module is completed only for fires where the person(s) involved in the ignition of the fire was a child or juvenile under the age of 18.

The Juvenile Firesetter Module includes information on:

- age, gender, race, and ethnicity of each juvenile involved;
- family type;
- suspected motivation and risk factors; and
- disposition.

NFIRS 1S--Supplemental Form

This form adds flexibility to any paper-based incident reporting system by expanding the amount of data that can be collected. One section of the form provides a standard means to capture name/address/telephone data regarding several persons/entities involved in an incident. The other section of the form furnishes space for additional remarks or narrative relative to an incident.

The Narrative Report

The narrative report serves as an official legal record of an incident and must describe accurately the incident and the actions taken to mitigate it. While many of these facts may be collected in uniform coded fields, some information can best be presented in a detailed narrative. Information that should be included in the narrative includes

- Observations and actions taken--list them in logical order (usually chronological). Paint a complete picture of the scene; summarize the incident.
- Describe the scene conditions and the condition of the premises when you left.
- Describe property damage and remaining hazards.

DATA QUALITY CONTROL

The Importance of Data Quality Control

Reporting incident data does not stop with collecting information at the scene and storing the data in your local, State, or national database. The common phrase "garbage in garbage out" applies to the data if proper steps are not followed to ensure that "what is collected" accurately reflects, "what happened at the incident." **NFIRS Data Quality Control is a system for ensuring the application of proper standards for accurate and reliable data**.

During the recording of an incident, the report is dynamic, not static. The details could change as more information becomes available, due to further investigations by your fire department or other agencies, or due to a change as a direct result of the initial incident. This gathering of information could take weeks or months. Submit a change to the incident report whenever the conditions of the incident change.

Regardless of whether the gathering of incident data is completed or the incident is still under investigation, the record in the database should reflect the status of the incident accurately.

It is important to remember

- The incident report is a legal record.
- The incident report must reflect the event accurately.
- The incident report must be complete; all required fields are completed.
- The incident report is a dynamic document.
- The incident data are used at local, State, and national levels.

Who Does Data Quality Control?

Data quality control is not a one-person job. All levels responsible for the processing of the incident have a role. Data quality control is performed at different levels:

- The **member making the report** must collect needed and accurate data.
- The **officer in charge of the incident** must check the incident report for accuracy and completeness.
- The **local quality control person** must ensure that all local system edits and requirements have been met.
- The **State NFIRS Program Manager** must make certain that all State edits and requirements have been met.
- The **USFA** must ensure that all incidents added to the national database adhere to the national requirements.

Tools to Support Data Quality Control

There are several tools available to ensure the application of proper standards for accurate and reliable data.

- **Field Incident Report**--used to collect needed data at the scene.

- **NFIRS software**--available from 3rd party NFIRS software vendors or the USFA; the USFA software, the NFIRS Federal Client Tool, is available from State NFIRS Program Managers.

  - List of active vendors with NFIRS software is available from USFA's Web site: www.nfirs.fema.gov/activevendors.htm

  - All NFIRS software must comply with the current NFIRS 5.0 Reporting Standard. The NFIRS Design Documentation contains the rules upon which the standard is built. It can be downloaded from USFA's Web site www.nfirs.fema.gov Section 3--Technical Documents contains the following sections that support NFIRS Data Quality Control:

  -- Edit Requirements;
  -- Relational Edits;
  -- Incident Module Rules;
  -- Incident Flat File Transfer Format; and
  -- Data Dictionary.

- Incident reports should not contain errors. NFIRS errors are grouped into two categories:

  - Critical Error--data that are required and must be provided on the report to allow the report to be complete. A report with a critical error is marked as an invalid incident. An invalid incident cannot be used in National Statistics. Critical Data Fields are identified on the NFIRS forms with a special symbol (☆). Normally, NFIRS software color codes critical data fields, i.e., NFIRS Federal Client Tool's background color is yellow for critical data fields.

  - Warning Error--data that either are missing or are incorrect on the report; a warning error will not prevent the report from being marked as complete.

- **Reports/Queries**--one of the best ways to identify data quality control problems is to use NFIRS reports and queries. Report writing and query building are standard features in most NFIRS software packages. They are helpful to draw your attention to questionable numbers such as average response time, dollar loss, injuries and fatalities, etc.

  - NFIRS Web-based reporting has been developed for users to access NFIRS data for a designated group (fire department, county, region, or State). Standard reports can be created and queries can be built to view the data.

SUMMARY OUTPUT REPORTS TOOL

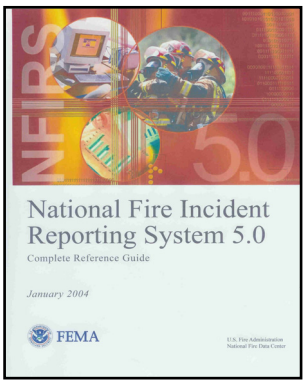
The NFIRS 5.0 Summary Output Reports Tool (found on USFA's NFIRS Web site: www.nfirs.fema.gov) provides registered users access to summary and statistical information from fire department and incident data saved to the National Database. Report executables are predefined according to NFIRS 5.0 report requirements established by the USFA and do not require the use of the USFA NFIRS 5.0 client software.

Users may select a predefined report executable to generate summary and statistical information based on their group level and below, or if they are assigned at a fire department level, on the fire department and its incident data. Two types of reports are available: management reports, which provide summary information as specified by the report query, and reports with user-specified parameters. Some reports include statistical information derived from incident information included in the report and user's State.

The user will need an active-status NFIRS 5.0 user account with the specific reports permissions assigned to it. The data set available to the user is based on group assignment. Users who do not have an active-status NFIRS account or who do not have the reports permissions must contact their NFIRS 5.0 State Program Manager. A list of State Program Managers and NFIC members is posted on the NFIC Web site at: http://www.nfic.org

NFIRS 5.0 RESOURCES

Complete Reference Guide (*Handbook*)



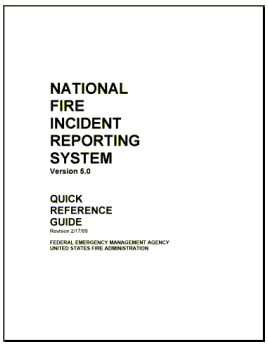
The *Complete Reference Guide* (CRG), commonly referred to as the "NFIRS *Handbook*" or "*Handbook*" is an instructional manual for the use of NFIRS Version 5.0 modules. NFIRS (pronounced "INFURS") was designed as a tool for fire departments to report and maintain computerized records of fire responses and other fire department activities in a uniform manner. This system is made available to fire departments by FEMA through the USFA.

A series of basic phrases with number codes are used to describe the incidents in the system. The *Handbook* offers both alphabetic and numeric lists of codes. Many of the descriptive phrases were developed in cooperation with the NFPA. They are based on NFPA 901. Appropriate codes are included in the *Handbook* for your convenience.

This *Handbook* represents the fifth version of NFIRS. Version 5.0 is a modification and improvement of previous versions. Most of the improvements are the result of suggestions made by participating fire departments, State agencies, and representatives from the NFIC. The information contained in the *Handbook* is based on almost 20 years of experience in NFIRS fire data collection by up to 49 States and 35 major metropolitan areas. More importantly, well over 14,000 of this Nation's fire departments are supplying NFIRS data.

Aside from being an excellent fire department management tool, the system provides data for fire analysis to detect trends on a local, State, and national basis. The resulting information is used to help reduce the needless loss of life and property due to fire in this country.

Quick Reference Guide



The QRG also can be used as NFIRS 5.0 modules are prepared. It includes a brief description of how data are to be entered in each section, block, line, and field of each Module. There are also code listings--many grouped into categories and some alphabetical--to make field entries. The last portion of the QRG contains abbreviations for street types; States, territories, and Provinces; and countries.

NFIRS Web Site

A specific NFIRS Web site--http://www.nfirs.fema.gov--can provide a variety of assistance. It has answers to a number of questions and provides a place to ask questions. The *Handbook* and QRG can be downloaded from the site. A document there called "Incident Type/Module Rules" notes how and when various modules are used. A tutorial on the site walks you through the steps of completing a module electronically. The Web site also is the place to access a copy of the USFA client software and a list of certified vendor software (/vendorcert.htm). Accessible from the home page is a news section (/news.htm) with the latest information regarding NFIRS.

Activity 0.1

Introductions

Purpose

To provide you an opportunity to meet each other, gather some basic data, and use the data to draw conclusions and make predictions.

Directions

1. You will be assigned to a group with three or four other people.

2. Each group member should tally data on the chart below as members introduce themselves.

3. Each group member provides the following data as a means of introduction:

   a. Name, department, and title, rank, or position.

   b. Travel time from home to class (or bus or airport).
   __ < 10 minutes __ 11-30 minutes __ 31-60 minutes __ > 60 minutes

   c. Primary mode of transportation.
   ___ car ___ bus ___ airplane

   d. Types of incidents to which the department responds.
   ___ fires ___ wildland fires ___ EMS ___ haz mat

   e. Total number of incidents per year.
   __ < 100 __ 101-1,000 __ 1,001-5,000 __ 5,001-10,000 __ > 10,000

   f. Years of experience with NFIRS.
   __ < 1 year __ 1-3 years __ 3-5 years __ 5-10 years __ > 10 years

   g. Type of data collection system.
   ___ paper-based ___ computer-based

4. On the following worksheet, complete the data gathered, and make a list of the conclusions that could be drawn about your group and predictions that could be made about the whole class based on the data.

5. Your group will have 15 minutes to complete its work.

6. Be prepared to introduce yourself by name and department to the whole class.

7. Someone from the group will report the data collected, conclusions drawn, and predictions made.

Activity 0.1 (cont'd)

Worksheet

Travel Time	___ < 10 min. ___ 11-30 min. ___ 31-60 min. ___ > 60 min.
Travel	___ car ___ bus ____ airplane
Incidents	___ fires ___ wildland ___ EMS ___ haz mat
Number	__ < 100 ___ >101 __ >1,001 ___ >5,001 ___ >10,000
Experience	__ < 1 __ 1-3 __ 3-5 __ 5-10 __ >10
System	___ paper-based ___ computer-based

Activity 0.2

Uses of Data

Purpose

To stimulate your thinking about the uses of NFIRS data and who uses them.

Directions

1. Review the documents in the Appendices to this unit regarding uses of data.

   a. "The Important Uses of NFIRS Data." *Fire Chief* (Jan. 1989), pp. 27-30.

   b. "Facts and Figures at Your Fingertips." *Fire Chief* (June 1993), pp. 48-51.

   c. "Uses of NFIRS." USFA (1997), pp. 3-18.

2. Make a list of as many local uses of data as you can find in the documents plus any others you can add from your experience.

3. Make separate lists of State and national uses of data and who might use them.

4. You will have 25 minutes to review the material and prepare your lists.

5. Be prepared to share your information with the rest of the class.

Activity 0.3

Use of NFIRS Data Quality Control Method

Purpose

To familiarize you with the differences between the required and nonrequired data fields in the various NFIRS modules.

Directions

Identify whether the data fields are required, and identify the required module(s) that contains the data fields.

#	Data Field	Required	Not Required	Module
1	Incident Number			
2	Census Tract			
3	Incident Type			
4	Alarm Date/Time			
5	Controlled Date/Time			
6	Primary Action Taken			
7	Secondary Action Taken			
8	Mixed Use			
9	Property Use			
10	Dollar Loss			
11	Area of Fire Origin			
12	Equipment Power			
13	Presence of Detectors			
14	Building Status			
15	Severity			
16	Factors Contributing to Injury			
17	Age or Date of Birth			
18	Race			
19	Ethnicity			
20	Person/Entity Involved			

Activity 0.4

Structure of NFIRS 5.0

Purpose

To familiarize you with how NFIRS 5.0 is designed, the modules it contains, and tools available to help you complete the modules.

Directions

1. Working in your small group, fill in the Worksheet on the following page.

2. Use pages SM 0-3 to SM 0-28 of your Student Manual (SM) and a QRG to find the information you need.

3. You will have 15 minutes to complete the Worksheet.

4. Be prepared to share your answers with the rest of the class.

Activity 0.4 (cont'd)

Worksheet

1. There are three basic purposes of an incident report at the local level. Name two of these purposes.

   a. _____

   b. _____

2. Name the publication that recommended the establishment of a national fire data system. _____

3. Identify three benefits of a uniform incident reporting system.

   a. _____

   b. _____

   c. _____

4. List three factors that make NFIRS 5.0 easy to use.

   a. _____

   b. _____

   c. _____

5. Note two elements that could be said to reflect the comprehensiveness of NFIRS 5.0.

   a. _____

   b. _____

6. Explain when the Basic Module (NFIRS 1) is used. _____
   _____

7. Explain the purpose of the *Handbook*. _____
   _____

8. Explain what is meant by the symbol (☆) on the paper forms. _____
   _____

SUMMARY

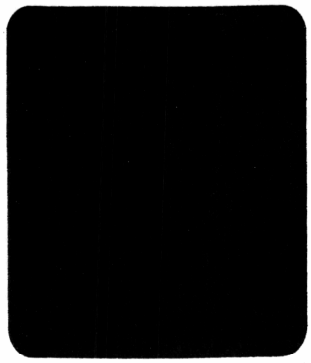
This unit has provided a brief overview of the development of NFIRS, including the need to collect data as identified in *America Burning*. The role of the USFA in data collection also was described.

Some advantages of NFIRS 5.0--ease of use, compatibility, comprehensiveness, preciseness of reporting, etc.--were listed and explained.

Then the 11 modules in the system were identified, and the intended use of each was introduced.

Finally, two valuable references that can be useful in completing the modules--the NFIRS *Handbook* and the *Quick Reference Guide*--were described.

APPENDIX A



The important uses of NFIRS data

By Philip Schaenman
President, and
Hollis Stambaugh
Senior Research Associate
TriData
Arlington, Virginia

This update on the National Fire Incident Reporting System discusses the uses and needs for the data, and the outlook for the future of the system.

The National Fire Incident Reporting System, developed and supported by the U.S. Fire Administration, has become the major source of fire data in the United States. It is used in fire protection policy decision making and program management at the national level on a regular basis. Its use has led to important changes in the thrust of U.S. fire protection. And it is a crucial research tool. Yet the thousands of firefighters who record fire data in their local community are unaware of the contribution they are making to American fire safety.

It is extremely important that those who collect this data understand it is being used for crucial decisions. If they do not collect the data with the utmost accuracy and completeness, major fire policy decisions can go on the wrong track, costing millions of dollars and many lives. The thousands of firefighters who have to toil over detailed data forms, often in the middle of the night, must understand they are not just fulfilling some bureaucratic requirement. It is a critical fire protection function that no one but them can perform. They were on the scene and saw what happened, and we depend on their irreplaceable information.

No one can comprehensively tabulate the uses of NFIRS. The system exists in many places—logs are not kept of every use. Some of the uses are confidential. But it is easy to identify the important roles NFIRS plays. This article will present examples of NFIRS uses so the people collecting this data, who are also involved in supporting the system, can appreciate the contribution they are making. Knowledge of existing uses also may stimulate new ones.

What is NFIRS

The National Fire Incident Reporting System is one of the principle responsibilities of the Office of Fire Data and Analysis in the U.S. Fire Administration. This responsibility has been increasingly shared with the National Fire Information Council, a users' organization comprised of state and metropolitan fire departments that collect NFIRS data.

For those not familiar with the system, it works as follows: fire departments in participating states fill out a common core of information on each fire incident they attend using the same set of definitions. This information is sent on state fire incident forms, or computer-readable media, to a central state office. The office edits and tabulates the data, and sends tapes each quarter-year to the USFA. There the data from the various states are edited again and merged into several large files. Separate NFIRS forms are filled out to describe the fire incident, civilian casualties, and firefighter casualties.

A large sample of the nation's fire incidents (about 40 percent) is collected each year, and the size of this sample is growing. There are now 40 states participating in the system. Over 13,000 fire departments in these states fill out the forms—more than double the number that were doing so six years ago.

NFIRS users

There are many types of NFIRS data users, including the fire service, state and federal agencies, industry associations, codes organizations, fire academies, universities, law firms, fire protection equipment manufacturers, manufacturers of "equipment involved in ignition," fire consultants, the fire research community, Congress, special interest groups and others.

Perhaps the fundamental use of NFIRS is in understanding the characteristics of our nation's fire problem at the national, regional, state and community levels. The characteristics of the fire problem, the relative magnitude of the problem compared to other problems, and the magnitude of different parts of the fire problem are used to allocate fire protection resources within several federal agencies, and to identify specific fire protection problems they should address.

NFIRS data is used by the USFA Office of Fire Data and Analysis to identify emerging fire problems and to rank the causes and scenarios of fire. This information is used to target studies of the leading fire problems in more detail than is possible with routine data collection.

For example, when it was discovered several years ago that the southeast United States had the highest fire death rate of any region, the USFA chartered a study with the Center for Fire Research to identify the causes of fire deaths in the South in greater detail. That

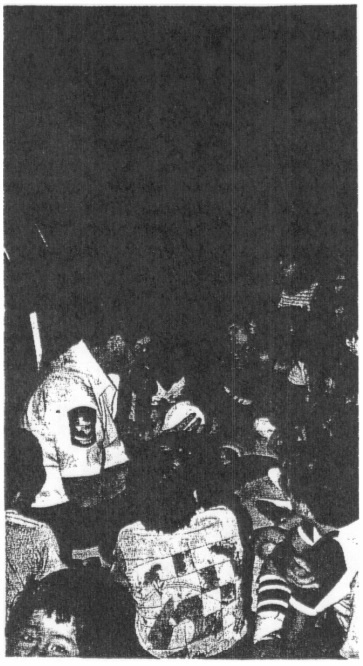
study confirmed what had been learned through NFIRS—heating, especially alternative heating such as portable space heaters, was the surprising and leading cause of fire deaths in the Southeast.

Using NFIRS to identify the broad fire problem, and following up with more detailed studies, was one of the concepts of NFIRS use from the start. So NFIRS is used not only directly but as a way to identify how to target data collection and analysis resources.

The USFA is often required to testify before Congress on various fire issues and specific bills. The NFIRS data is a bedrock for forming USFA testimony on many of these positions. For example, the USFA supported the Cigarette Safety Act and served as one of three agencies guiding the technical study group that implemented the research under the act. Motivated by data from NFIRS, the group showed careless smoking continued to be the leading cause of fire deaths even though the trend was headed downward. The USFA also used NFIRS data in its testimony on the recent hotel sprinkler protection bill.

The USFA Office of Fire Prevention and Arson Control uses the data from NFIRS to choose targets for its national fire prevention campaigns. The fact (discovered through NFIRS) that three-quarters of the household fires occurred where there was no detector, or the detector was not working, led to choosing smoke detector use and maintenance as the prime thrust of the first major national campaign undertaken by that office. Additional campaigns are targeted at rural heating and fires set by children, which were also selected on the basis of their high NFIRS raking.

The Consumer Product Safety Commission is one of the heaviest users. In a major policy change brought about by NFIRS's existence, the CPSC started choosing consumer products for its fire safety programs in the late 70s using rank orderings of "equipment involved in ignition," "form of material ignited," and "form of heat of ignition" from NFIRS. Products such as portable space heaters, wood stoves, metal chimneys, upholstered furniture, cigarettes and cigarette lighters have been selected for special attention. The CPSC uses NFIRS in conjunction with a variety of other data sources, such as its own National Electronic Injury Surveillance System.



The Fort Worth Fire Department uses fire data in many aspects of its public education program—planning, delivery, evaluation.

NFIRS has also been used by CPSC to identify the fact that children in the age range of two to four were at risk from fires involving cigarette lighters. This led CPSC to initiate prevention programs aimed at reducing that hazard.

NFIRS data was used to evaluate progress in reducing apparel fires, and to compare information collected from CPSC in-depth investigations. In some instances, NFIRS was used as the source to identify candidate fires for the in-depth investigations. The results showed that while fire deaths among children are way down and children's sleepwear standards have worked, there remains a problem with sleepwear used by elderly women.

In addition to guiding its major fire safety program, CPSC uses NFIRS data for inquiries regarding consumer products from the public, the CPSC staff or Congress. Sometimes NFIRS is used to show that there is not a widespread problem involving a product under suspicion.

Many other federal agencies use NFIRS data directly or through contractors. The Department of Housing and Urban Development, contracted with TriData Corp., examined NFIRS data to determine whether the 1976 Manufactured Housing Standard was having an effect on mobile home fires. The results showed conclusively that the standard was indeed working. Newer mobile homes had a better safety record than older homes. The particular fire hazards targeted by the standard seemed to have been reduced.

The Center for Fire Research at the National Bureau of Standards has used NFIRS to assist in developing fire models for fire risk analysis. The center was the first to undertake rank ordering of fire scenarios on a national scale to better define the fire problem.

The Environmental Protection Agency has tapped NFIRS to research fires with environmental implications; for example, fires involving gasoline tanks in cars in both crash and non-crash situations. There is likely to be more interaction with the EPA in the future as more departments collect data on hazardous materials incidents using the NFIRS hazmat form, which is being developed.

The U.S. Public Health Service,

through its Center for Disease Control, began analyzing NFIRS data in 1987 on fire causes, injuries and deaths. The CDC decided to initiate a program in fire prevention in addition to disease prevention. The NFIRS information is being used to design programs aimed at preventing residential fire deaths and burn injuries to children.

The Coast Guard routinely checks NFIRS data on fires occurring in pleasure boats under 65 feet to monitor the need for more extensive safety regulations.

Private industries

Major industries whose facilities are at risk from fire or whose products are involved in fires use NFIRS data. The American Hotel and Hotel Association has looked into the numbers and characteristics of fires and fatalities in hotels. NFIRS and National Fire Protection Agency data showed that the trend in hotel fire deaths is down. Most hotel fire fatalities occur where sprinklers are not present.

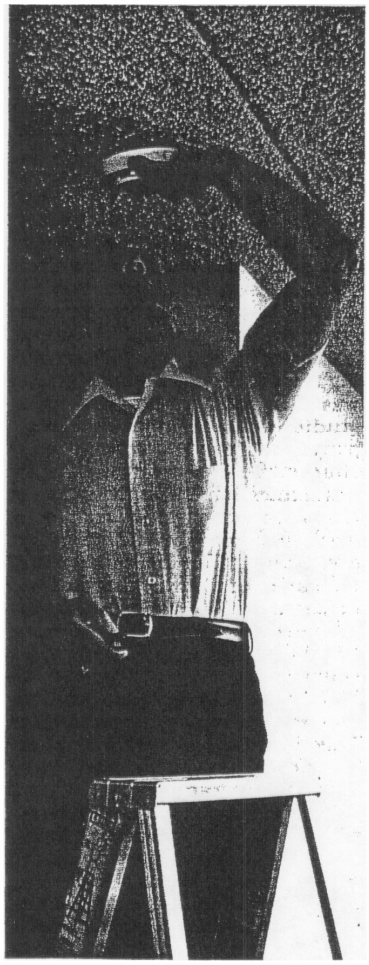
The Tobacco Institute has sponsored analysis of fire deaths and injuries trends related to careless smoking, and the types of materials first ignited. The institute also used NFIRS data to help shape its fire prevention program and to evaluate grant requests relative to fire prevention.

The Wood Heating Alliance sponsored studies of chimney fires and the frequency of fires involving woodstoves, fireplaces, fireplace inserts and furnaces. NFIRS has been crucial in providing data such as the extent of damage, dollar loss and whether the presence of smoke detectors correlated with the type of equipment involved in the fires. The National Forest Products Association maintains a set of the NFIRS computer tapes and tracks the involvement of wood and wood products in fires.

NFIRS is often used to determine characteristics of specific fire problems so entrepreneurs can judge whether their ideas will have a large enough market to be worth developing. For example, one inventor wanted to know how many church fires were caused by candles. He developed a "safer" candle and was looking for statistics to market it.

Courts and law firms

The NFIRS data is frequently used in litigation, and in settling issues out of court. Litigation can lead to safer products, better warning information on consumer products and safer service delivery. It can also damage a firm's reputation unfairly. NFIRS data plays an important role in the fairness of the process to both sides in a litigation case.



Statistics are used to motivate citizens to action. Here a senior installs a smoke detector.

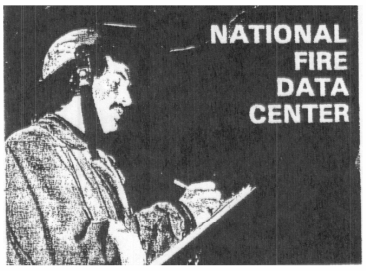
Sometimes a manufacturer who is being sued for a product's involvement in a fire will cite NFIRS data to show that that was unlikely. For example, a stereo manufacturer was able to use the NFIRS data on the make and model of equipment involved in ignition to show that there was only one single fire in the NFIRS data base that cited one of its products, whereas there was a vastly larger number of fires for the alternative fire scenario being considered. This argument was used to supplement investigators' reports in establishing the relative likelihood of the causes, and the company did not have to go to trial.

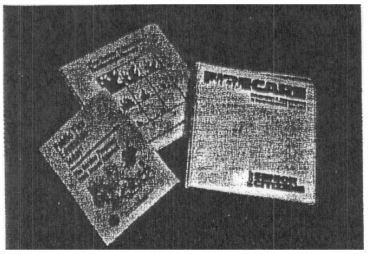
In another case, an "Instant On" television set was the subject of a special NFIRS search by the USFA after one caught fire in the capital building in Texas. A security guard died in the fire. NFIRS showed that this brand was involved in fires only slightly more frequently than other makes, and the suit was settled out of court.

More often, NFIRS data is used to discover scores or even hundreds of fires in which a specific product is involved in a particular fire scenario. That often causes the product manufacturer to settle out of court, rather than have reams of printout from fires that occurred all over the country displayed in court to demonstrate the involvement of their product. It also can convince a manufacturer to take a second look at the safety of the product.

NFIRS can make distinctions between product failures and misuse of the product. Manufacturers can be required to spend millions of dollars on cases where the firefighters at the scene reported that the fires were caused by failure of their product. For this reason, firefighters should record data with scrupulous attention to accuracy. Do not take lightly the idea that a product "shorted out" when it is not known what really happened.

Many court cases involve the absence of smoke detectors or sprinklers. NFIRS data can be used to show the tremendously improved odds for life safety where smoke





Top: Firefighters collect NFIRS data at over one million fires a year. Above: NFIRS data suggests the most critical fire safety topics to cover in public education programs, such as the Fire Safety Evaluation Survey *and* FireCare for the Elderly *of the Tobacco Institute, and fire department programs described in the U.S. Fire Administration's* Public Fire Education Today: Programs from Across America.

detectors or sprinklers exist. Those statistics coupled with expert judgement that the detector would have made a difference in a particular situation often carries the day.

In addition, data-base management systems applied to NFIRS data can easily handle multi-conditioned and specific questions, if they are asked by the court.

Non-profit groups

The National Fire Protection Association uses NFIRS regularly. In response to special requests for customized searches from a myriad of organizations, such as fire departments, insurance companies, vendors and educators, NFPA scopes and specs these ad hoc orders over the phone, then does an analysis of national estimates using NFIRS to answer the question, plot the trend, or prove or disprove the hypothesis.

The NFPA also uses NFIRS as a component in research studies. In addition, NFIRS data is used to support NFPA's own program requirements, ranging from content and design of public education materials to marketing products and meeting the requirements for information from the various NFPA technical committees.

Insurance companies

Some insurance companies use data on losses per fire and characteristics of the losses by fixed property use to help decide which types of industries to target for marketing insurance. For example, NFIRS was used to analyze radio and TV studios for one insurance company, and analyze food stores and shoe stores for another. Some companies have used NFIRS data to evaluate the risk of residential wood heating appliances. However, overall, the insurance industry has used NFIRS less than anticipated.

There are a myriad of other NFIRS users, including public fire educators, who use the "big numbers" on specific fire problems to initiate local fire safety campaigns. This data is used to alert the public, and to justify requests for funding new programs, such as counseling juvenile fire-setters. The media also uses NFIRS to provide information on a particular fire problem as background for a story they are doing. Academic and research institutions also rely on the NFIRS information for their studies.

State and local use

The basic idea behind NFIRS is not just to obtain national estimates of the fire problem. The second major purpose of NFIRS was to stimulate data collection and analysis for use at the local and state levels. State and local uses are similar to the national uses of the data. Sometimes local NFIRS data use can have even larger impacts than at the national level because most codes are local or statewide; we do not have national fire or building codes. The State Fire Marshal's office in a western state used NFIRS data to affect legislative changes governing the use of butane and propane in that state, something not done at the national level.

In addition, participating fire departments and states can compare their data to others using common data formats and definitions. This state and local use of NFIRS has stimulated thousands of communities to start using hard data for their fire protection management decision making, and to improve local data systems where they already existed when NFIRS started.

Another purpose of NFIRS and its associated data analysis is to provide models for states and localities to learn how to analyze their own data. The excellent annual reports from the states of New York and California, for example, use some of the analysis ideas and formats developed for the national analyses.

How much more important can a data system be? NFIRS has a myriad of uses. It affects the safety decisions on the products in our homes. It has been used for setting budgets and allocating priorities among various fire protection issues, and for evaluating programs. NFIRS has helped identify trends faster than ever before. It has determined the danger of models of products by looking at their frequency in fires around the nation.

NFIRS is not the answer to every question, nor was it intended to be. It is intended to bind fire problems into areas that may require more detailed, in-depth investigations or supplemental statistical studies. A firefighter cannot collect all possible information on every fire. But there is no denying that NFIRS in an extremely important part of our national fire protection system. We will waste resources and kill more people if we let the NFIRS system degrade. It is extremely important for everyone collecting NFIRS data to take their job seriously. Million-dollar issues and life-and-death questions are resolved using NFIRS data. This use must be conveyed to local firefighters, along with the message that their efforts have been tremendously helpful in the past decade.

There is a long way to go toward making even better use of NFIRS. But we have a national fire data system, and it has worked admirably well. Everyone associated with NFIRS at the local, state and federal level should feel proud of the contribution they have made. NFIRS will continue to help guide fire protection in the U.S. thanks to their efforts. □

This report was prepared for the U.S. Fire Administration under contract number EMW-C-87-2650. Acknowledgement: John Ottoson of the USFA and Dr. John Hall of the NFPA provided the authors with many examples of the use of NFIRS.

Facts and figures at your fingertips

Computerized fire reporting can help you win the numbers game — in everything from budget requests to improving the services you provide.

By Robert Delgado
National Fire Information Council

More and more fire departments are finding themselves confronted with increasing demands to provide information, prove their cases and present their recommendations by the numbers. If it hasn't happened to you, it soon will. And when it does, how will you react? Will you think, "Oh no, it'll take forever to dig out the information"?

There was a time when the veteran fire chief could proudly point to his years of experience and have his recommendations accepted based on his professional opinion. Today, there exists an increasing need for documentation: for problem-solving, program development and budget justification. That's where computerized fire reporting comes in.

One of the first tests of computerized fire reporting involved six California departments: two small, two medium and two large. This 1972 test was so successful that a statewide reporting system was implemented the following year.

In 1974, the National Fire Incident Reporting System was established by the National Fire Data Center of the U.S. Fire Administration. When it was introduced, only six states participated in the program — California, Maryland, Missouri, New York, Ohio and Oregon.

Today, 42 states representing thousands of fire departments — including 28 metropolitan departments serving populations of more than 500,000 — use NFIRS as their reporting system. The fire service's acceptance of NFIRS, which is now run by the National Fire Information Council, is notable not only because it is so widespread, but also because it represents a recognition of the need for timely and accurate information.

NFIRS began in the 1970s and became popular in the 1980s. Now, in the 1990s, an obvious question is, "How successful is NFIRS?"

The answer depends on how "success" is defined. Clearly it cannot be measured merely by a count of the systems installed throughout the United States. Forty-two states producing the world's largest fire database is impressive —12 million fires, and growing by 1 million each year. But success is more than national statistics.

The real measure of success is whether NFIRS has, in fact, become what it was designed to be — an important and useful source of information for the fire service.

In other words, where NFIRS has been installed, does it still take forever to dig out the information? Is the information collected by the firefighters and fed into the computer giving the department the information it needs to survive in today's tight economy?

Here are 11 examples from fire departments all over the United States to tell the story.

Better response times

NFIRS can highlight disproportionate fire station workloads or unacceptable response times. Some departments have used this to redraw response areas and improve fire protection.

Boise, Idaho, has a 10-station fire department. To improve services, they recently relocated Station #6 and are taking a closer look at Stations #2 and #9.

NFIRS data is helping Boise make effective decisions for the future. "Because of NFIRS data we'll determine the impact of mutual aid and the alarm activity that can be expected based on existing as well

as new construction in the area," says Deputy Chief Lan Smith. The department is also examining Insurance Service Office requirements.

Wilmington, Del., houses six engines and two ladders to protect its 110,000 daytime population. When NFIRS data made it apparent that the majority of the serious auto accidents were occurring along I-95, the chemical unit, which was automatically dispatched to all accidents, was relocated from across town to a station immediately adjacent to the interstate. Response times were greatly improved, and dangerous emergency travel on surface streets was reduced.

Arson tracing

Many problems are encountered when a department is trying to control arson. For example, fire-setters do not observe city limit boundaries, and nuisance fires are not always immediately recognized as having been intentionally set.

NFIRS reports list fires by time, date and location for easy trend recognition. Additionally, statewide NFIRS reporting means that all fire departments report the same way, so arson tracking is more effective.

Calumet City, Ill., with two stations and some 37,000 residents, is located just across a river from Chicago. Chief Louis Coneen reports that NFIRS arson data was used to successfully apply for a $15,000 grant from Factory Mutual for tracking arson.

The grant was used to install new computer hardware, share NFIRS arson data from all surrounding departments and train investigators to combat arson in a task-force approach. "This is the only way we're going to solve the budget problems of today, sharing our information and working together," Coneen says.

In June 1988, Wilmington was experiencing a rash of nuisance fires, some of which, investigators determined, had been intentionally set. They examined NFIRS reports of all recent nearby fires and discovered a pattern of when and where the fires were occurring. This resulted in a stakeout that was so accurate the arsonist was videotaped setting the next fire and confessed to 14 others.

In January 1991, Wilmington had a similar rash of fires. Investigators recognized the trend of arson fires and set up another successful stakeout, this time solving 18 fires.

Firefighter injury prevention

A primary purpose of training is to enable the department to perform evolutions smoothly, without delay or injury, under the adverse conditions that are common at the fire scene. NFIRS can show when specific training or retraining is needed. Output reports list injuries by type and by what activity the firefighter was engaged in at the time.

Wilmington uses NFIRS firefighter injury reports to note when the same types of injuries occur, or when injuries are associated with a specific activity, such as ladder raises. Training programs are then focused on preventing those injuries, and future NFIRS reports are monitored to see if injuries decrease.

Today, there exists an increasing need for documentation: for problem-solving, program development and budget justification. That's where computerized fire reporting comes in.

Fighting false alarms

False alarms have always been a serious problem for the fire service. Finding a solution requires knowing when, where and why the problem is occurring. NFIRS tracks false alarms and indicates whether they are accidental system malfunctions or malicious false alarms.

In Miramar, Fla., a city of 40,200 located between Miami and Ft. Lauderdale, NFIRS data proved there was a false alarm problem and convinced local officials to adopt a Nuisance False Alarm ordinance in 1991. The regulations allow two false alarms in a year. The third brings a $100 fine, and each additional false alarm doubles the fine to $200, $400 and so forth.

In 1990, Boise also used NFIRS to prove the need for a similar ordinance. After two false alarms in a year, each additional call is a $50 fine. If the problem continues, the fine can increase to $125 after more than five in a year.

For more information about computerized reporting systems, contact NFIC, P.O. Box 23221, Lansing, Mich. 48909, 517-655-5855.

Automatic ALS billing

NFIRS can also help calculate Advanced Life Support transportation costs. With 3,500 annual calls, Miramar used NFIRS to sort out its billing. Now, each medical call is coded with three digits to indicate the zone in which the transportation occurred. A simple table with zone-to-hospital distances automatically calculates the transportation fees.

Developing strategies

NFIRS facilitates the development of special prevention strategies for any type of fire that may be a problem in a particular area.

For example, the Oregon State Fire Marshal's office recognized a regional trend of school fires by looking at NFIRS data for 1978–88. Working with the insurance industry, they focused on the problem statewide.

Investigation revealed that in every case the fire had been set from inside the school. To help combat the problem, the insurance industry offered Oregon schools free intrusion-alarm systems if the schools would accept responsibility for their maintenance. NFIRS provided the key information needed to bring together the insurance industry, state fire marshal and local fire departments to make schools safer and help control the fire problem.

Juvenile programs

Boise uses trained fire staff and specially developed video seminars to counsel children and their parents in the dangers of fire. Boise can now measure the results of its juvenile fire-setter program success with the same tool that justified its implementation — NFIRS data.

NFIRS also demonstrated that Oregon had a serious juvenile fire-setter problem and was crucial to convincing the fire service to develop an intervention program. Oregon parents can now take a child who plays with matches, for example, to a local fire station where trained personnel perform an interview.

If the problem appears serious, fire personnel refer the parents to a professional counselor. The training, counseling and referral program is funded by the state and staffed with 1.5 positions. NFIRS data spotted the problem and justified funding the solution.

Public education programs

Public education programs in the United States, where they exist at all, tend to be limited and understaffed. Thus, departments need a tool to focus their limited resources. NFIRS can be that tool.

Wilmington uses NFIRS to manage its public education program. The one full-time public education officer analyzes the NFIRS reports that list fires and their causes by census tract, targets the area of highest need and tailors the program to solve the specific problem.

Calumet City Chief Coneen routinely uses NFIRS data for fire prevention purposes. In 1991, reports indicated that kitchen fires were a serious problem, so he canvassed the targeted neighborhoods with fire prevention information using the local newspaper and the local alderman's newsletter.

"I know where my fires are occurring, by address or census tract — the system gives me the whole nine yards," Coneen says. "When I want the answer, I want it now."

Clearinghouse for reports

Several states offer fire-related information that was not available before they implemented NFIRS.

The Oregon State Fire Marshal's

office functions as the clearinghouse for requests for that state's fire data. "We routinely receive requests from insurance providers, property owners, attorneys and media that would otherwise be a burden to the local fire departments," says Roger Rogers of the fire marshal's office. What in the past were difficult, or nearly impossible, questions from consumer groups and manufacturers are now often easily answered by the state fire marshal with comprehensive statewide NFIRS data.

Career or volunteer?

Some departments have been reluctant to install NFIRS, or any computerized fire reporting system. Many are apprehensive because they believe that NFIRS requires highly trained career officers as operators.

But Kittering, Ohio, is proof that this is simply not the case. The suburban Dayton department consists of seven fire stations, 45 career firefighters and 120 volunteers. Do Kittering volunteers complete NFIRS reports at the close of an incident? "Absolutely," says Inspector Kenneth Ongard.

A successful system

County, Ga., in recent years had to select a reporting system. A rapid increase in the county's population highlighted Fayette's need for a reporting system to provide management information. The final plan included developing 911 capability, computer-assisted dispatch and computerized fire reporting at the station level.

"We recognized that there was an absolutely tremendous need to have standard information at the national level," says Chief Jack Krakeel, "but we also knew that what we needed was a system that would help us manage our department. We found that NFIRS was the only system that gave us what we needed and that our data would match with other departments, apples to apples."

So in 1989 NFIRS was installed in the Fayette County Emergency Services Department

NFIRS is clearly a valuable management tool for the fire service. If you have NFIRS in your department, ask yourself if you're using it — really using it — to manage the department. If you don't have NFIRS, ask yourself why. Or better yet, you might want to ask your state — it may well be that officials are just waiting to hear you say you want it.

In state after state, NFIRS was installed where it was wanted, often initiated by the state fire marshal, but sometimes in response to the requests of the fire departments.

The fact is, in any case, once the fire is knocked down, your firefighters take information at the scene and make journal entries at the station. So, if you don't have NFIRS and wonder what it's like, think of it as being as simple as one, two, three:

One: Fill out a report after each emergency (which your department does anyway).

Two: Convert the information into standardized data so it can be entered into the system.

Three: Receive output reports.

The system set up in each state varies; some states have departments send in forms, others accept diskettes and others send the information on data lines. No matter what the variables, NFIRS gives answers. NFIRS can help you "Fight Fire with Facts." FC

Robert Delgado recently retired as deputy chief with the San Jose (Calif.) Fire Department, where he continues to serve as NFIRS program manager, a position he has held since 1982. As deputy chief, he managed the communications center and fire protection planning, and previously served as the fire marshal. He holds associate's degrees in fire science and management and a bachelor's degree in public administration.

APPENDIX B

FA 171 / June 1997

Uses of NFIRS

The Many Uses of the National Fire Incident Reporting System

Federal Emergency Management Agency
United States Fire Administration
National Fire Data Center

USES OF NFIRS

The Many Uses of the National Fire Incident Reporting System

June, 1997

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USES OF NFIRS

The Many Uses of the National Fire Incident Reporting System

INTRODUCTION

The National Fire Incident Reporting System (NFIRS) is an information system initiated and supported by the U.S. Fire Administration. The U.S. Fire Administration developed NFIRS as a means of assessing the nature and scope of the fire problem in the U.S. The system first came on line in 1976, and since then it has grown in both participation and use. This report is an attempt to capture the many ways that NFIRS data are used and the many types of organizations that benefit from its availability. These organizations include:

- agencies within the fire service itself, such as local fire departments, State Fire Marshal's offices and the U.S. Fire Administration;
- other agencies of the federal government, such as the U. S. Consumer Product Safety Commission, the National Highway Traffic Safety Administration, and the National Institute of Standards and Technology; and
- private industry organizations, including national associations for home appliance product manufacturers and the hotel and motel industry, insurance companies, attorneys and many others.

Because access to NFIRS is so widespread it is impossible to report every use of the data. Instead, this report will give readers a sense of the many uses and users of the information available in NFIRS.

How NFIRS Works

The U.S. Fire Administration (USFA) and the National Fire Information Council (NFIC) jointly manage NFIRS. NFIC is a users' group comprised of volunteers who donate their time to maintain the existing system and research and implement changes to improve it. The members of NFIC come from state agencies and metropolitan fire departments responsible for fire data collection

and analysis. As federal budgets have been reduced, the role of NFIC has expanded. Due to the extraordinary commitment of the members of this council to NFIRS, as well as the ongoing support of USFA, the system maintains its high level of performance.

As critical a role as the members of NFIC play, the heart of the system is dispersed across the country, in the 14,000 fire departments that participate in NFIRS. After responding to an incident, fire department personnel fill out the appropriate NFIRS reports. These describe the nature of the call , the actions firefighters took in response to the call, and the end results. The latter include the number of any civilian or fire fighter injuries or deaths and an estimate of property loss. While specific forms filled out by a local fire department may be state-specific, they contain a core of information common to every state's reporting system. The uniformity of definitions used in coding these fields makes aggregation of national data possible.

Local fire departmen ts forward completed NFIRS forms, which are filled out either manually or via computer, to the state agency responsible for NFIRS data. The state agency electronically submits data compiled from all participating jurisdictions to the U.S. Fire Administration. Annual NFIRS data are used as the basis for the U.S. Fire Administration's publication *Fire in the United States,* which is the single most comprehensive reference on the nature and scope of the fire problem in the U.S.

History of NFIRS Participation

Because NFIRS is a voluntary system, not all states or fire departments within states participate. In 1977, one of the early years of the system, 5 states regularly reported data to the National Fire Data Center, and 19 others had data systems in some stage of development. Since then participation has increased to include jurisdictions in 41 states, and over 14,000 of the more than 30,000 U.S. fire departments report to NFIRS. It is estimated that 44% of all fires that fire

departments respond to are captured in NFIRS, making NFIRS an extremely large sample of all fires that occur each year.

Because states have the flexibility to adapt their state rep orting systems to their needs, and since reporting by localities is voluntary, the design of a state's data collection form can vary from state to state. However, NFIRS was designed so that data from state systems can be converted to a single format that is used at the national level to aggregate and store NFIRS data.

Table 1 lists the states that are currently participating in NFIRS. Other states, such as North Carolina and Delaware, have fire information reporting systems but do not participate in the national NFIRS. One goal of this report is to document the level of participation and the usefulness of NFIRS data. This can be used to encourage continued participation in the system and to encourage additional states and fire departments to join.

Table 1. 1994 List of States Participation in NFIRS

Alabama	Kentucky	Oregon
Alaska	Louisiana	Rhode Island
Arkansas	Maryland	South Carolina
Arizona	Massachusetts	South Dakota
California	Michigan	Tennessee
Colorado	Minnesota	Texas
Connecticut	Montana	Utah
District of Columbia	Nebraska	Vermont
Florida	New Hampshire	Virginia
Georgia	New Jersey	Washington
Idaho	New Mexico	West Virginia
Illinois	New York	Wisconsin
Iowa	Ohio	Wyoming
Kansas	Oklahoma	

State Uses of NFIRS

Perhaps the most fundamental use of NFIRS is in understanding the nature of the fire problem, whether conceived at the national, state, or local level. One indicator of the usefulness of the system is its utilization by State Fire

Marshal's offices in preparing their annual reports. In an informal review of 31 states' annual reports, all but one included data available from state NFIRS systems. Many states, such as California, Maryland, New York and Texas, use their local NFIRS as the basis for the majority of the content of their annual reports.

One example of the myriad ways NFIRS data can be used for analysis at the state and local levels comes from the Commonwealth of Massachusetts. Massachusetts used its state NFIRS system, MFIRS, to conduct an analysis of motor vehicle fires. First, the Division of Fire Prevention of the Department of Public Safety used MFIRS to identify vehicle arson as a major problem in the Commonwealth. Their report states that between 1986, when the problem was first identified, and 1989, vehicle fires outnumbered structure fires. In 1987, a new law went into effect that required vehicle owners to complete a report at fire headquarters if they experienced a vehicle arson and wanted to pursue an insurance claim. In 1990 the Division of Fire Prevention issued a follow-up report based on MFIRS data to demonstrate the effectiveness of that law. It reported that motor vehicle fires dropped by 35 percent between 1987 and 1990 and that vehicle arsons dropped by an even more dramatic 52 percent. [1]

Local Uses of NFIRS

Because there are thousands of local fire departments using NFIRS, it is impossible to document all the ways they are using the data. For departments in states that rely heavily on NFIRS for reporting fire statistics, an important advantage is that local fire departments can compare their own productivity and effectiveness with the state average. They can also seek out statistics on fire departments in communities similar to their own and conduct comparisons.

[1] The Commonwealth of Massachusetts, Department of Public Safety, Division of Fire Prevention. "Motor Vehicle Fires in Massachusetts, 1990." Publication number 16965-17-200-10-1-91 P.S. Report dated September 25, 1991.

The fire department of San Antonio, Texas relies heavily on its local NFIRS. The system is automated at the level of the fire house and runs almost in real-time because firefighters file reports on calls within twenty minutes of returning to the station. The location of calls is recorded in the system using X-Y coordinates that refer to the location the firefighters responded to, which is not always the same as the address recorded when the original call for service was placed. The rich resources of this system allow the fire department to conduct many sophisticated analyses including:

- Identification of trends in the number of calls to the fire department, the types of calls made, and the origin of calls. This information is used, for example, to plan station relocations.

- Justification of fire department budgets to the city council. The system will allow the fire department to count, for example, the number of brush fires it to which it has responded, identify whether the trend is upward or downward, and then make an assessment as to whether the department has enough brush fire trucks in service.

There is little doubt that NFIRS has stimulated thousands of communities to use hard data for their fire protection management decision making and to improve local data systems generally. That NFIRS has made these types of analyses and improvements possible, whether undertaken at the state or local level, is among NFIRS's most important achievements.

Each year USFA receives hundreds of requests for information from NFIRS. Table 2 presents a list of the types of organizations that submitted data requests in 1996.

Table 2. 1996 USFA Organizations Submitting Data Requests

Local Fire Departments	Fire Organizations
Private Industry	Media
Private Citizens	Insurance Companies
U.S. Congress	Product Manufacturers
Federal Government Agencies	Local Governments
State Governments	Law Offices
Universities	

Local fire departments are among the organizations that submit the most data requests each year. This is an indication that NFIRS is meeting one of its most important objectives, which is to assist fire service providers at the local level.

U.S. Fire Administration Uses of NFIRS

The Fire Administration uses NFIRS for many purposes. Among these are:

- prioritizing the many fire issues extant in the U.S. and setting agency goals and objectives;
- identifying aspects of the fire problem that require continued monitoring, additional research, or administrative action;
- quantifying the costs of fire, both in terms of lives and property and educating the public and political leaders about the need for improved fire safety;
- preparing Congressional testimony and justifying budget requests to support the work of USFA;
- facilitating agency management reviews based on performance based budgeting; and
- providing a means of measuring the impact of agency programs and activities.

In addition to the uses of NFIRS described above, the availability and potential applications of NFIRS data are included in course work provided at the National Fire Academy. Examples of these courses are Executive Planning, Executive Development, Community Master Planning, Strategic Analysis of Community Risk Reduction, and Management of Fire Prevention Programs and Code Management: A Systems Approach.

Several of USFA's uses of NFIRS are described in greater detail b elow.

NFIRS data are used by USFA to identify emerging fire problems and to rank the causes and scenarios of fire. This information is used to target studies of the leading fire problems in more detail than is possible with other data sources. For example, when it was discovered that the Southeastern region of the U.S. had

the highest fire death rate of any region, USFA chartered a study with the National Institute of Standards and Technology's Center for Fire Research to identify the causes in greater detail. That study confirmed what had been learned through NFIRS -- that heating, especially alternative heating sources such as portable space heaters, was the surprising leading cause of fire deaths in the Southeast. This study is one example of how NFIRS is performing in ways consistent with the original vision for the system. The data allow USFA to identify a fire problem at the national level and then target resources to undertake more detailed analyses.

In recent years NFIRS data have been used to identify or analyze issues associated with firefighter injuries and deaths and resulted in several reports. These include:

- *Fire and Emergency Medical Services Ergonomics* (March 1996)
- *Minimum Standards on Structural Fire Fighting Protective Clothing and Equipment* (September 1993)
- *Protective Clothing and Equipment Needs of Emergency Responders for Urban Search and Rescue Missions* (September, 1993)
- *Firefighter Autopsy Protocol* (May, 1995)

NFIRS data are currently being used to identify populations at high risk of experiencing fires so that educational efforts can specifically target those groups.

USFA also uses NFIRS data to choose targets for its national fire prevention campaigns. For its first major national campaign, that office chose smoke detector usage and maintenance as its focus. This was in response to NFIRS data showing that three-quarters of residential fires occurred where there was no smoke detector or the detector was not working. Later campaigns targeted rural heating and urban arson problems, problems that NFIRS data revealed accounted for a high proportion of fires and fire losses in rural and urban areas, respectively.

In December 1996 the National Arson Prevention Ini tiative, a project headed by USFA's parent agency the Federal Emergency Management Agency, submitted a six-month report to the President. One of the initiatives under this project was to develop a community action program for arson prevention that localities can rely on in crafting strategies to reduce the incidence of arson in their communities. A pilot program was developed in four communities. One of the selection criteria for inclusion in the pilot program was the degree of a community's arson problem, which was determined by analyzing NFIRS data.

USFA also uses NFIRS data to prepare Congressional testimony. The Fire Administration is often called before Congress to testify on specific pieces of legislation and on a variety of broad fire issues. NFIRS data are one of the bedrocks for crafting USFA testimony. One example of such testimony involved the Cigarette Safety Act. USFA supported the Act and served as one of three agencies guiding a technical study group that implemented the research under the Act. The position that USFA took on this issue was motivated by NFIRS data showing that careless smoking continued to be the leading cause of fire deaths, even though the overall trend in careless smoking deaths was one of decline.

Other Federal Agency Uses of NFIRS

Many federal agencies other than the U.S. Fire Administration use NFIRS data. These agencies include the U. S. Consumer Product Safety Commission (CPSC), the National Highway Traffic Safety Administration (NHTSA), the National Institute of Standards and Technology (NIST), and the Centers for Disease Control and Prevention (CDC) (see Table 3 for a more complete listing). The military services (Air Force, Army, Navy, Marines and Coast Guard), are federal agencies that participate in NFIRS. Each service collects data on fires occurring within their jurisdictions and reports selected data items to the U. S. Fire Administration. In 1996 the U.S. Air Force contracted to have its Fiscal Year 1990-1995 fire data analyzed and summarized. One purpose is to establish

baseline data the Air Force can compare to future years' data. This is of considerable interest at this time because of the number of base closings that have occurred, and the Air Force is interested in tracking whether the nature and/or scope of their fire problem changes with these closings.

Table 3. Partial List of Federal Government Agencies that Use NFIRS Data

Agency
Federal Emergency Management Agency, U.S. Fire Administration
U.S. Consumer Product Safety Commission
Military Services (Air Force, Army, Coast Guard, Marines, Navy)
U.S. Commerce Department, National Institute on Standards and Technology, Center for Fire Research
U.S. Department of Transportation, National Highway Traffic Safety Administration
U.S. Congress, House Basic Research Subcommittee
U.S. Public Health Service, Centers for Disease Control and Prevention
U.S. Department of Justice, Federal Bureau of Investigation
U.S. Department of Housing and Urban Development
U.S. Department of Treasury, Bureau of Alcohol, Tobacco, and Firearms
Library of Congress

U. S. Consumer Product Safety Commission Uses of NFIRS

The U. S. Consumer Product Safety Commission (CPSC) is among the heaviest users of NFIRS data. The data are used to conduct research on potential product fire hazards and to identify the need for product recalls or product repairs in order to limit the fire hazards associated with any product.

CPSC uses NFIRS to help identify consumer products that merit special attention because of the risk of fire associated with their use or because of the way these products react when ignited. Three of the fields from the NFIRS database are particularly useful to CPSC. These are the "equipment involved in ignition", "form of material ignited", and "form of heat of ignition" fields. Based on NFIRS data and other information sources, including its own National Electronic Injury Surveillance System and investigations, CPSC has analyzed the fire risk associated with portable space heaters, kerosene space heaters, wood

stoves, metal chimneys, upholstered furniture, cigarettes, cigarette lighters, and sleepwear, among other products.

The Flammability of Children's Sleepwear. In the late 1970s, CPSC first issued flammability standards for children's sleepwear. These regulations were in response to the knowledge that certain types of sleepwear posed a greater fire hazard to children. Using NFIRS, data CPSC determined that most of the incidents involving ignition of children's sleepwear occurred while children were awake and wearing their pajamas around the house before bed or after waking up in the morning. Most fires started because sleepwear was ignited by matches or lighters, candles, kitchen ranges, stoves, space heaters, and fireplaces. [2]

Once children's sleepwear standards were implemented, CPSC has been able to use NFIRS to monitor progress on reducing the annual number of related child fire injuries and deaths. The NFIRS data have supplemented CPSC's own investigations into the issue of fires related to children's sleepwear.

Child-Resistant Cigarette Lighters. As evident in the example above, NFIRS represents an unparalleled resource for understanding both the U.S.'s most pressing current fire problems and how these problems change over time. In the 1990s CPSC has been active in reducing the risk of fire caused by young children playing with cigarette lighters. CPSC found that many lighters posed a hazard because they were easy for children to light. In July 1993 CPSC, issued a child-resistant safety standard for cigarette lighters.

NFIRS data provided a major contribution to documenting the hazard associated with lighters, demonstrating the incidence of fires started by children playing with lighters and showing that the annual number of these fires remained high while those attributable to other fire causes had declined over time. Analyzing the incidence of fires, deaths, and injuries associated with lighters, CPSC estimated that the new child-resistant lighter standards would

[2] U. S. Consumer Product Safety Commission. Office of Compliance. Letter to Sleepwear Manufacturers dated December 9, 1996.

prevent between 80 and 105 deaths annually among children under the age of five.[3]

The National Smoke Detector Project. Recently CPSC has been active in reducing the fire risk to life and property by being a major sponsor of the National Smoke Detector Project. This project, begun in 1991, was initiated in response to continuing reports of smoke detectors that failed to operate in fires. One element of the National Smoke Detector Project was a Fire Incident Study conducted by CPSC. In this study, CPSC conducted field tests of smoke detectors that failed to sound in the course of residential fires. [4]

While the field tests included investigations of smoke detectors in fifteen cities around the country, NFIRS data were used to evaluate the representativeness of the fires that were included in the final CPSC data set. By using NFIRS data and national estimates of total fire losses, CPSC was able to note consistencies and some discontinuities between their data set and national residential fire data. The general agreement between the distribution of fires in the CPSC data set and NFIRS data on variables such as smoke detector performance, confinement of smoke damage, and type of residential property was an indication to project managers that their data set was reasonably representative of residential fires nationally. [5]

In addition to informing its own safety research efforts, CPSC uses NFIRS data to respond to many inquiries regarding consumer products from the public, CPSC staff, and Congress.

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[3] U. S. Consumer Product Safety Commission, Office of Information and Public Affairs. "CPSC and Industry: Saving Lives Cost-Effectively Through Cooperation, Child-Resistant Cigarette Lighters", available on CPSC's Internet site at http://www.cpsc.gov/cpscpub/pubs/success/lighters.html, revised on May 5, 1996.

[4] *Fire Incident Study; National Smoke Detector Project.* U. S. Consumer Product Safety Commission. Report dated January 1995, pp. 3-4.

[5] U. S. Consumer Product Safety Commission, 1995, pp. 4-5 and p. 9.

The Center for Fire Research

The Center for Fire Research, located within the National Institute of Standards and Technology, is another federal agency that uses NFIRS data on a regular basis. NFIRS data have been used to develop fire models and to conduct analyses of fire risk. The Center was one of the first organizations to rank order fire scenarios on a national scale to better define the U.S. fire problem.

The National Highway Traffic Safety Administration

The National Highway Traffic Safety Administration (NHTSA) is another federal agency with applications for NFIRS data. NHTSA investigates possible safety problems with vehicles, including the incidence of fires. During the course of an investigation, NHTSA looks for trends in data, sometimes from multiple sources, regarding a particular type of vehicle. NFIRS provides a way of investigating the frequency of fires associated with certain models of vehicles.

Private Industry Uses of NFIRS

Private organizations have benefited from the information available in NFIRS as well as public organizations. Examples of private organizations that have used NFIRS data in recent years include the Association of Home Appliance Manufacturers, Mississippi Valley Gas Company, insurance companies, the Tobacco Institute, and BHP Research.

In 1996 NFIRS data were used to assist with the selection of potential pilot sites of a study conducted by the **Association of Home Appliance Manufacturers (AHAM)** on residential cooking fires. The AHAM study used data collected from ten cities, and NFIRS data were used to compare those cities to national data. Because the AHAM study specifically targeted cooking fires, investigators were able to collect information to supplement the data available through NFIRS. The supplemental data included such items as the proximity of the person to the fire; additional factors contributing to the fire; and the age, ethnicity, language spoken, and race of the person responsible for the fire.

Over the years **insurance companies** have used NFIRS data in a variety of ways. While use by this segment of the private market has been less than was anticipated when NFIRS was developed, insurance companies have used NFIRS data on losses per fire and characteristics of fire losses by fixed property use. In 1996, USFA received 15 requests for data from insurance companies.

Mississippi Valley Gas Company sponsored a study of the causes of water heater fires in 1990. Using NFIRS data, analysts were able to determine that the leading causes of fires related to gas water heaters were human-related, rather than mechanical. In particular the storage of flammables, especially gasoline, too close to the water heater accounted for almost one third of all fires related to gas water heaters. When all the categories of "misuse of material ignited" were considered, this proportion rose to over half of all fires. In response to the incidence of fires caused by gas water heater ignition of flammable vapors, the CPSC is working with industry to develop modified standards. If this effort falls short, CPSC will consider rulemaking that would likely result in the redesign of gas water heaters to make them safer.

The Tobacco Institute has sponsored analyses of the trends in fire deaths and injuries related to careless smoking and the types of materials first ignited, such as upholstered furniture and bedding. The Tobacco Institute has also used NFIRS data to help shape its fire prevention program and to evaluate grant requests relative to fire prevention priorities.

Over the past several years **BHP Research**, a subsidiary of BHP Steel located in Australia, has sponsored research of fire loss statistics relating to the following fixed property types: office buildings, parking garages, and apartment buildings. BHP was interested in assessing the number of fires that occurred in these types of structures because BHP Steel supplies steel products to the construction industry. One of the issues they were studying was the need for compartmentalization to stop the spread of fires in high rise and other types of buildings. While Australia has its own fire incident reporting system (modeled

after the U.S. system), the number of cases in the system is much smaller. On an annual basis, the Australian database adds about one-tenth the number of records as NFIRS. Because NFIRS is the largest fire data set in the world, BHP was interested in the larger sample of fires it could provide. The development of international fire information systems with which to compare NFIRS data will be a rich source of research in future years.

The Courts and Law Firms

NFIRS data are frequently used in both litigating court cases and in settling cases out of court. During 1996, USFA received numerous requests for data from law firms. If NFIRS data show that a product has a pattern of causing fires, this information can be used by plaintiffs to build a case against a manufacturer. Particularly helpful is that many years worth of data are available in NFIRS, so patterns of a product's involvement in fires over several years can be studied. In many cases, manufacturers will settle out of court to avoid having data on scores of different fires related to their product demonstrated in court. An attendant benefit is that these manufacturers may be convinced to revisit the safety of these products. In these ways, litigation can lead to safer products and better warning information on products.

In cases where NFIRS data do not reveal a pattern of fires related to a product, manufacturers can use the data to show that, relative to other possible fire causes, the likelihood of their product starting a fire was very low. In this way, NFIRS data can help protect the reputation of firms selling products that have not been involved in significant numbers of fires.

In certain industries, such as the appliance industry, many manufacturers use NFIRS data proactively, monitoring the involvement of their products in fires. This use of NFIRS is especially encouraging, because potential fires may be averted if problems with products are identified early and if products are recalled, redesigned, or both.

Nonprofit Fire-Related Organizations

A number of nonprofit fire- related organizations rely on statistics that are generated from NFIRS data. Among these groups are **the International Association of Fire Chiefs, the International Association of Fire Fighters,** and **the International Association of Black Professional Fire Fighters.** One particular concern to these groups is fire fighter casualties. If a fire fighter is killed or injured in the line of duty, a separate NFIRS form collects the specific information describing the incident. NFIRS data can then be used to generalize about the types of fires that present the greatest risk to firefighters and the types of injuries firefighters most often sustain. NFIRS data can also be used to investigate whether particular pieces of gear are associated with fire fighter injuries.

In 1993 the **National Association of State Fire Marshals (NASFM)** sponsored a study to investigate the effect of the State of California's fabric flammability standards for upholstered furniture on fire injuries and deaths. The California Fire Incident Reporting System (CFIRS) and NFIRS data on fire deaths and injuries were used to assess the impact that the California standards had over a ten year period. The results suggested that the standards were highly effective in reducing fire deaths and injuries associated with the ignition of upholstery, and these findings were used by NASFM to support their petition to the U. S. Consumer Product Safety Commission for national upholstery flammability standards.

The **National Fire Protection Association (NFPA)** is a nonprofit organization that makes wide use of NFIRS data. The data are used in conjunction with NFPA national estimates of the total U.S. fire problem to perform analyses for a variety of organizations, including fire departments, insurance companies, product manufacturers, educators, and research organizations.

NFPA also uses NFIRS data to conduct its own research studies, to inform its public education materials and marketing strategies, and to respond to data requests from various NFPA technical committees. NFIRS data are often used as the basis for articles that appear in NFPA's publication *Fire Journal.*

The Media

The media represent a uniquely powerful way to get fire and fire safety information to the public. Often reporters and researchers from newspapers, magazines, and television call USFA or other organizations that provide fire data to get information on a particular fire problem as background for a story. When possible, USFA analysts encourage reporters to broaden their stories to show how specific fire incidents relate to overall national or regional fire problems.

Within the past few years, NFIRS data have appeared in the following national publications and broadcast media:

USA Today
The Wall Street Journal
The New York Times
NBC-TV
Redbook
Ladies Home Journal
Fire Chief Magazine
World Book Encyclopedia

Recently the process of sharing USFA data with local media outlets has been formalized in an effort called the "Quick Response Unit" (QRU). USFA contracts with a public relations firm to follow news reports from all over the country. When a fatal or otherwise serious fire incident occurs in a community, the QRU faxes fire information based on NFIRS and other data sources to the local newspaper, which is encouraged to incorporate this information and relevant fire safety tips into its coverage of the event. Telephone follow-ups of these contacts are conducted on a daily basis. Each month, the QRU helps place articles in dozens of newspapers. For example in November, 1996 the QRU reported that fifty-four articles containing USFA data, the majority of it based on NFIRS data, were placed in newspapers across the country. Since the QRU was established in 1995, articles containing USFA data have reached over five million

readers. An example of one of these articles appears at the end of this report in Attachment A.

Academic and Research Institutions

NFIRS is a unique and invaluable resource for research in fire protection, and researchers in academic settings are among those using the data. In 1996, USFA received data requests from researchers affiliated with fifteen colleges and universities, as well as ad hoc requests from individual students. This type of research represents another way of getting NFIRS data out into communities and using it to identify fire problems unique to those communities.

There are several higher education institutions that have research centers specifically devoted to the study of fire issues. Among these are Worcester Polytechnic Institute, in Worcester, Massachusetts, the Fire Protection Engineering program at the University of Maryland, and the Texas A&M Fire Programs.

During 1996, at least one doctoral thesis was written that incorporated NFIRS data. Charles Jennings, a graduate student at Cornell University, wrote "Urban Residential Fires: An Empirical Analysis of Building Stock and Socioeconomic Characteristics for Memphis, Tennessee." This work represents the first major piece of research in recent years to analyze the interrelationships between building stock characteristics, socioeconomic characteristics of a population, and variations in the incidence of fire. Jennings combined NFIRS data with local tax assessor data and data from the Census of Population and Housing to investigate these relationships.

Public Fire Educators

Fire service public educators use the "big numbers" on specific fire problems to initiate local fire safety campaigns, such as how to prevent cooking fires or kerosene heater fires. The nature of an area's fire problem can vary significantly depending on a number of known factors, such as whether the area

is urban, suburban, or rural, the relative wealth of the community, the age and upkeep of dwelling units, and the proportion of dwelling units with central heating. NFIRS data help identify the types of fires that are most prevalent in an area and alert fire service members when new types of problems arise. Members of the fire service can pass on this information to the media and to the public to make them aware of potential fire problems.

Another use of NFIRS data is to justify funding of programs for dealing with community fire problems as they are identified. One community may have a need for a counseling program for juvenile fire setters, while another may need to target its resources to a public education campaign on the importance of installing and properly maintaining smoke detectors.

The Future of NFIRS

NFIRS, like any information system, constantly strives to improve the quantity and quality of the data it collects. In recent years, USFA in cooperation with the National Fire Information Council has been working on a new version of NFIRS. The new version is expected to make several improvements in the data collection process. First, the new NFIRS will benefit the public by providing much more detailed information about fires. This information can be used by local officials to better target problems they identify through their data.

Another way to improve NFIRS is to make it easier to use. Recognizing that firefighters are busy and have many responsibilities and duties, the newest version of NFIRS will facilitate the data collection process by making NFIRS forms less cumbersome to fill out. One way this is achieved is by reducing the number of coding categories for certain fields, such as fixed property use. Simplifying the data collection task should increase the proportion of fields filled out on each NFIRS form and should improve the quality of the data collected.

At the management level within the fire service, USFA has made two important changes to make NFIRS a better management tool, as well as a data

collection system. First, new modules have been incorporated into NFIRS to track the number and types of personnel and apparatus responding to calls. This data will be useful in justifying fire department budgets and making resource allocation and staffing decisions. Second, NFIRS will collect information on all incident types, not just fires. This will allow fire departments to track all of the calls they respond to within NFIRS, eliminating the need for more than one data management system.

Changes in the dissemination of NFIRS data will also make the system more relevant and responsive to the needs of local firefighters and fire departments. The National Fire Data Center (NFDC) site on the Internet will allow departments to electronically access their own NFIRS data, as well as a wide range of other information. It is hoped that providing this type of access to NFIRS data will increase the level of participation and commitment to NFIRS among local departments.

In addition to the technical changes pending in NFIRS, other changes in the system are desirable as well. For the future, greater attention and resources need to be devoted to recognizing the contribution made by firefighters who fill out NFIRS forms and cultivating their ongoing support. Recognizing this sometimes thankless duty as an activity appreciated by fire service leaders will impart "value" to the NFIRS data collection process and will translate into higher quality data. A variety of different strategies could be used to make firefighters aware of the importance of NFIRS, and local circumstances need to be considered when selecting among them. The Internet may provide a particularly useful medium for many communities. It would allow direct feedback from firefighters on the system's merits and shortcomings and a means of sharing NFIRS information with firefighters. This type of two-way communication may help identify other ways that NFIRS data can be made more relevant to firefighters at the station house level.

Another important aspect of the grassroots relationship between firefighters and NFIRS is training. If firefighter training programs are not already teaching recruits about the importance of NFIRS and how to work with the system, they need to be. Because the quality of information generated by NFIRS is only as good as the data entered at the fire house level, specific attention needs to be paid to teaching firefighters about NFIRS forms generally and the data items listed on the forms specifically. In the future, it is possible that training, benefits, and grants provided by USFA and the National Fire Academy will be more closely tied to NFIRS participation as an extra incentive for fire departments to participate.

Conclusion

As is evident in the wide variety of uses of NFIRS data cited in this report, NFIRS provides fire service professionals and many others with vital information on the nature and scope of the fire problem in the U.S. In the private sector, NFIRS data are used by manufacturers concerned about the safety of their products. Ongoing monitoring allows companies to identify problems with consumer products early. In the public sector, NFIRS data are used by government and other organizations responsible for monitoring the safety of consumer products including upholstered furniture, cigarettes, portable space heaters, kerosene heaters, chimneys, cigarette lighters, and smoke detectors. NFIRS data are used for setting budgets for fire service agencies, allocating priorities among fire protection issues, and evaluating the effectiveness of programs and initiatives. It has also helped identify emerging trends in fire protection issues faster than ever before by aggregating millions of records of fire data and allowing the comparison of data from one year to another.

As with any information system, NFIRS cannot be every thing to every person or organization. The data will not provide an answer to every question. Instead, NFIRS capably identifies areas that require additional research, whether

through detailed, in-depth investigation or other relevant research strategies. Regardless, over the past twenty years NFIRS has become an increasingly valuable information resource, and it is an important part of our national fire protection system. As such, it is vitally important for everyone involved with the system, at every level, to take his or her job seriously. Millions of dollars are targeted at problems identified through NFIRS, so the relevance of the system must be communicated to all those involved with it, especially firefighters at the local level. With this must go a message of gratitude from NFIRS users to firefighters, so that firefighters realize that their considerable NFIRS efforts are appreciated.

There is a long way to go toward making even better use of NFIRS. But we have a national fire data system that works admirably well, even given budget cutbacks and reductions in personnel at the national level and the normal challenges of maintaining an enormous information system. Everyone associated with NFIRS at the local, state, and national levels should feel proud of the important contribution they have made. NFIRS will continue to help guide fire protection in the U.S. thanks to their efforts.

ATTACHMENT A

Fight fire with facts

Recently, your community was struck by fire and someone died. The U.S. Fire Administration advises that 80 percent of all fire deaths and injuries are preventable.

More than 4,500 Americans die each year in fires and more than 30,000 were injured. Many of them might be alive today had they had the information they needed to survive when disaster struck.

Did you know that over seventy percent of all fire deaths occur in the home. And that most of those fires can easily be prevented. Deaths due to not being able to escape a fire are particularly avoidable. Following these simple tips can boost survival rates dramatically. For example, having a working smoke detector more than doubles one's chances of surviving a fire.

The following fire tips are offered by the fire administration.

❑ Escape planning

1. Make sure everyone in the family knows two routes to escape from bedrooms.
2. Buy a collapsible ladder for escape from upper story windows.
3. Keep the fire department's number by the phone.
4. Have a flashlight by your bed to help you see, and a whistle to alert your family.
5. Practice feeling your way out of the house with your eyes closed.
6. Never open doors that are hot to the touch.
7. Teach your family to stop, drop to the ground and roll if their clothes catch fire.
8. Designate a meeting place outside and take attendance.
9. Remember to escape first then call the fire department.
10. Install a smoke detector on every level of your home. Check the batteries every month and change them at least once a year.

❑ Smoke detectors

1. Place a smoke detector on each level of your home and in all outside bedrooms.
2. Check smoke detectors monthly by pushing the test button. If you can't reach the button easily, use a broom handle.
3. Change the batteries in your detector twice a year. perhaps when you change your clocks for Daylight Savings Time.
4. Teach children what the smoke detector sounds like and what to do-leave the building immediately by crawling under the smoke-when the hear it sound.
5. If cooking smoke sets off the detector, do not disable it. Turn on the range fan, open a window or wave a towel near the detector.
6. Do not remove the batteries to put in other appliances such as personal stereos or games.
7. Smoke detectors wear out over time. Replace yours if it is 10 years old or more.
8. Consider buying a lithium-battery powered smoke detector which will operate for 10 years and is sealed so it can't be tampered with or opened.

For more information on how to prevent fire deaths please contact your local fire chief or the U.S. Fire Administration at (800)238-3358. Tips are available on alternative heaters, appliance safety, arson, careless smoking, children and fire, cooking fires, escape planning, seniors and fire, smoke detectors, and winter fires.

(From a United States Fire Administration news release)

NOTE-TAKING GUIDE

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UNIT 0:
INTRODUCTION AND OVERVIEW

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NFIRS 5.0 ALL-INCIDENT REPORTING SYSTEM

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Slide 0-3

INTRODUCTIONS

- **Name, department?**
- **Responsibility related to fire incident reporting?**
- **How are you reporting? Paper, electronic? If electronic, what software are you using?**

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OBJECTIVES

The students will be able to:

- **Describe the benefits provided by the National Fire Incident Reporting System (NFIRS) 5.0.**
- **Explain how the need to collect fire data led to the organization and development of NFIRS.**
- **Identify the modules that are included in NFIRS 5.0.**
- **State the purpose of the NFIRS *Handbook* and *Quick Reference Guide* (QRG).**

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Activity 0.1
Introductions

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NATIONAL FIRE INFORMATION COUNCIL

www.nfic.org

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NATIONAL FIRE INFORMATION COUNCIL (cont'd)

Purpose: The purposes for which the National Fire Information Council (NFIC) was formed are

- **To encourage and perpetuate the use of NFIRS by States and local fire departments**
- **To provide a direct line of communication between its members and the U.S. Fire Administration (USFA)**

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NATIONAL FIRE INFORMATION COUNCIL (cont'd)

- **To assist NFIRS users in the development of NFIRS policies and procedures**
- **To provide collective input to USFA in the determination of system goals and priorities**

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DEVELOPMENT OF NFIRS

- ***America Burning,* 1972 (Commission on Fire Prevention and Control).**
- **USFA was created to evaluate the Nation's fire problem.**

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NEED FOR DATA

Fire service leaders need up-to-date, comprehensive data for decisionmaking.

- **Program effectiveness.**
- **Resource deployment.**
- **Codes and standards development.**
- **Need for new programs and services.**
- **Legislative initiatives.**
- **Identify training needs.**
- **Product safety.**

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WHY CHANGE?

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PARTICIPANTS IN NFIRS 5.0 DESIGN

- U.S. Fire Administration
- International Association of Fire Chiefs
- International Association of Fire Fighters
- Federal Wildland Fire Agencies
- National Association of State Fire Marshals
- Local Fire Departments
- National Fire Information Council
- National Fire Protection Association

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FACTORS CONSIDERED

1. Changing role of the fire service:

- **Multidiscipline agencies**
- **Complex incident types**
- **Greater reliance on information to manage limited resources**

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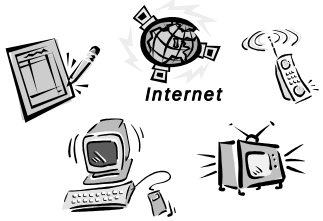
FACTORS CONSIDERED (cont'd)

2. Changing technology



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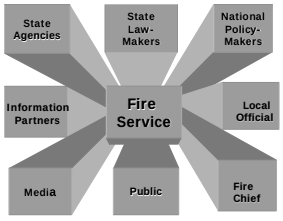
FACTORS CONSIDERED (cont'd)

3. Demand for information



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NFIRS 5.0 OBJECTIVES

- Develop an all-incident reporting standard
  - Open specification
- Address information needs of local, State, Federal agencies, and information partners
  - Visible, significant use at local level
  - Local/State option
- Focus on ease of use for local departments
  - Simplified and abbreviated reporting
- Fire department resource management tools
  - Track apparatus use and actions taken at the scene
  - Track personnel and activities performed on the scene
- Backwards compatible with NFIRS 4.1
  - Allows for phased implementation

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NFIRS 5.0 DEVELOPMENT STRATEGY

- Designed to meet the needs of the local fire department.
- Each data element was carefully scrutinized for inclusion in the system.
  - Is it COLLECTABLE by a typical firefighter at the scene?
  - Is it REPORTABLE in an information system?
  - Is it USABLE by the local fire department?

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Activity 0.2
Uses of Data

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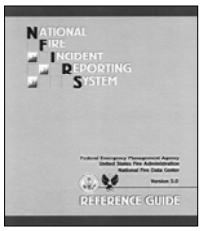
NFIRS 5.0

Key Features and Benefits



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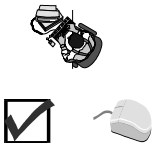
SIMPLICITY OF REPORTING

- **Single entry of data**
  - **– Accuracy**
  - **– Acceptance**
  - **– Participation**
- **Point and click**
- **Checkoff boxes**



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ABBREVIATED REPORTING

For a contained fire in a building, NFIRS 5.0 will allow firefighters to use the abbreviated report form.

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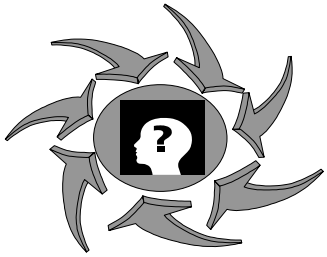
SIMPLIFIED CHOICES



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COMBINING DATA ELEMENTS

- **Property type**

Broad use category | On-site materials | Property type

- **Fire protection systems**
- **Equipment involved in starting the fire**

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MULTIPLE ACTIONS TAKEN

Can list multiple actions taken

- **Shows the productivity of the department**
- **A single scene can involve extinguishment, overhaul, rescue, and EMS**
- **Explain unusual circumstances**

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FLEXIBILITY

- **Room for expansion**
- **Special studies field**
- **National Code Plus One**

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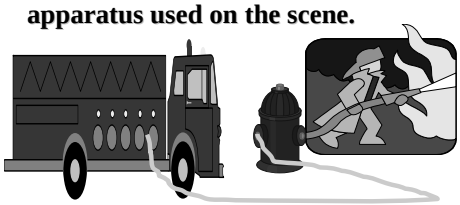
OTHER LOCAL OPTIONS

Capture resources, staff, and apparatus used on the scene.



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OTHER BENEFITS FOR USERS

- **Contributing factors**
  - **– Captures up to two factors**
  - **– Ability to capture relationships between injury and contributing factors**
- **Human factors**
  - **– Gangs, alcohol, drugs, cigarettes, etc.**
  - **– Improved collection of data on juvenile firesetters and the elderly**
- **Cause of ignition**
  - **– Intentional, unintentional, under investigation, or undetermined after investigation**
- **GIS compatible**

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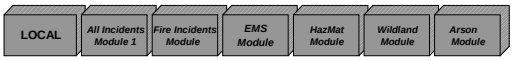
NFIRS 5.0 REQUIRED MODULES



Module use primarily driven by incident type....

REQ'D

- **Module 1** ***Basic (All Incidents)***
- **Module 2** ***Fire***
- **Module 3** ***Structure***
- **Module 4** ***Civilian Casualty***
- **Module 5** ***Fire Service Casualty***

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NFIRS 1--Basic Module

Is completed for every incident

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NFIRS 2--Fire Module

Required for all fires that extend beyond container

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NFIRS 3--Structure Fire Module

Is used for fires involving buildings

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NFIRS 4--Civilian Fire Casualty Module

Captures data regarding civilian casualties resulting from a fire

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NFIRS 5--Fire Service Casualty Module

Used to report injuries, deaths, or exposures to fire service personnel

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NFIRS 5.0 OPTIONAL MODULES

LOCAL | All Incidents Module 1 | Fire Incidents Module | EMS Module | HazMat Module | Wildland Module | Arson Module

Module use primarily driven by incident type....

REQ'D

- Module 1 *Basic*
- Module 2 *Fire*
- Module 3 *Structure*
- Module 4 *Civilian Casualty*
- Module 5 *Fire Service Casualty*
- Module 6 *EMS*
- Module 7 *HazMat*
- Module 8 *Wildland*
- Module 9 *Apparatus*
- Module 10 *Personnel*
- Module 11 *Arson and Juvenile Firesetter*

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NFIRS 6--EMS Module

Gathers data relating to provision of emergency medical care

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NFIRS 7--HazMat Module

Used to document REPORTABLE hazardous materials incidents

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NFIRS 8--Wildland Fire Module

Used to document reportable wildland fires

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NFIRS 9-- Apparatus/Resources Module

Used as a local option to identify the apparatus and personnel sent to an incident

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NFIRS 10--Personnel Module

Used as a local option to help track and manage personnel used on incidents

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NFIRS 11--Arson and Juvenile Firesetter Module

Used whenever the Cause of Ignition is coded as "Intentional" or "Under Investigation"

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NFIRS DATA QUALITY CONTROL

NFIRS Data Quality Control is a system for ensuring the application of proper standards for accurate and reliable data.

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NFIRS DATA QUALITY CONTROL (cont'd)

- **The incident report is a legal record.**
- **The incident report must reflect the event accurately.**
- **The incident report is complete; all required fields are completed.**

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NFIRS DATA QUALITY CONTROL (cont'd)

- **The incident report is a dynamic document.**
- **The incident data are used at local, State, and national levels.**

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NFIRS DATA QUALITY CONTROL (cont'd)

Responsibility belongs to:

- **Member making the report**
- **Officer in charge of the incident**
- **Local quality control person**
- **State NFIRS Program Manager**
- **USFA**

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NFIRS DATA QUALITY CONTROL (cont'd)

Available tools:

- **Field Incident Report**
- **NFIRS software**
- **Reports/Queries**

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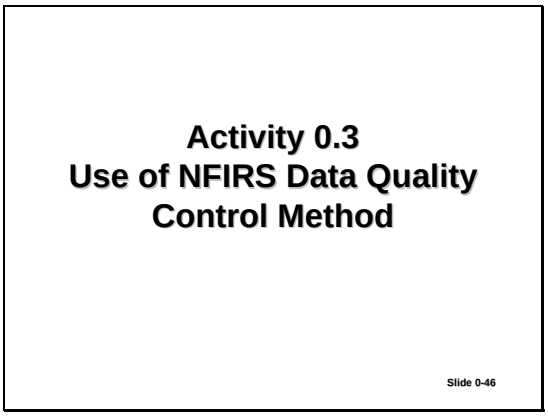

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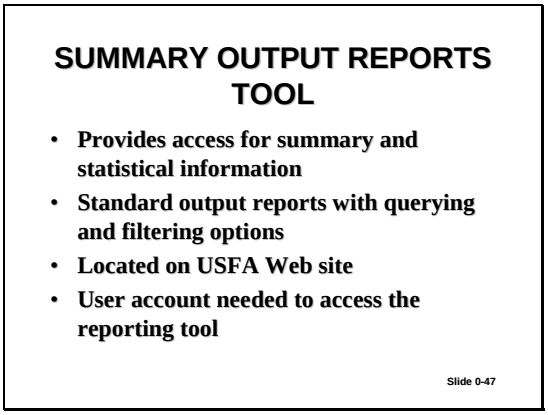

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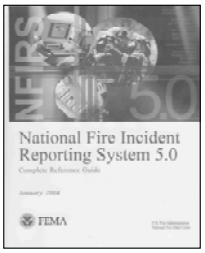
NFIRS *HANDBOOK*

A complete reference guide for the system which may be used when completing modules



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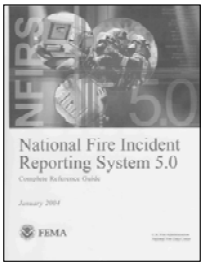
NFIRS *HANDBOOK* (cont'd)

The NFIRS *Handbook*:

- **Contains definitions, purpose, entry, and examples of elements**
- **Provides synonym lists and glossary of terms**



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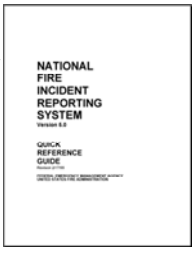
QUICK REFERENCE GUIDE

The QRG contains

- **Brief description of how data are to be entered**
- **Codes are listed**
  - **By field**
  - **Grouped by category**



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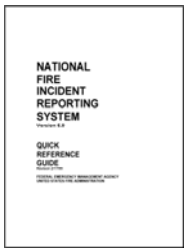
QUICK REFERENCE GUIDE
(cont'd)

- **Standard abbreviations**
  - **Street types**
  - **States, territories, Provinces**
  - **Countries**
- **Helpful tips**



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U.S. FIRE ADMINISTRATION

NATIONAL FIRE DATA CENTER

www.nfirs.fema.gov

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Activity 0.4
Structure of NFIRS 5.0

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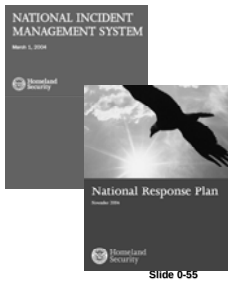
ADDITIONAL INFORMATION NIMS/NRP

- **First responder DHS training requirement**
- **Factsheet**
- **Video**



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Slide 0-56

QUESTIONS?

Slide 0-56

UNIT 1:
BASIC MODULE--NFIRS 1

OBJECTIVES

The students will be able to:

1. *Describe when the Basic Module is to be used.*

2. *Given the scenario of a hypothetical incident, demonstrate how to complete the Basic Module.*

3. *Identify other NFIRS modules that would need to be completed, based on information captured in the Basic Module.*

BASIC MODULE--NFIRS 1

The Basic Module is used for every incident. State agencies that are responsible for incident reporting will determine which optional modules (EMS, HazMat, Wildland, Apparatus, Arson) are required to be submitted.

If the State does not mandate the use of optional modules, the local fire department still may elect to use the module(s).

For certain incident types, NFIRS 1 is the only module that must be completed:

- confined fires, i.e., food on stove;
- small vegetation fires;
- outside rubbish fires;
- explosions;
- some other fire types; and
- non-fires.

This feature meets the need for an abbreviated method of incident reporting for those fires and other emergencies routinely encountered by the fire department.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure

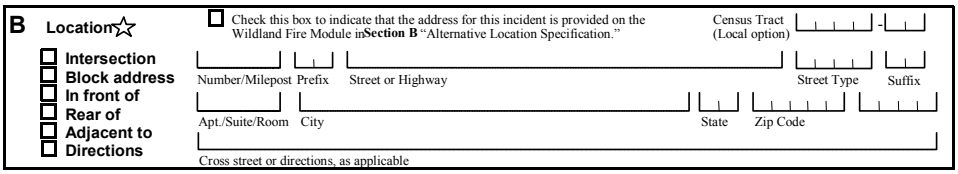
This section identifies the fire department and each incident and exposure. Some fields in this section must be completed. These fields uniquely identify the incident. They must be known to recall the incident from the computer program or to print a paper copy of the incident report.

The fire department identifier (FDID) is assigned by the State Program Manager. It must be entered for **all** incidents.

A unique incident number is assigned by the fire department for every incident to which the department is called. The incident number, used in conjunction with the incident date, uniquely identifies the incident.

An incident may have several fire exposures. The exposure number, also assigned by the fire department, indicates how many exposures there were for a single fire. The original fire is coded as 000 and each exposure is coded in progressive numeric order--i.e., 001, 002, etc. Each exposure requires a separate incident report.

Section B: Location



This section provides fields to identify the specific location and vicinity (in front of, rear of, next to) information pertaining to an incident. "Location" is a required section, so as much information as possible should be entered.

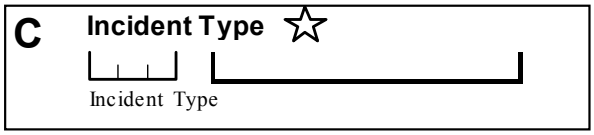
If the Wildland Module is used in lieu of the Fire Module, the "Alternate Location Specification" may be used instead.

This section is primarily narrative and should indicate the correct address of the incident location. Use road, street names, directional prefixes/suffixes, and other identifiable locations.

The Census Tract information can be filled in as a local option. Census tract numbers can provide valuable socioeconomic and other characteristics of the population where problems are occurring (by providing links to other databases, such as the U.S. Census Bureau databases).

The U.S. Census Bureau may be contacted for census tract coding information for your jurisdiction. It has 12 regional offices and the telephone number for an office in your area may be obtained through your phone company, or by accessing www.census.gov on the Internet.

Section C: Incident Type



Enter the type of incident (a three-digit code) that best identifies the types of incidents to which fire departments respond. The major categories are listed below and defined in the *Handbook*.

- 100 Series: Fires;
- 200 Series: Overpressure Ruptures (no combustion);
- 300 Series: Rescue and EMS;
- 400 Series: Hazardous Conditions (not a fire);
- 500 Series: Service Calls;
- 600 Series: Good Intent Calls;
- 700 Series: False Alarms and False Calls;
- 800 Series: Severe Weather and Natural Disasters; and
- 900 Series: Other Situations.

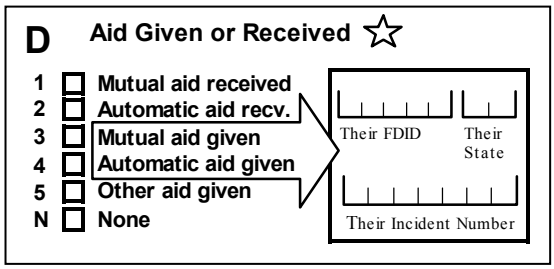
The code entered in this section also may determine which additional modules are to be completed. This is a required field so you must enter a code. The incident type entered does not have to be the same incident type as the one dispatched, but should reflect the situation found upon arrival at the incident scene.

If the incident scene involves combinations of potential incident types such as fire, EMS, and haz mat, the precedence should be to code the lowest-numbered incident type (100 Series: Fires first, then EMS, then haz mat)

Section D: Aid Given or Received

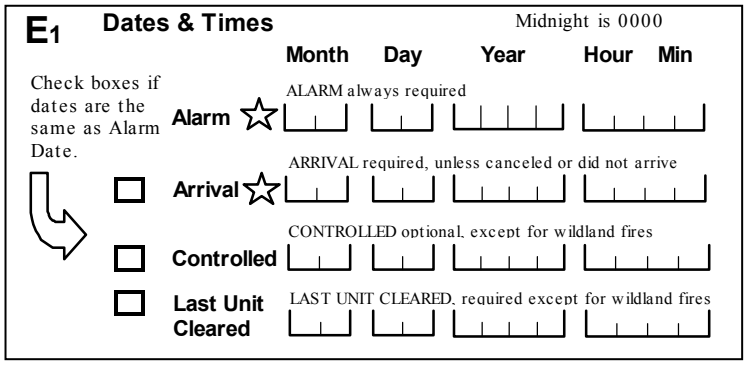
Aid Given or Received refers to the giving or receiving of assistance to or from another fire department to help resolve an incident. That assistance can be in the form of personnel or equipment from one or more fire departments. This section is intended to link data records between giving and receiving fire departments.

Options are provided to indicate whether mutual, automatic, or other aid was given or received, or if there was no aid. When mutual or automatic aid is given, there is space to capture the contributing department's FDID, their State, and their incident number.



The receiving department completes the entire Basic Module. A department giving mutual aid also should fill out a Basic Module indicating what they did at the incident and a Fire Service Casualty Module for any of their department members injured or killed.

Block E1: Dates & Times

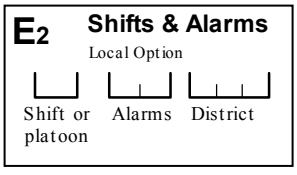


Block E1 permits the capture of date and time of alarm, arrival, control, and last unit cleared. Hours and minutes for all sections are recorded in 24-hour time--midnight is 0000.

The line for alarm date and time always must be completed. Note that the alarm date is always the same as the incident date in Block A.

Arrival information is required unless the unit was cancelled or the unit did not arrive. The controlled time is optional except for wildland fires. In contrast, the last-unit-cleared time is required except for wildland fires.

Block E2: Shifts & Alarms

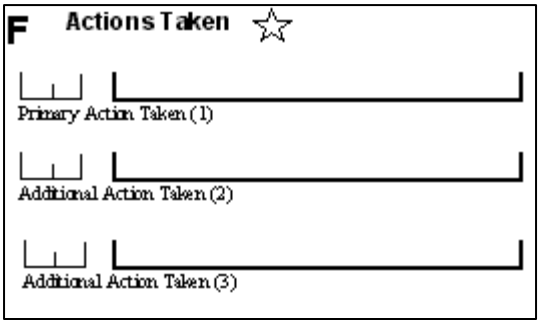


Block E2 allows shift or platoon, alarms, and district to be noted as a local option.

Block E3: Special Studies

Block E3 provides temporary data elements that can be used for collection of information that is of special interest. Special studies typically are required to capture information on emerging trends, problem areas, or a specific issue being studied. Special studies fields can be defined by the local fire department, the State, or the National Fire Data Center.

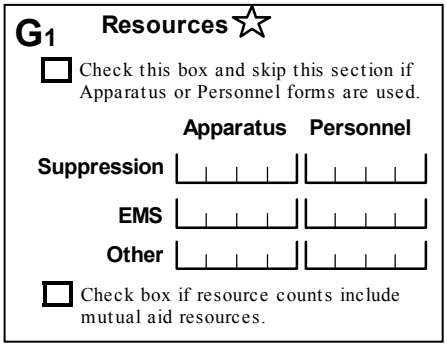
Section F: Actions Taken



Enter a two-digit code to explain the most significant actions taken by fire service personnel at the incident scene. The primary action taken in response to the incident should be entered. Lines also are provided to list two additional actions taken.

Together with incident type, these data help a fire department to document the variety of activities performed and resources required to respond to a range of emergencies.

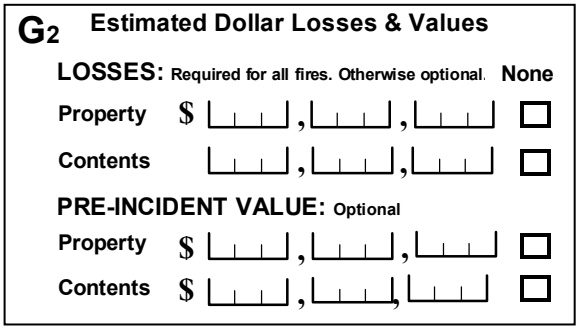
Block G1: Resources



Block G1 has lines for the total numbers of apparatus and personnel separated into suppression, EMS, and other categories. This section is required unless the Apparatus and Personnel forms are used. If that is the case, check the appropriate box.

Another box is available to indicate whether resource counts include mutual-aid-received resources.

Block G2: Estimated Dollar Losses & Values



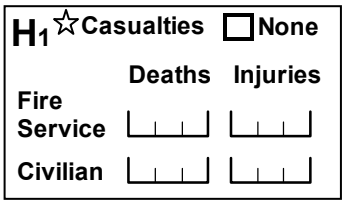
Property and content losses are recorded in block G2. Loss information must be completed for all fire loss when the loss is known. Entry of loss information is optional for other incident types.

Losses are considered to be a rough estimation of the total loss to the property and contents, in terms of the cost of replacement in like kind and quantity. This estimation of the fire loss includes contents damaged by fire, smoke, water, and overhaul. This does not include indirect loss, such as business interruption.

Pre-incident Value is an estimation of the replacement cost of the property and contents.

Enter the best estimates of dollar losses and pre-incident values (local option) that are practical to make or obtain. Monetary losses should be estimated as accurately as possible, though it is understood that the estimates may be rough approximations. One resource available to estimate structural losses and pre-incident value is the Building Valuation Data published by the International Code Council (ICC) at http://www.iccsafe.org/cs/techservices and found in Appendix A to this unit.

Block H1: Casualties

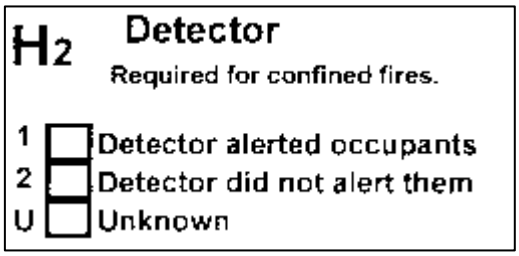


Casualties--injuries and deaths--are noted in block H1 for both fire service and civilian or non-fire-service emergency responders.

The civilian category includes citizens and non-fire-service emergency responders who are injured or killed because of a fire. Completion of a Civilian Fire Casualty Module is required for each casualty reported in this section. A Fire Service Casualty Module is required for each fire service casualty, regardless of incident type.

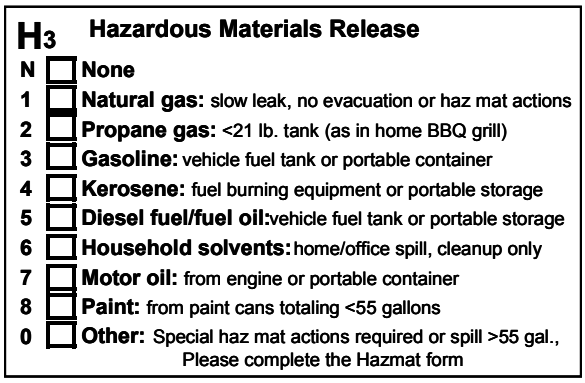
Block H2: Detector Performance

Detector performance--block H2 --is required for confined fires. Enter the code that indicates whether the detector alerted or did not alert occupants, or if it is unknown.



This field also may be used to indicate if the detector alerted occupants for carbon monoxide incidents.

Block H3: Hazardous Materials



H3 is filled out whenever hazardous materials are involved--regardless of the incident type.

If the box for "Other" is marked, the HazMat Module (NFIRS 7) also may be completed if the department's State or local jurisdiction chooses to use the HazMat Module.

Section I: Mixed Use Property

The Mixed-Use designation captures data on the overall use of the structure(s) on a property. If a structure has two or more property uses, or if a property has two or more structures with different property uses, then the Mixed-Use designation applies.

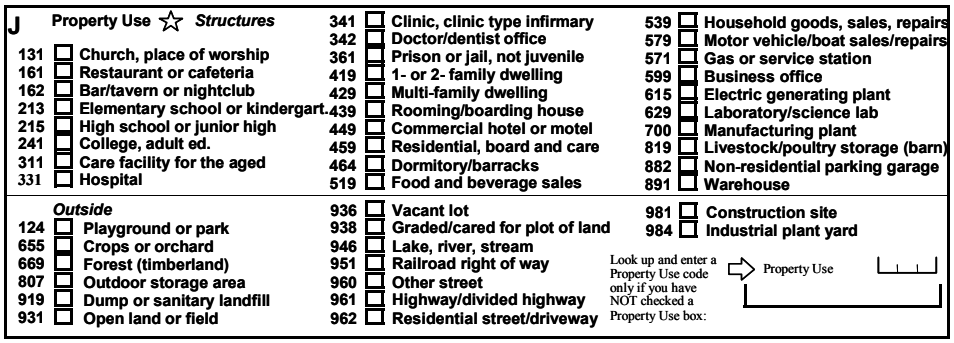
Note the following examples:

1. A bank in a grocery store would be a structure with two or more property uses--assembly use and business/office use. The mixed-use designation would be business use.

2. A warehouse on the property of an amusement theme park would qualify as two or more structures with different property uses.

3. A stand-alone service station would **not** be mixed-use even though it may have a driveway and parking area.

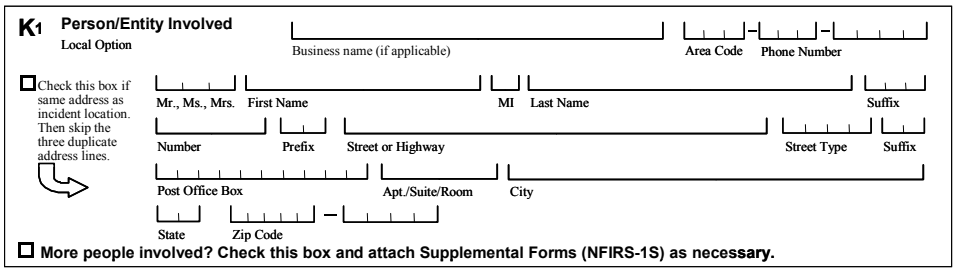
Section J: Property Use



This required field identifies the specific use of the property where the incident occurred and whether it is a structure or open piece of land. Several property use options are provided. The property use codes listed on the paper form are the most frequently used. In an automated system, all codes will be provided. For paper-based entry, a code would need to be looked up and used only if a box on the list is not appropriate.

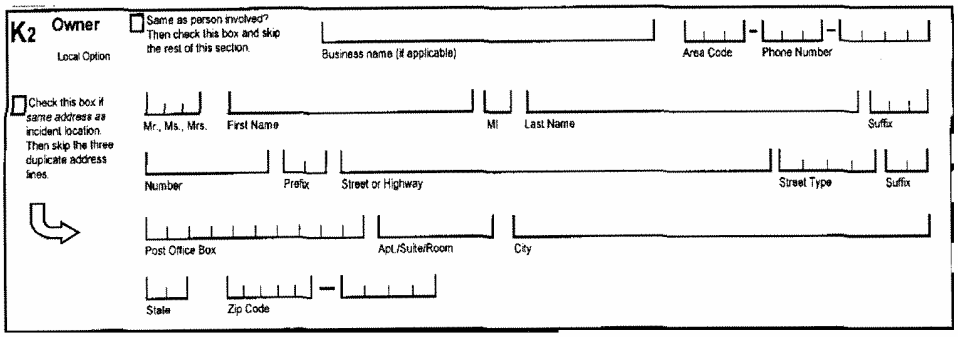
The box marked refers to the use of the particular property where the fire occurred, not the overall use of the "mixed property use" designation.

Section K: Person/Entity Involved and Owner



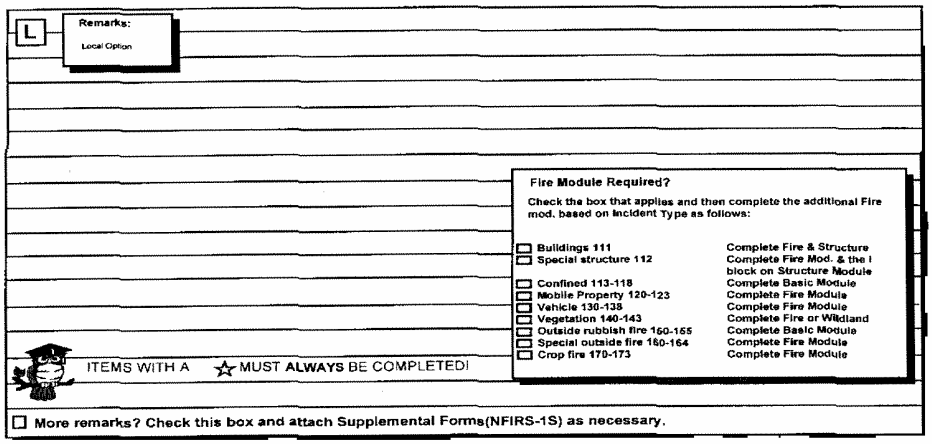
Block K1 can be completed as a local option to identify the person/entity involved. Lines are available for a business name (if applicable), a telephone number, and an individual's name and address.

If more than one person is involved, a box is marked on the paper form and supplemental forms are attached as necessary. If using an automated system, a new block may be opened for each additional name you are entering.



If the person/entity involved and the owner are the same, check the "Same as Person Involved Box" in block K2. If the owner is a different person, enter the business name (if applicable), telephone number, name, and address.

Section L: Remarks



A narrative description of the incident can be entered in block L at the option of the local department. If more remarks are necessary, supplemental forms can be completed and attached as necessary (paper forms only).

On the paper form, a box within Section L can be used to determine whether a Fire Module is required. In an automated system, this is done automatically and is transparent to the user.

The Narrative Report

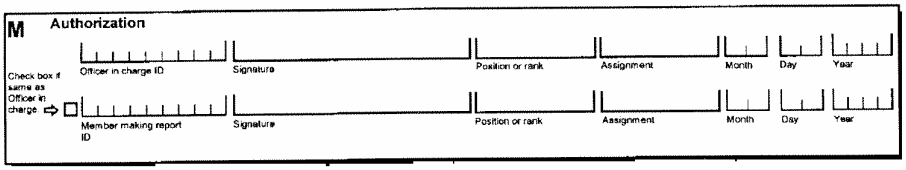
The incident report serves as an official legal record of an incident and must describe accurately the incident and the actions taken to mitigate it. While many of these facts may be collected in uniform coded fields, some information can be presented best in a detailed narrative. Information that should be included in the narrative includes

- Observations and actions taken; list them in logical order (usually chronological). Paint a complete picture of the scene; summarize the incident.

- Describe the scene conditions and the condition of the premises when you left.

- Describe property damage and remaining hazards.

Section M: Authorization



This section includes spaces for the identification number, name, position or rank, and assignment for both the officer in charge and the member making the report. The date of completion also should be indicated.

If the officer is the person filling out the report, check the box provided.

Activity 1.1

Completion of Basic Module

Purpose

To complete the Basic Module correctly and identify other modules that would need to be completed based on the information provided.

Directions

1. Work with your small group to complete the Basic Module in a way that accurately describes the scenario assigned by your instructor. Note: FDID, dates, and times will be provided by your instructor, as necessary.

2. Allow 15 minutes to complete the module and be prepared to give a brief presentation to the rest of the class.

Scenarios

A. Fire in metal trash can.

Department FDID 34567 is called at 0918 on October 3, 2004, to a reported fire at the Shady Rest Motel, 755 Lancaster Street, in Cheese City, Wisconsin 12345. Upon arrival at 0921, Engine 1 finds that the fire is confined to a metal trash can--no flame damage occurs outside of the trash can. Engine 1's officer sends two firefighters to control the fire and ventilate the area. The fire is controlled at 0925 and the last unit clears the scene at 0945. There was no structure or content damage. Mr. Robert Lee, the building owner, was in the office section of the motel when he heard a smoke alarm sounding. There was no mutual aid received nor were there any injuries. There were no exposures. The shift on duty was C platoon with a one-alarm assignment. The District was #112. The incident is reported as #4000876.

B. Food on stove.

On Saturday, September 25, 2004, at 1513 hours, a call is received for a fire at 112 Main St., Accomac, Virginia 23301. Engine 12, Engine 23, Ladder 2, and Battalion 2 respond with total personnel of 11. They arrive at 1518 to find smoke coming from the rear of the house. Crew from E-23 enters the house to find that the smoke is coming from the kitchen area because of unattended cooking. The incident is confined to the pot on the stove. E-23 removes the pot from the stove

with Ladder 2 establishing ventilation. The fire did not extend beyond the pot. Damage is confined to the pot and the food, with minimal smoke damage in the kitchen area. The homeowner, Ms. Sally Jones, reports that she was alerted to the fire by the smoke detector. The value of the property is set at $185,000 and contents at $47,000. There is no loss because of the fire. The incident was controlled at 1530 and the units cleared at 1620. There was no mutual aid received nor were there any injuries. The incident number assigned was 0000181. There were no exposures. The shift on duty was C platoon with a one-alarm assignment. The District was #112.

Notes on Activity Debriefing:

SUMMARY

The Basic Module (NFIRS 1) is used for every incident. State agencies that are responsible for incident reporting will determine which optional modules must be submitted.

For many incident types, the Basic Module is the only report that must be completed. It meets the need for an abbreviated form of incident reporting.

APPENDIX

BUILDING VALUATION DATA

The International Code Council is pleased to provide the following Building Valuation Data (BVD) for its members. As indicated in the May, 2003 issue of the *Building Safety Journal,* ICC will now publish one data sheet in an effort to move toward complete consolidation and provide the most efficient set of information for jurisdictions to use. As such, the former Legacy Building Valuation Data tables will no longer be published. ICC strongly recommends that all jurisdictions and other interested parties, who utilized the former Legacy Building Valuation Data tables, actively evaluate and assess the impact of the new BVD table before utilizing it in their current code enforcement related activities.

The BVD table provides two main functions. In addition to providing the "average" construction costs per sq. ft., the data can be used in determining permit fees for a jurisdiction as well as calculating the anticipated plan review fee charges by the ICC plan review service. Permit fee schedules are addressed in Section 108.2 of the 2003 *International Building Code* whereas Section 108.3 addresses building permit valuations. The permit fees can be established by using the BVD table and a Permit Fee Multiplier, which is based on the total construction value within the jurisdiction for the past year. The Square Foot Construction Cost table presents factors that reflect relative value of one construction classification/occupancy group to another so that more expensive construction is assessed greater permit fees than less expensive construction.

ICC has developed this data to aid jurisdictions in determining permit fees. It is important to note that while this BVD table does determine an estimated value of a building (i.e., Gross Area x Square Foot Construction Cost), this data is only intended to be used for determining permit fees for a jurisdiction. This data table is not intended to be used as an estimating guide since the data only reflects average costs and is not representative of specific construction.

This degree of precision is sufficient for the intended purpose which is to establish permit fees so as to fund code compliance activities. This BVD table provides jurisdictions with a simplified way to determine the estimated value of a building that does not rely on the permit applicant to determine the cost of construction. Therefore, the bidding process for a particular job and other associated factors do not affect the value of a building for determining the permit fee. Whether a specific project is bid at a cost above or below the computed value of construction does not affect the permit fee since the cost of related code enforcement activities is not directly affected by the bid process and results.

Building Valuation

The following building valuation data in Table 2 represents average valuations for most buildings. In conjunction with Section 108.3, this data is offered as an aid for the building official to determine if the permit valuation is underestimated. When using this data, again it should be noted that these are "average" costs based on typical construction methods for each occupancy group and type of construction. The average costs include structural, electrical, plumbing, mechanical, interior finish, normal site preparation, architectural and design fees, overhead and multiprofit.

PERMIT FEE MULTIPLIER

Determine the Permit Fee Multiplier:

1. Based on historical records, determine the total annual construction value which has occurred within the jurisdiction for the past year.
2. Determine the percentage (%) of the building department budget expected to be provided by building permit revenue.

$$\text{Permit Fee Multiplier} = \frac{\text{Bldg. Dept. Budget x (\%)}}{\text{Total Annual Construction Value}}$$

Example

The building department operates on a $300,000 budget, and it expects to cover 75 percent of that from building permit fees. The total annual construction value which occurred within the jurisdiction in the previous year is $30,000,000.

$$\text{Permit Fee Multiplier} = \frac{\$300{,}000 \times 75\%}{\$30{,}000{,}000} = 0.0075$$

PERMIT FEE

The permit fee is determined using the building gross area, the Square Foot Construction Cost and the Permit Fee Multiplier to compute permit fees.

Permit Fee = Gross Area x Square Foot Construction Cost x Permit Fee Multiplier

Example

Type of Construction: IIB
Area: 2nd story = 8,000 sq. ft.
Height: 2 stories
1st story = 8,000 sq. ft.
Permit Fee Multiplier = 0.0075
Use Group: B

1. Gross area:
   Business = 2 stories x 8,000 sq. ft. = 16,000 sq. ft.

2. Square Foot Construction Cost (see Table 1):
   B/IIB = $106.56/ft^2

3. Permit Fee:
   Business = 16,000 ft^2 x $106.56/ft^2 x 0.0075 = $12,787

Important points to know

Tables 1 and 2 do not, in most cases, apply to additions, alterations or repairs to existing buildings. Because the scope of alterations or repairs to an existing building varies so greatly, the Square Foot Construction Cost does not reflect accurate values for that purpose. However, the Square Foot Construction Cost can be used to determine the cost of an addition which is basically a stand-alone building which

happens to be attached to an existing building. In the case of an addition, the only alterations to the existing building would involve the attachment of the addition to the existing building and the opening between the addition and the existing building.

- For purposes of establishing the Permit Fee Multiplier, the estimated total annual construction value for a given time period (year) is the sum of each building's value (Gross Area x Square Foot Construction Cost) for that time period (e.g., 1 year).

- The Square Foot Construction Cost does not include the price of the land on which the building is built. The Square Foot Construction Cost takes into account everything from site and foundation work to the roof structure and coverings but does not include the price of the land. The cost of the land does not affect the cost of related code enforcement activities and is not included in Square Foot Construction Cost.

ICC PLAN REVIEW FEE SCHEDULE

The Plan Review fee is based on the estimated construction value calculated in accordance with the Square Foot Construction Costs in Table 1 (gross area x Square Foot Construction Cost). For buildings with an estimated construction value up to $3,000,000, the Building Plan Review fee is 0.0013 of the estimated value ($250 minimum). For buildings with an estimated construction value over $3,000,000 up to $6,000,000, the fee is $3,900 plus 0.0006 of the estimated value over $3,000,000. For buildings over $6,000,000, the fee is $5,400 plus 0.0004 of the evaluation over $6,000,000.

Special consideration may be given in computing Plan Review fees for buildings such as large warehouses or indoor recreational facilities due to their plan review simplicity. Such considerations may also be given to buildings with repetitive floor plans such as high-rise buildings.

Structural reviews in areas of high seismic or wind risk will have an additional surcharge. Please contact your local ICC regional office for more details.

The plan review fee for Mechanical, Plumbing and Electrical Reviews is computed at 25 percent of the Building Plan Review fee for each discipline ($250 minimum).

The plan review fee for Accessibility and Energy Reviews is also computed at 25 percent of the Building Plan Review fee for each discipline ($250 minimum).

The Sprinkler Review fee is simply based on the number of sprinkler heads: 1-100, $275; 101-200, $325; 201-300, $350; 301-400, $375; 401-500, $425; over 500, $500 plus $0.33 per sprinkler over 500. For hydraulically-designed systems, multiply the fee by two.

SAMPLE PLAN REVIEW CALCULATION

Type of Construction: IIIB
Height: 3 stories, 35 feet Use Group: B
Area/Floor: 15,000 sq. ft.

Solution:

1. Gross square footage: 3 stories x 15,000 square feet = 45,000 sq. ft.

2. Compute estimated construction value:
   Square Foot Construction Costs = $94.65/sq. ft.

   Estimated Construction Value: 45,000 sq. ft. x $94.65/$ft^2$ = $4,259,250

3. Compute Plan Review fee:
   Building: $3,000,000 x 0.0013 = $3,900
   $4,259,250 - $3,000,000 = $1,259,250
   $1,259,250 x .0005 = $630
   Total Building Review Fee = $4,530

   Mechanical, Plumbing, Electrical:
   (.25)($4,530) = $1,132 each

   Accessibility and Energy: (.25)($4,530) = $1,132 each

Questions concerning the service should be directed to:
Christopher R. Reeves, P.E.
Manager, Plan Review Services
708-799-2300 Extension 309

NOTE-TAKING GUIDE

Slide 1-1

UNIT 1:
BASIC MODULE--NFIRS 1

Slide 1-1

Slide 1-2

NFIRS 1--BASIC MODULE

Slide 1-2

Slide 1-3

OBJECTIVES

The students will be able to:

- **Describe when the Basic Module is to be used.**
- **Given the scenario of a hypothetical incident, demonstrate how to complete the Basic Module.**
- **Identify other NFIRS modules that would need to be completed, based on information captured in the Basic Module.**

Slide 1-3

Slide 1-4

NFIRS 1--BASIC MODULE (cont'd)

- **Used for all incidents to collect common information.**
- **State legislation determines which optional modules must be submitted to the State.**
- **Entries on Basic Module may require that other modules be completed.**

Slide 1-4

Slide 1-5

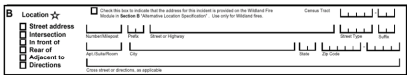
A--HEADER INFORMATION ☆

- **Contains the information that uniquely identifies the incident (FDID, State, incident date, number, and exposure).**
- **Incidents may have several exposure fires.**
  - **Requires a separate report.**
  - **Uses the same incident number and consecutive exposure numbers.**
- **Identifies if reporting a change, deletion, or no activity.**

Slide 1-5

Slide 1-6

B--LOCATION ☆

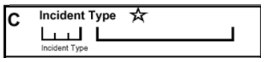


- **Identifies specific location of the incident**
- **Indicates whether Wildland Module is used and "Alternate Location Specification" is provided**
- **Accepts GIS-Compatible format**

Slide 1-6

Slide 1-7

C--INCIDENT TYPE ☆



Identifies the single most significant situation found.

- **Includes codes for all types of incidents handled by fire service agencies.**
- **Fire takes precedence over all other incident types (if multiple situations exist at the same incident).**

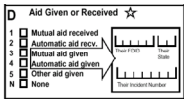
Slide 1-7

Slide 1-8

D--AID GIVEN OR RECEIVED ☆

Options:

- **Mutual aid given or received**
- **Automatic aid given or received**
- **Other aid given**
- **None**

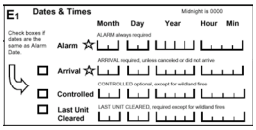


Collects receiving department's FDID and incident #

Slide 1-8

Slide 1-9

E1--DATES & TIMES



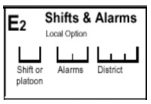
Collects date and time of alarm ☆, arrival, controlled, and last unit cleared.

- **Automated systems capture time in seconds.**
- **0000 hours = midnight.**

Slide 1-9

Slide 1-10

E2--SHIFT & ALARMS

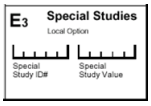


Identifies the onduty shift or platoon; the number of alarms transmitted for the incident; and the district number

Slide 1-10

Slide 1-11

E3--SPECIAL STUDIES

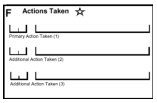


- **Local Option**
- **Study ID #**
- **Special Study Value**

Slide 1-11

Slide 1-12

F--ACTIONS TAKEN ☆



- **Records the three most significant actions performed on the incident scene by responding personnel.**
- **Codes include entire spectrum of fire service activities, including EMS and Hazardous Materials.**

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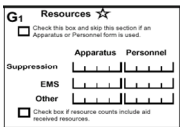
Slide 1-13

G1--RESOURCES ☆

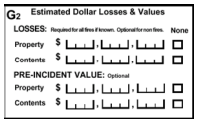


- **Collects the total number of personnel and apparatus, by type, that responded to the incident.**
- **This information will be calculated automatically if using the apparatus or personnel module in an automated system.**

Slide 1-13

Slide 1-14

G2--ESTIMATED DOLLAR LOSSES & VALUES



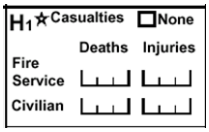
- **Provides an estimate of the total dollar loss and the pre-incident value of the property and contents**
- **Complete for all fires**
- **Using replacement value is recommended**

Slide 1-14

Slide 1-15

H1--CASUALTIES

Identifies the number of deaths or injuries as a result of the incident (or during management of the incident)



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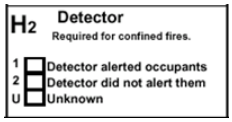
Slide 1-16

H2--DETECTOR

- **Identifies the presence of detectors at the time of the incident and whether they alerted the occupants**



- **Required for confined fires**

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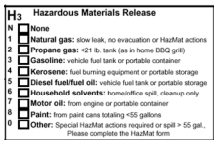
Slide 1-17

H3--HAZARDOUS MATERIALS RELEASE



- **Documents the occurrence of a hazardous materials release at the incident.**
- **The HazMat Module (NFIRS 7) should be completed if "other" is checked.**

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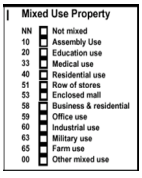
Slide 1-18

I--MIXED USE PROPERTY



Captures data on the overall use of the structures on a property if:

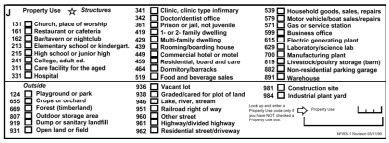
- **A structure has TWO OR MORE property uses**
- **A property has two or more structures with different uses**

Slide 1-18

Slide 1-19

J--PROPERTY USE ☆

The specific use of the property where the incident occurred

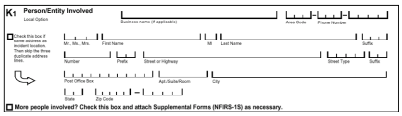


Slide 1-19

Slide 1-20

K1--PERSON/ENTITY INVOLVED

Collects the name and contact information for persons or entities (businesses, companies) involved in the incident or related to the property



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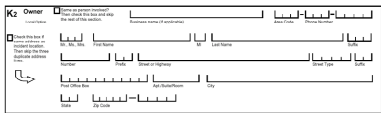
Slide 1-21

K2--OWNER

Collects the name and contact information for the person or entity that owns the property where the incident occurred



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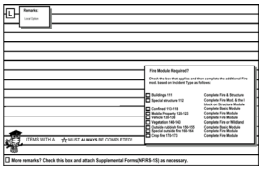
L--REMARKS



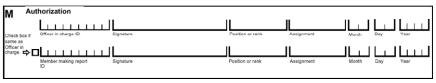
- **Provides for a narrative description of the incident**
- **Includes an instructional box intended to provide guidance for completing the report**

Slide 1-22

Slide 1-23

M--AUTHORIZATION

Collects the name and identifying information for the Officer in Charge of the incident and the member completing the incident report



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NFIRS 1S SUPPLEMENTAL FORM

Slide 1-24

Slide 1-25

SUPPLEMENTAL FORM

- **For use only with paper reporting systems**
- **Provides for extra remarks, additional persons/entities involved, special studies**

Slide 1-25

Slide 1-26

K--HEADER

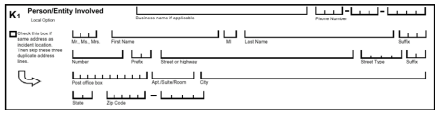
- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

Slide 1-26

Slide 1-27

K1 to K5--PERSON/ENTITY INVOLVED

Collects additional name and contact information for persons or entities (businesses, companies) involved in the incident or related to the property

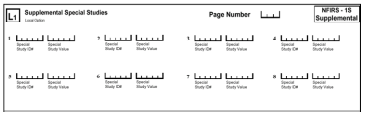


Slide 1-27

Slide 1-28

L1--SUPPLEMENTAL SPECIAL STUDIES

Temporary data elements that can be used for collection of information that is of special interest for a defined period



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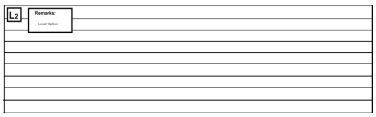
Slide 1-29

L2--ADDITIONAL REMARKS

Provides an additional area for comments concerning the incident when you run out of room on the Basic Module



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Slide 1-30

Activity 1.1
Completion of Basic Module

Slide 1-30

Slide 1-31

SUMMARY

- **The Basic Module (NFIRS 1) is used for every incident.**
- **State legislation determines which optional modules must be submitted to the State.**
- **The Basic Module is the only report that must be completed for many incident types.**

Slide 1-31

Slide 1-32

QUESTIONS?

Slide 1-32

UNIT 2:
FIRE MODULE--NFIRS 2

OBJECTIVES

The students will be able to:

1. *Describe when the Fire Module is to be used.*

2. *Given scenarios of hypothetical incidents, demonstrate how to complete various sections of the Fire Module.*

FIRE MODULE--NFIRS 2

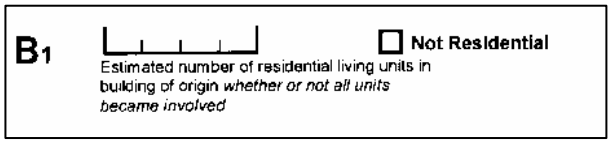
The Fire Module is used for any fire that extends beyond a non-combustible container. It would be applicable for a vehicle fire, building fire, or vegetation (grass) fire. As an option, the Wildland Fire Module can be used for vegetation and other outside fires.

The Structure Fire Module is completed in conjunction with the Fire Module, as noted on the Remarks of the Basic Module of the inset labeled "Fire Module Required." The Fire Module provides details about the property involved and the Structure Fire Module furnishes information regarding the buildings involved in the fire, how the fire started, and detection and suppression equipment present.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure

This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of an incident. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required.

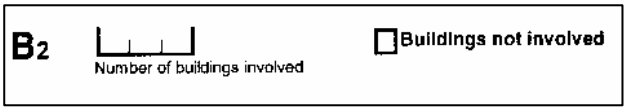
Section B: Property Details



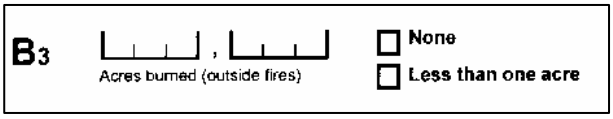
Block B1 captures data regarding the number of residential living units in the building of origin. If it is not a residential unit, the box can be marked to indicate so. If it is residential, the total number of units must be entered without regard to how many became involved in the incident.

- For apartment buildings, condominiums, townhouses, and row-houses, enter the number of separately owned or rented units.
- For hotels, motels, and the like, enter the number of lodging units.

The direct entry of the number of living units will allow for improved data analysis. Previously a range of apartment units would be available as choices. If the building or fire code developers modify the requirements for apartments, such as requiring sprinklers in buildings with fewer dwelling units than the current standard, then analysis can be conducted easily in the future.



The total number of buildings involved in the fire is entered in block B2. Each exposure is numbered sequentially starting at 001. For outside fires that also consume buildings, exposure reports should be completed. If no buildings were involved, there is a box to be marked.



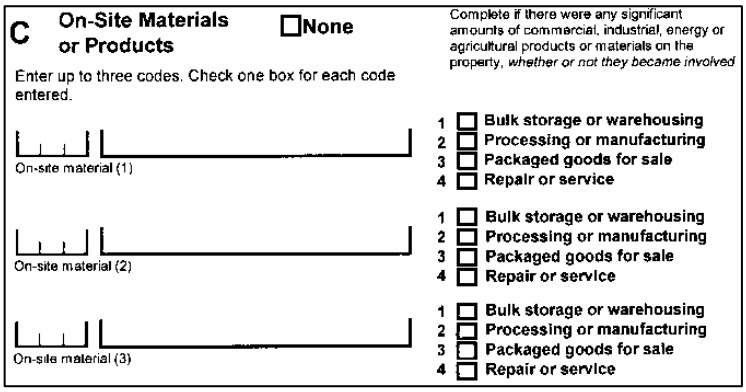
B3 has space to record the number of acres burned in an outside fire. Two boxes are available--one to indicate "None" and the other to specify "Less than one acre." This should be the best estimate that can be made by the person completing the module. For large outside fires, the department may choose to use the NFIRS 8:Wildland Fire Module instead of NFIRS 2: Fire Module.

Section C: On-Site Materials or Products

If no significant amounts of commercial, industrial, agricultural, or energy products or materials are stored on this property, the box "None" can be marked. If any of these products or materials were present, whether or not they became involved, the rest of the section should be completed.

Enter a code, found in the NFIRS *Handbook* or *Quick Reference Guide* (QRG), for any significant amount of material stored, processed, sold, or used for providing services at the property involved. Lines are provided to identify information regarding up to three materials. Information is entered whether or not the material was involved in the fire. Materials can be coded that might not ordinarily be found at a location.

Example: A "crack house" could be coded as a Residential Property Use (419) and the On-site Material could be coded as 545: Illegal Drugs.



For each On-site Material entry made, one of the four boxes to the right should be marked to indicate whether the material is stored, processed, sold, or used for services provided at the property. Mark "Processing or Manufacturing" if the material is both stored and processed at this site. A box must be marked whenever an On-Site Material entry is made.

Activity 2.1

Property Use and On-Site Materials

Purpose

To determine property use and on-site materials and complete the appropriate sections of NFIRS 5.0.

Directions

Determine property use and on-site materials or products and the appropriate completion of each of these sections for the following:

1. A fire occurs in a hardware store.

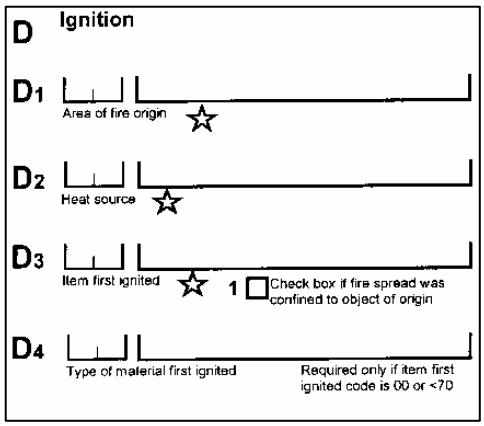
2. A fire occurs in a dry-cleaning facility.

3. A fire occurs in an automobile service station.

Notes on Activity Debriefing

Section D: Ignition

Separate blocks of this section will allow you to capture information regarding the area of fire origin, heat source, item first ignited, and type of material first ignited.



In Block D1, a code found in the NFIRS *Handbook* or in the QRG is entered to indicate where the fire started. The code list is organized into three kinds of areas--structural, vehicle, and outside. This section must be completed for all fires.

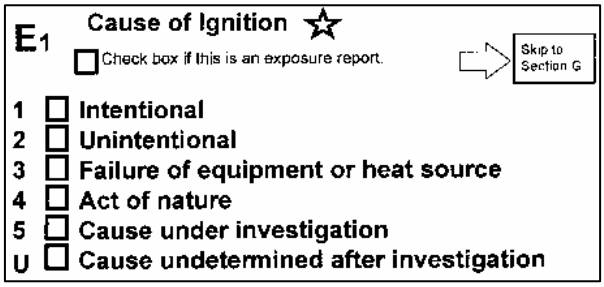
Blocks D2 and D3 furnish lines to enter codes for the "Heat Source" and the "Item First Ignited." Both entries are required.

The box is marked to indicate that the fire spread beyond the object of origin. An unmarked box means that the fire was confined to the object of origin.

The last block, Section D4, collects information regarding the type of material first ignited; it should be completed whenever the item first ignited is 00 or less than 70.

For "Items First Ignited" with a code greater than 70, responding to this section is redundant because the "Item" and "Type" would be the same--for example, item = grass; type = grass.

Section E: Cause of Ignition

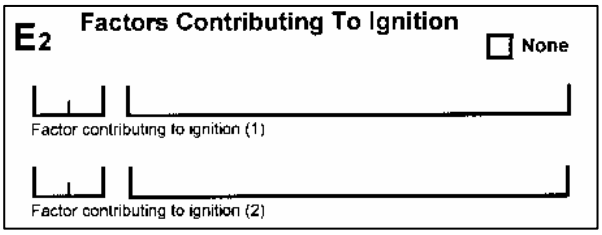


Sections D and E, in combination, can serve to offer a better explanation of how and why the fire started.

The first option in block E1 is to mark a box that indicates that this particular report is an exposure report. If that is the case, the officer must skip the rest of Sections E and all of Section F and continue completing the report in Section G.

Marking other boxes in E1 will allow the officer to indicate more clearly the cause of ignition. In previous versions of NFIRS, users were forced to decide between incendiary and suspicious; the measurement of arson fires added those two codes together. Now, fire officers will be able to indicate that a fire was intentionally set without stating that a crime was committed.

Also, fire incidents can be reported as under investigation. If no cause is determined later, the cause can be changed to "undetermined after investigation." This will allow a manager to better track whether an investigator has updated the incident report with the actual cause or whether the cause remains undetermined.



The "Factors Contributing to Ignition" are recorded in block E2 using the appropriate codes from the NFIRS *Handbook* or QRG. Up to two factors can be noted, or a box can be marked to indicate that none was involved.

Activity 2.2

Factors Contributing to Ignition

Purpose

To identify factors contributing to ignition.

Directions

Determine the factors contributing to ignition for the following incidents:

1. A car backfires and starts a fire in the engine compartment.

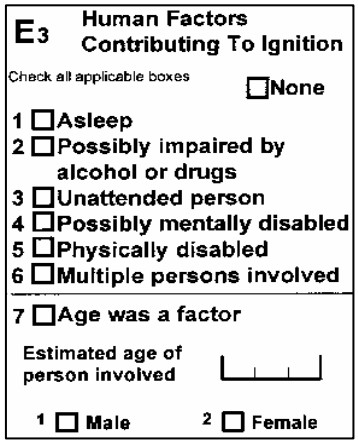
2. An electric heater is covered with a blanket that ignites when the heater turns on.

3. Fireworks land on a shake roof, igniting the roof.

Notes on Activity Debriefing

Block E3 offers a number of options to record human factors that contribute to the ignition of a fire. All of the applicable boxes in this section may be marked.

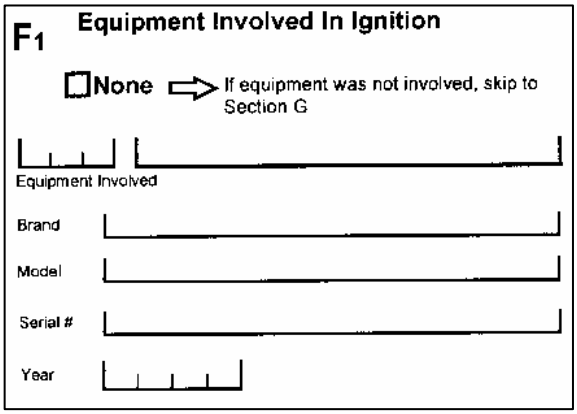
The last part of E3 can be useful in tracking juvenile firesetter trends and the effect of fire on the elderly. This field provides direct entry of the estimated age of the person involved, whether the person is male or female, and a box to mark when there is evidence that age was a factor in ignition.



Section F: Equipment Involved in Ignition

The complexity of this data element has been reduced from the previous version of NFIRS by eliminating compound codes.

The section starts with a box ("None") which can be used to indicate whether equipment was involved in the ignition. If the box is marked to show that none was involved, the rest of the section can be skipped. If the box is not marked, the rest of the section should be completed.

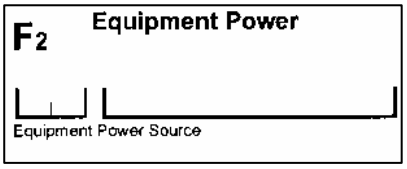


Block F1 has a line to enter a code description that best identifies the equipment involved in the ignition. To find the correct code quickly, select a subsection from the following choices:

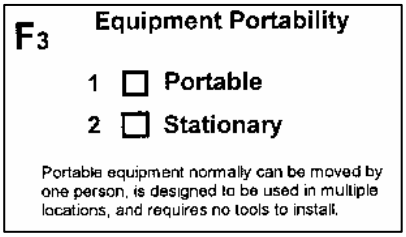
- Heating, Ventilating, & Air Conditioning;
- Electrical Distribution, Lighting, & Power Transfer;
- Shop Tools & Industrial Equipment;
- Commercial & Medical Equipment;
- Garden Tools & Agricultural Equipment;
- Kitchen & Cooking Equipment;
- Electronic Equipment; and
- Personal & Household Equipment: Other.

The brand name, model name/number, serial number, and model year of the equipment involved, if known, are to be entered on the lines provided.

Block F2 asks for a code that describes the power source of the equipment involved with the fire ignition. Gas, liquid fuels, solid fuels, and electrical would be examples. The power source combined with other factors in the ignition sequence can help identify the cause of the fire.



Block F3 contains boxes to indicate whether the equipment involved in the ignition is portable or stationary. Portable equipment has three characteristics. It can be moved by one person, is designed to be used in multiple locations, and requires no tools to install. Equipment portability is another factor that can play a part in determining fire cause.



Section G: Fire Suppression Factors

Lines are provided to collect information regarding conditions or factors that affected the fire suppression effort or fire management decisions. These factors, which are critical to proper analysis of incident data, previously had to be documented in the narrative report.

If no conditions or factors had an effect, the "None" box can be marked. Enter a code for up to three factors or conditions to document those that constituted a significant suppression problem at the incident or might be a fire prevention problem in the future.

Activity 2.3

Fire Suppression Factors

Purpose

To identify fire suppression factors.

Directions

Note how you would complete Section G for these incidents:

1. A fire in a grocery store resulted in collapse of a lightweight metal truss roof. One reason for the fire spread was the delay in arrival of the fire department. A huge traffic jam prevented fire companies from reaching the scene quickly.

2. A warehouse fire with high-piled combustible storage--30 feet to the top of the storage--overwhelms the sprinkler system. Workers attempt to extinguish the fire before it is reported. The building is destroyed.

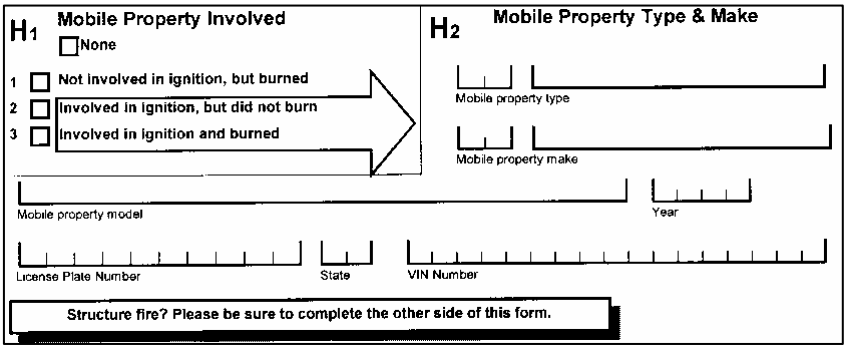
Notes on Activity Debriefing

Section H: Mobile Property Involved In Ignition

Block H1 has four boxes that can be marked to indicate the involvement of mobile property in the ignition. The "None" box is marked if no such property is involved. When mobile property is involved, one of the numbered boxes must be marked to clarify the involvement.

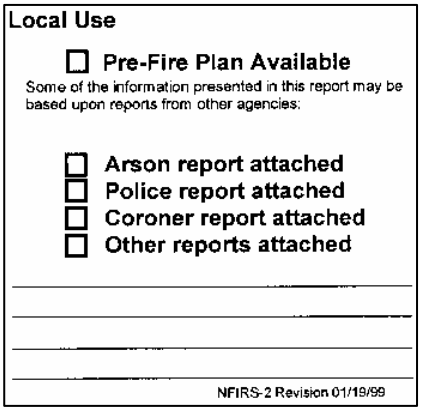
Example: If the wheel rim on a car with a flat sends a spark that starts a grass fire but the car does not burn, box number 2 would be marked.

Codes are used in block H2 to best identify the type of mobile property involved. The codes are organized into categories for Ground, Rail, Air, and Water vehicles. **When mobile property is used as a fixed building instead of transportation, check the "Not Involved" box and skip the rest of Section H. The Structure Fire Module would be completed in this situation.**



A code also is used to indicate the make of the mobile property. The code list includes most vehicles. If the make you need is not found, use code 00 and enter the name of make on the line provided. If known, the model name and four-digit year of the mobile property involved should be entered next.

If the mobile property has a license plate, the plate number and the two-letter abbreviation of the State, Province, or Territory of the plate (or registration) should be entered on the appropriate lines. Refer to the Abbreviations Section of the NFIRS *Handbook* or QRG for a list of State, Province, and Territory abbreviations. Enter the Vehicle Identification Number (VIN) as indicated.



The last block of Section H can be used as a local option. In the first area, a box exists to indicate whether a prefire plan is available for the address of the incident. Typically, a plan of attack or a prefire plan is developed by firefighters before a fire occurs at significant structures, and the plan is referenced during the emergency.

Some of the information presented in a report may be based on reports from other agencies. Boxes can be marked in this area to indicate which other agency reports are attached to the incident report.

SUMMARY

The Fire Module is used for any fire that extends beyond a non-combustible container. It would be applicable for a vehicle fire, building fire, or vegetation (grass) fire unless the Wildland Fire Module is used.

The Fire Module can be used in conjunction with the Structure Fire Module, when appropriate, to provide a more complete picture of what happened. Completing the Fire Module collects details about the property involved. Details provided in the Structure Fire Module make clear the buildings involved in the fire, how the fire started, and detection and suppression equipment present.

NOTE-TAKING GUIDE

Slide 2-1

UNIT 2:
FIRE MODULE--NFIRS 2

Slide 2-1

Slide 2-2

NFIRS 2--FIRE MODULE

Slide 2-2

Slide 2-3

OBJECTIVES

The students will be able to:

- **Describe when the Fire Module is to be used.**
- **Given scenarios of hypothetical incidents, demonstrate how to complete various sections of the Fire Module.**

Slide 2-3

Slide 2-4

NFIRS 2--FIRE MODULE

- **Used for all fires that extend beyond a noncombustible container.**
- **Exception: Wildland Fire Module may be used instead of this module for vegetation or other outside fires.**

Slide 2-4

Slide 2-5

A--HEADER

- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

Slide 2-5

Slide 2-6

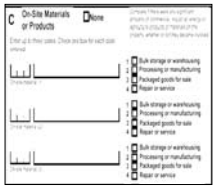
B--PROPERTY DETAILS

- **B_1 identifies the number of residential units in the building of origin.**
- **B_2 identifies the number of buildings involved.**
- **B_3 identifies the number of acres burned.**
  - **May use Wildland Fire Module instead.**

Slide 2-6

Slide 2-7

C--ON-SITE MATERIALS



- **Identifies any significant amounts of commercial, industrial, energy, or agricultural products on the property**
- **Use whether or not materials were involved in fire**

Slide 2-7

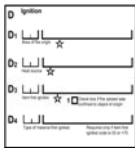
Slide 2-8

Activity 2.1
Property Use and On-Site Materials

Slide 2-8

Slide 2-9

D--IGNITION



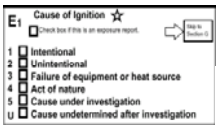
Codes are found in the ***Handbook*** and QRG.

- **D1 identifies the area where the fire started.** ✯
- **D2 identifies the heat source.** ✯
- **D3 identifies the item ignited.** ✯
- **D4 identifies the composition of the item ignited.**

Slide 2-9

Slide 2-10

E1--CAUSE OF IGNITION ☆

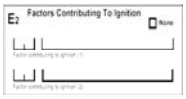


- **Identifies the general causal factor that resulted in a heat source igniting a combustible material**
- **Identifies if fire was an exposure fire**

Slide 2-10

Slide 2-11

E2-- FACTORS CONTRIBUTING TO IGNITION



- **Identifies the contributing factors that allowed the heat source and combustible material to combine to ignite the fire**
- **Can identify up to two factors**

Slide 2-11

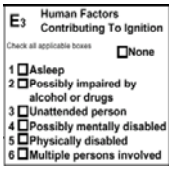
Slide 2-12

Activity 2.2
Factors Contributing to Ignition

Slide 2-12

Slide 2-13

E3--HUMAN FACTORS

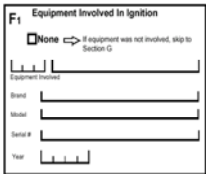


- **Identifies mental or physical states or conditions that contributed to the ignition of the fire**
- **Identifies the age and sex of the person involved in the ignition**

Slide 2-13

Slide 2-14

F1--EQUIPMENT INVOLVED



- **Identifies the equipment that provided the primary heat source to cause ignition (if the equipment malfunctioned or was used improperly).**
- **Codes are found in the *Handbook* or QRG.**

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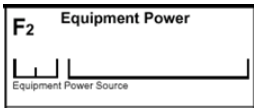
Slide 2-15

F2--EQUIPMENT POWER



- **Identifies the power source of the equipment involved in the ignition of the fire.**
- **Codes can be found in the *Handbook* and QRG.**

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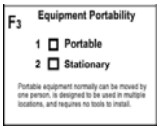
Slide 2-16

F3--EQUIPMENT PORTABILITY

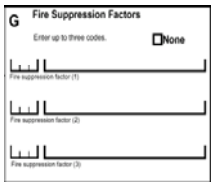


- **Describes the equipment involved in ignition as either stationary or portable.**
- **Portable equipment normally can be moved by one person, and is designed to be used in multiple locations.**

Slide 2-16

Slide 2-17

G--FIRE SUPPRESSION FACTORS



Identifies conditions or factors that affected fire suppression or management decisions

Slide 2-17

Slide 2-18

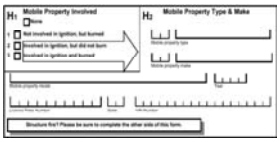
Activity 2.3
Fire Suppression Factors

Slide 2-18

Slide 2-19

H--MOBILE PROPERTY INFORMATION

- **H_1 identifies if mobile property was involved in the ignition and whether or not it burned.**
- **H_2 identifies the mobile property that was involved in the ignition.**



Slide 2-19

Slide 2-20

SUMMARY

- **The Fire Module (NFIRS 2) is used for any fire that extends beyond a non-combustible container.**
  - **–Vehicle fire, building fire.**
  - **–Vegetation (grass) fire, unless Wildland Fire Module is used.**
- **In conjunction with the Structure Fire Module, provides a more complete picture of the incident.**

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Slide 2-21

QUESTIONS?

Slide 2-21

UNIT 3:
STRUCTURE FIRE MODULE--NFIRS 3

OBJECTIVES

The students will be able to:

1. *Describe when the Structure Fire Module is to be used.*

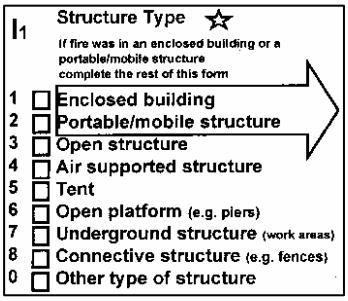
2. *Given scenarios of hypothetical incidents, demonstrate how to complete various sections of the Structure Fire Module.*

STRUCTURE FIRE MODULE--NFIRS 3

The Structure Fire Module is used in conjunction with the Fire Module for structure fires that extend beyond a noncombustible container (Incident Types 111 and 120's). The Structure Fire Module, through its available data fields, provides a means for an extensive description of larger fire incidents. More information can be captured by using this module.

Section I: Structure Type, Building Status, Building Height, and Main Floor Size

Block I1 captures information regarding the type of structure. If the fire is in an enclosed building, the entire module is completed. It would not be completed if the fire involves one of the following or other structures similar to them:

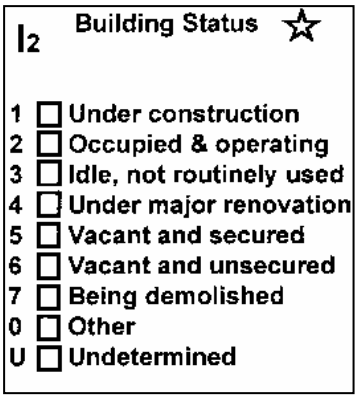


- a connective structure such as a fence or pipeline;
- an open structure such as a bridge;
- an air-supported structure;
- a tent;
- an open platform such as a pier; and/or
- an underground structure such as a flood tunnel.

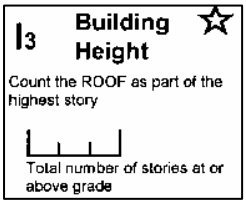
The Structure Fire Module would be completed for an enclosed building, which would be a rail tunnel, subway system, highway tunnel, or similar structures.

It also would be completed for portable/mobile structures such as:

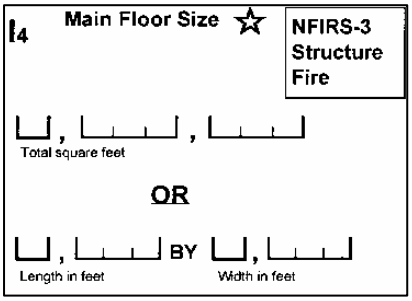
- job site trailers; or
- portable offices or similar structures.



The status of the building is collected in Block I2.



There are two lines in I3 to indicate the building height. One records the total number of stories at or above grade. The other captures the total number of stories below grade. Both must be completed without regard to how many floors were involved in the fire.



Block I4 offers two options for indicating the main floor size: (1) the number of square feet on the structure's main floor, or (2) the structure's length and width in feet.

Activity 3.1

Structure Type, Building Status

Purpose

To determine structure type, building status, building height, and main floor size.

Directions

How would structure data be entered for the scenarios that follow? Will the rest of the Structure Fire Module need to be completed (yes or no)?

Scenario 1

A large fire occurs on the fifth floor of an eight-story, vacant and secured warehouse. Several of the 200-foot by 100-foot floors are damaged, but no damage is reported in the basement.

Scenario 2

The local subway system has reported a fire in the boarding area of the subway station on the second of three operating levels. Each boarding area is 100 feet by 50 feet.

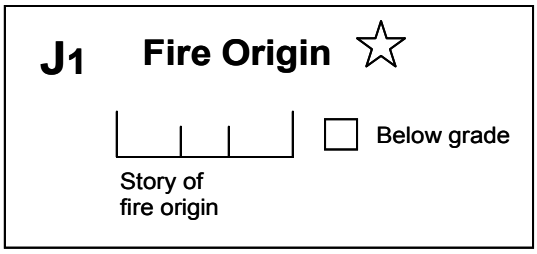
Scenario 3

A fire is reported in a tent that was erected for a revival meeting. It measured 200 x 300 feet with a seating capacity of 500.

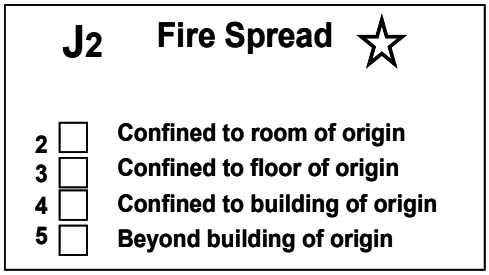
Notes on Activity Debriefing

Section J: Fire Origin, Fire Spread, and the Number of Stories Damaged by Flame

Data entered in Section J will help describe where the fire started, whether or not it spread, and the percent of the structure that was damaged by flame.



In Block J1 the story of fire origin is entered. This story is assumed to be at or above grade **unless** the "Below grade" box is marked. The ground story is counted as Story 1. In the case of most residential basements, you would enter 1 for the "Story of Origin" and then check the box to indicate it was below grade.

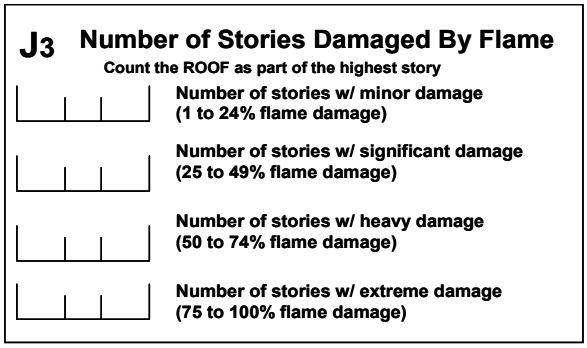


One of the series of boxes in J2 is marked to indicate the fire spread. **See form Block J2**

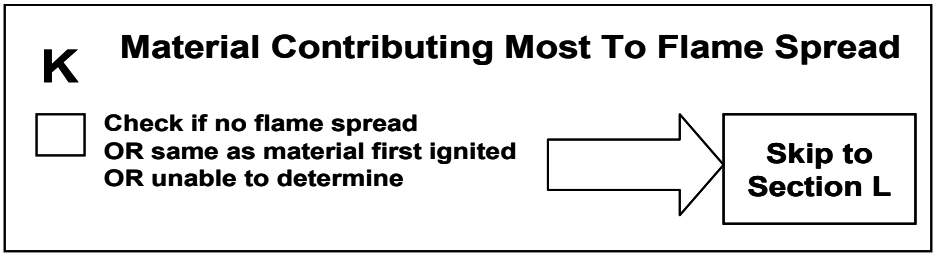
Choose the **highest** number that applies.

The intent of data entered in J3 is to describe the seriousness of the fire by indicating the extent of flame damage. Floors suffering only smoke or water damage are not counted. If there is flame damage to the roof, the roof is not counted as a separate story.

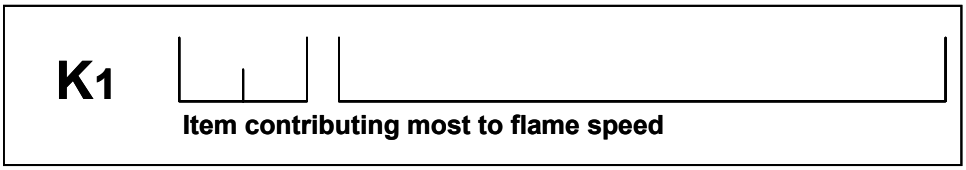
For each percent range of flame damage specified, enter the number of stories that meet the description. i.e., two stories have 24 percent, three stories have 50 percent. If an entry is not made for any of the classifications in J3, it will be assumed there was zero flame damage.



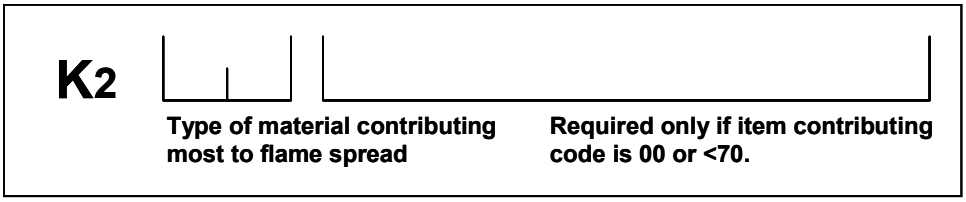
Section K: Material Contributing Most to Flame Spread



Section K is completed only if the flame spread beyond the object of origin **and** the material contributing most to the flame spread is **different** from the Item First Ignited (recorded in D3 of NFIRS 2--Fire Module). If one of these conditions is false, the box is marked and the rest of the section is skipped.



The "Item contributing most to flame spread" and the appropriate code is entered in K1. This is true if flame spread beyond the object of origin and the item contributing most to flame spread is different from the Item First Ignited. The codes used in this section are the same as those for the Item First Ignited and are found in the NFIRS *Handbook* or *Quick Reference Guide* (QRG).



K2 captures the "Type of material contributing most to flame spread." This block is completed whenever the code for type-of-material is 00 or less than 70. It is not necessary to supply this information when the type of material code is 70 or greater as it would be redundant (example: item would be grass and material would be grass).

Activity 3.2

Story of Origin, Fire Spread

Purpose

To determine story of origin, fire spread, number of stories damaged, item contributing to flame spread, and type of material.

Directions

How should Sections J and K be completed for the following scenarios?

Scenario 1

A fire in an eight-story apartment house started on the fifth floor and spread upward. There was heavy damage to the fifth and sixth floors, significant damage to the seventh floor, and minor damage to the eighth floor and roof. The fire is believed to have started on a countertop and spread via the cabinets.

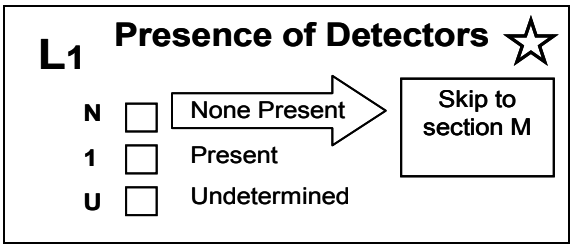
Scenario 2

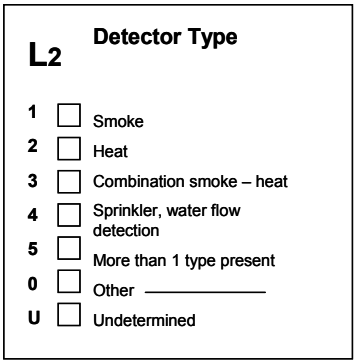
Children playing with matches started a fire in newspapers that were stacked in the basement of a ranch-style home. Fire spread across the drapes and up the stairway to the family room. There was significant damage in the basement and minor damage on the first floor.

Notes on Activity Debriefing

Section L: Presence of Detectors, Detector Type, Detector Power Supply, Detector Operation, Detector Effectiveness, Detector Failure Reason

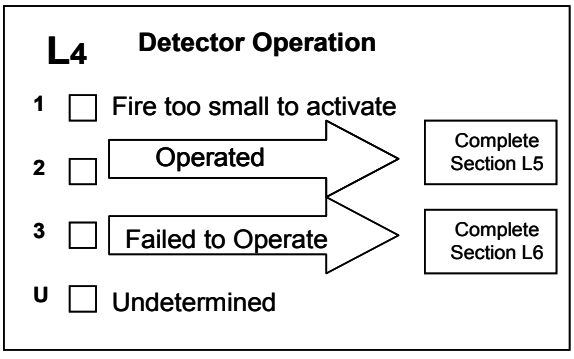
If no detector was present, or within the designated range of the detector, mark the box in Block L1 and skip the rest of Section L. The rest of Section L is completed if a detector was present.





Block L2 "Detector Type" identifies the detector present in the area of fire origin. If more that one type of detector is present, mark the appropriate box.

L3 describes the power supply for that detector and L4 describes the operation (or lack of operation) of the detector. Mark one entry for each data field.



If a fire occurs that was not intended to be discovered by the detection system installed, mark "fire too small to activate" in L4 and skip the rest of Section L. Also, skip the rest of Section L if "undetermined" is selected for Detector Operation.

If the "failed to operate" box is marked under L4, skip L5 and complete L6.

L5 Detector Effectiveness
Required if detector operated.

- 1 ☐ Alerted occupants, occupants responded
- 2 ☐ Occupants failed to respond
- 3 ☐ There were no occupants
- 4 ☐ Failed to alert occupants
- U ☐ Undetermined

When "Operated" box is marked in L4, then a box in L5 is marked to indicate the detector's effectiveness Block L6 can be skipped.

The codes provided in Section L6 allow identification of the reason why the detector failed to operate or did not operate properly.

L6 Detector Failure Reason

- 1 ☐ Power failure, shutoff or disconnect
- 2 ☐ Improper installation or placement
- 3 ☐ Defective
- 4 ☐ Lack of maintenance, includes cleaning
- 5 ☐ Battery missing or disconnected
- 6 ☐ Battery discharged or dead
- 0 ☐ Other _____
- U ☐ Undetermined

Section M: Presence of Automatic Extinguishment System, Type of Automatic Extinguishment System, Automatic Extinguishment System Operation, Number of Sprinkler Heads Operating, Automatic Extinguishment System Failure Reason

M1 Presence of Automatic Extinguishing System ☆

- N ☐ None Present
- 1 ☐ Present → Complete rest of Section M

One box in block M1 must be marked for all building fires. If no automatic extinguishing system was present, the "None" box is marked and the rest of Section M is skipped. Other parts of Section M are completed if an extinguishing system was present.

Several automatic extinguishing system types are listed in block M2. The box for the correct type should be marked if the fire was within the designed range of the system.

M2 Type of Automatic Extinguishment System
Required if fire was within designed range of AES

- 1 ☐ Wet pipe sprinkler
- 2 ☐ Dry pipe sprinkler
- 3 ☐ Other sprinkler system
- 4 ☐ Dry chemical system
- 5 ☐ Foam system
- 6 ☐ Halogen type system
- 7 ☐ Carbon dioxide (Co_2) system
- O ☐ Other special hazard system
- U ☐ Undetermined

If the fire was within the designed range of the automatic extinguishing system, mark a box in M3 to describe its operation. **See form NFIRS 3-Structure Fire Module Block M2.**

M3 Automatic Extinguishment System Operation

Required if fire was within designed range

- 1 ☐ **Operated & effective (go to M4)**
- 2 ☐ **Operated & not effective (M4)**
- 3 ☐ **Fire too small to activate**
- 4 ☐ **Failed to operate (go to M5)**
- 0 ☐ **Other**
- U ☐ **Undetermined**

M4 Number of Sprinkler Heads Operating

Required if system operated

Number of sprinkler heads operating

When either "operated" box is marked in M3, provide the number of sprinkler heads which operated (regardless of effectiveness) in M4.

A box in M5 is marked if you indicated in M3 that the system "Operated and not effective" or "Failed to operate."

M5 Automatic Extinguishment System Failure Reason

Required if system failed

- 1 ☐ System shut off
- 2 ☐ Not enough agent discharged
- 3 ☐ Agent discharged but did not reach fire
- 4 ☐ Wrong type of system
- 5 ☐ Fire not in area protected
- 6 ☐ System components damaged
- 7 ☐ Lack of maintenance
- 8 ☐ Manual intervention
- O ☐ Other _____
- U ☐ Undetermined

NFIRS-3 Revision 01/19/99

Activity 3.3

Detection and Suppression Equipment

Purpose

To determine presence of detection and/or suppression equipment, type of equipment, operation of equipment, and reason for equipment failure.

Directions

How should Sections L and M be completed for the following scenarios?

Scenario 1

A smoke detector in the hallway alerted the fourth floor hotel guests of a possible problem. The detector was hardwired with a battery backup. Room occupants carefully opened hallway doors and could see light smoke in the hall. They quickly exited down the stairway and out the front of the building. There was a wet-pipe sprinkler system installed throughout the building, but it did not activate. The fire in room 410 was too small to open any sprinkler heads.

Scenario 2

The warehouse was protected by a wet-pipe sprinkler system with water-flow detection alarms. Detectors were hardwired through the main power box on the building's north end. Power to the warehouse was knocked out by an electrical storm moving through the area. Because it was after eight in the evening, no one was in the building to notice that the power was off or that a fire had started near where welders had been working on storage racks. Fortunately, two sprinkler heads activated and quickly extinguished the fire.

Notes on Activity Debriefing

SUMMARY

The Structure Fire Module is used in conjunction with the Fire Module to gather extensive information about larger fire incidents that involve buildings. This module discussed strategies important to completing this module correctly. Given the information presented, you should know how to document an incident that uses this module.

NOTE-TAKING GUIDE

Slide 3-1

UNIT 3:
STRUCTURE FIRE MODULE--NFIRS 3

Slide 3-1

Slide 3-2

NFIRS 3--STRUCTURE FIRE MODULE

Slide 3-2

Slide 3-3

OBJECTIVES

The students will be able to:

- **Describe when the Structure Fire Module is to be used.**
- **Given scenarios of hypothetical incidents, demonstrate how to complete various sections of the Structure Fire Module.**

Slide 3-3

Slide 3-4

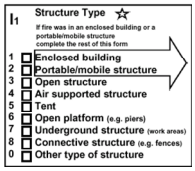
STRUCTURE FIRE MODULE

- **Used to supplement the Fire Module**
- **Incident Types 111 and 120's**

Slide 3-4

Slide 3-5

I1--STRUCTURE TYPE ☆

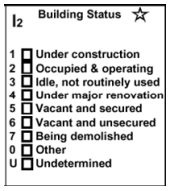


- **Identifies the specific property type of a structure**
- **Continue only if building was enclosed or a portable/mobile structure**

Slide 3-5

Slide 3-6

I2--BUILDING STATUS ☆



Identifies the operational status of the building at the time of the incident

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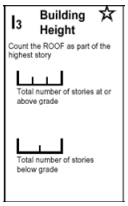
Slide 3-7

I3--BUILDING HEIGHT ☆

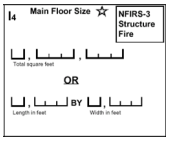


- **Identifies the total number of stories (floors) at or above grade level and the total number of stories below grade in the fire building.**
- **Do not count normally inaccessible attics, attics with less than standing height, or a roof as a story.**

Slide 3-7

Slide 3-8

I4--MAIN FLOOR SIZE ☆



Identifies the floor size--can use

- **Total square feet**
- **Length x width**

Slide 3-8

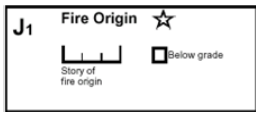
Slide 3-9

Activity 3.1
Structure Type, Building Status

Slide 3-9

Slide 3-10

J1--FIRE ORIGIN ☆



- **Identifies the story (floor level) where the fire originated within the building**
- **Identifies floor levels above or below grade**

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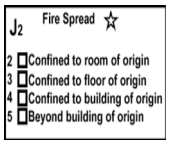
Slide 3-11

J2--FIRE SPREAD ☆



- **Identifies the extent of flame damage within the structure.**
- **Flame damage is area actually burned or charred.**
- **Does not include heat, smoke, or water damage.**

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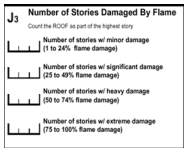
Slide 3-12

J3--NUMBER OF STORIES DAMAGED BY FLAME



- **Identifies the number of stories (floor levels) damaged by fire by percent of damage**
- **Do not include damage from heat, smoke, or water damage**

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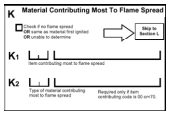
Slide 3-13

K--MATERIAL CONTRIBUTING MOST TO FLAME SPREAD



- **K_1 identifies the item contributing most to flame spread, if different from the item first ignited.**
- **K_2 identifies the type of material contributing most to flame spread, if different than the type of material first ignited.**

Slide 3-13

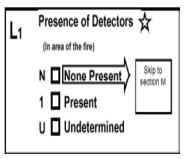
Slide 3-14

Activity 3.2
Story of Origin, Fire Spread

Slide 3-14

Slide 3-15

L_1--PRESENCE OF DETECTORS ☆



- **Captures data on detectors if they were present in the general area of the fire**
- **Required if the fire was within the area covered by the detector**
  - **If not, skip to Section M**

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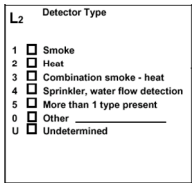
Slide 3-16

L2--DETECTOR TYPE



Identifies the type of fire detection system that was present in the area of fire origin

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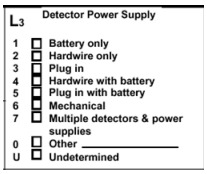
Slide 3-17

L3--DETECTOR POWER SUPPLY



Identifies the type of power supplying the detector

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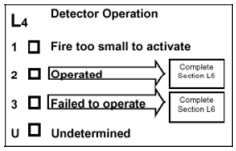
Slide 3-18

L4--DETECTOR OPERATION



This data element identifies whether or not the detection equipment worked.

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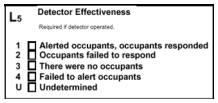
L5--DETECTOR EFFECTIVENESS

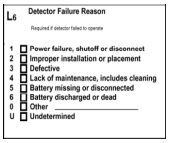


- **Identifies the effectiveness of the fire detection equipment in alerting the occupants**
- **Required if the detector operated**

Slide 3-19

Slide 3-20

L6--DETECTOR FAILURE REASON



- **Identifies why the detector failed to operate or did not operate properly**
- **Required if the detector failed to operate**

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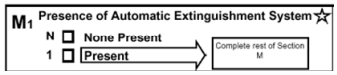
Slide 3-21

M1--PRESENCE OF AUTOMATIC EXTINGUISHMENT SYSTEM



- **Identifies the presence of automatic extinguishment system (AES).**
- **If AES is present complete the rest of Section M.**

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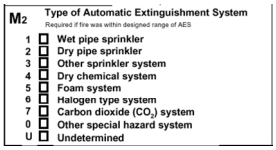
Slide 3-22

M2--TYPE OF AUTOMATIC EXTINGUISHMENT SYSTEM



Identifies the type of AES that was present in the area of fire origin

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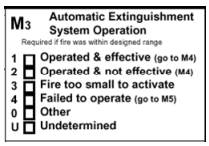
Slide 3-23

M3--AUTOMATIC EXTINGUISHMENT SYSTEM OPERATION



Identifies the operation and effectiveness of AES in the area of fire origin

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Slide 3-24

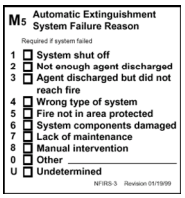
M4--NUMBER OF SPRINKLER HEADS OPERATING

Identifies the number of sprinkler heads that operated during the fire

Slide 3-24

Slide 3-25

M5--AUTOMATIC EXTINGUISHMENT SYSTEM FAILURE REASON



Identifies the reason why the AES failed to operate

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Activity 3.3
Detection and Suppression Equipment

Slide 3-26

Slide 3-27

SUMMARY

- **The Structure Fire Module (NFIRS 3) is used in conjunction with the Fire Module to gather information about larger fire incidents that involve buildings.**
- **The Structure Fire Module clarifies information about:**
  - **The buildings involved in the fire.**
  - **How the fire started.**
  - **Detection and automatic suppression equipment.**

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QUESTIONS?

Slide 3-28

UNIT 4: CIVILIAN FIRE CASUALTY MODULE--NFIRS 4

OBJECTIVES

The students will be able to:

1. *Describe when the Civilian Fire Casualty Module is to be used.*

2. *Given the scenario of a hypothetical incident, demonstrate how to complete a Civilian Fire Casualty Module and other appropriate modules.*

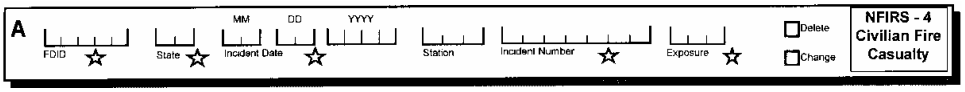
CIVILIAN FIRE CASUALTY MODULE--NFIRS 4

The Civilian Fire Casualty Module captures data regarding any civilian (non-fire-service) casualty associated with fire-related incidents. An entry in H1 of the Basic Module will initiate the completion of this module.

> A casualty is a person who dies or is physically injured as the direct result of a fire-related incident. In this circumstance the term civilian includes, but is not limited to, private citizens, emergency medical service (EMS) responders (not fire department), and police.

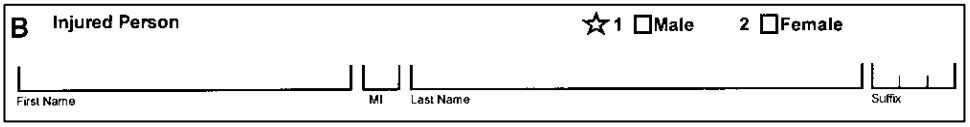
If a casualty is recorded initially as an injury and the casualty subsequently dies, a change to the civilian fire casualty form for that incident must be submitted.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure



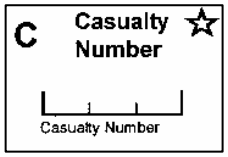
This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of an incident. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required.

Section B: Injured Person



Boxes are available to indicate whether the casualty is male or female (gender is a required field). The rest of Section B is used to enter the first and last name, middle initial, and any suffix (i.e., Jr., Sr., and III) for the casualty.

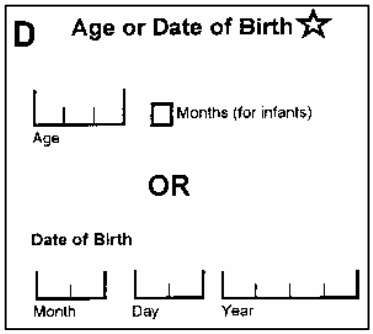
Section C: Casualty Number



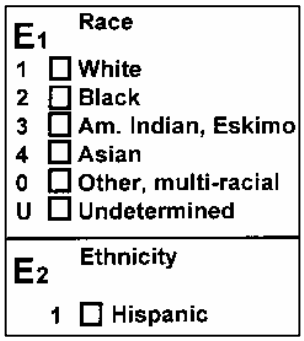
Each casualty is given a number. The numbers are assigned consecutively starting with 001 and continuing based upon how many civilians are injured or killed.

Section D: Age or Date of Birth

Either the age or date of birth--not both--of the casualty is entered. If the age is entered, the numbers are assumed to represent years unless the "Months" box is marked. The age in months should only be recorded for infants younger than 1 year at time of injury.



Section E: Race and Ethnicity

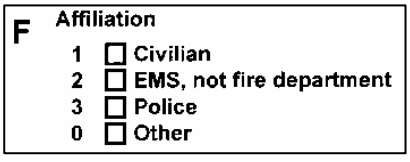


Block E1 contains six boxes; one box is marked to capture the race of the casualty, if known.

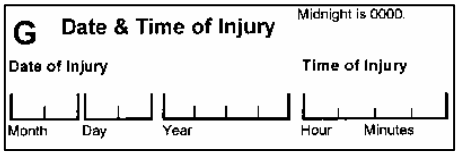
Block E2 identifies the ethnicity of the casualty. This is an ethnic classification or affiliation. Currently "Hispanic" is the only U.S. Census Bureau classification. Hispanic is not considered a race, because a person can be black **and** Hispanic, white **and** Hispanic, etc.

Section F: Affiliation

One box should be marked to capture the casualty's affiliation--civilian, EMS (not fire department), police, or other.



Section G: Date & Time of Injury

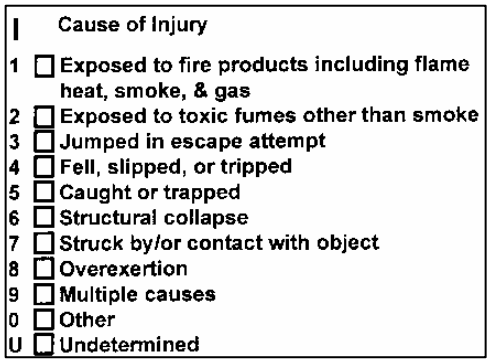


The month, day, year, and time of the injury are recorded in the appropriate spaces. Time--hours and minutes--is entered based on the 24-hour clock, where midnight is 0000.

Section H: Severity

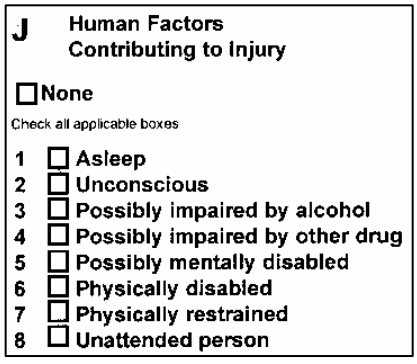
The severity of the injury is entered in H1. Five boxes offer choices of minor, moderate, severe, life threatening, and death.

Section I: Cause of Injury



One box in Section I is marked to indicate the main cause of injury. There are 11 possible choices.

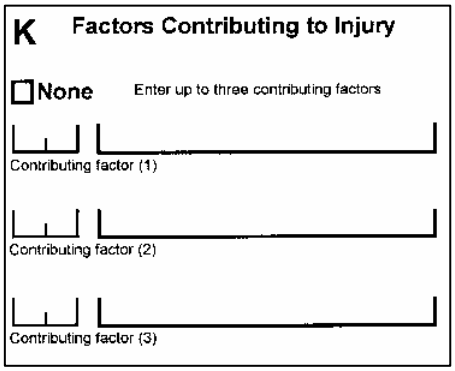
Section J: Human Factors Contributing to Injury



This field identifies the human factors, if any, that contributed to the injury. The box labeled "None" can be marked if no human factors contributed. Make as many boxes as are applicable.

Section K: Factors Contributing to Injury

Factors other than human that contributed to the injury are noted in Section K. Codes found in the NFIRS *Handbook* or *Quick Reference Guide* (QRG) can be used to clarify up to three factors that contributed to the injury. If there were no such factors, the "None" box is marked.



Factors Contributing to Injury Codes

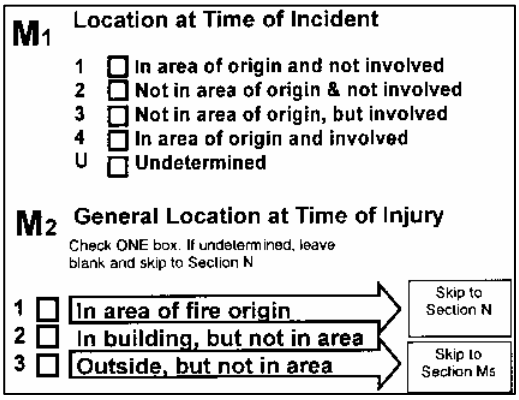
	Egress problem
10	Egress problem, other
11	Crowd situation, limited exits
12	Mechanical obstacles to exit
13	Locked exit or other problem with exit
14	Problem with quick release burglar or security bar
15	Burglar or security bar, intrusion barrier
16	Window type impeded egress
	Fire Pattern
20	Fire pattern, other
21	Exits blocked by flame
22	Exits blocked by smoke
23	Vision blocked or impaired by smoke
24	Trapped above fire
25	Trapped below fire
	Escape
30	Escape, other
31	Unfamiliar with exits
32	Excessive travel distance to nearest clear exit
33	Chose inappropriate exit route
34	Re-entered building
35	Clothing caught fire while escaping
	Collapse
40	Collapse, other
41	Roof collapse
42	Wall collapse
43	Floor collapse
	Vehicle-Related Factors
50	Vehicle-related, other
51	Trapped in/by vehicle
52	Vehicle collision, roll-over
	Equipment Related Factors
60	Equipment related factors, other
61	Unvented heating equipment
62	Improper use of heating equipment
63	Improper use of cooking equipment
	Other
91	Clothing burned, not while escaping
92	Overexertion
00	Other
NN	None

Section L: Activity When Injured

One of the 10 boxes is marked to indicate what the casualty was doing at the time of injury.

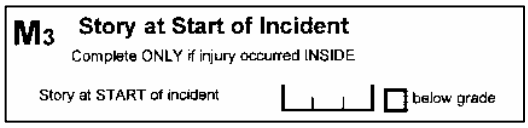
Section M: Location at Time of Incident, General Location at Time of Injury, Story at Start of Incident, Story When Injury Occurred, and Specific Location at Time of Injury

In block M1, mark one box to describe the location of the casualty at the time of the incident.



A box in M2 is marked to indicate the general location of the casualty at the time of injury. If the casualty's location is undetermined, leave this block blank and skip to Section N.

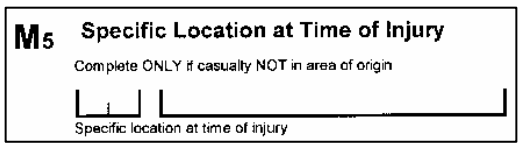
When the box "In area of fire origin" is marked, the rest of the section is skipped and entries are continued on Section N. If the casualty was "Outside," skip to M5.



M3 is completed **only** if the injury occurred inside the building but not in the area of fire origin. The story where the casualty was at the start of the incident is entered.

Stories are numbered with 1 representing ground level. A box is marked if that story is below grade. For an ordinary residential basement, you would enter 1, for story at start of incident and mark the box "below grade."

The story where the injury occurred is entered in M4 if it is different from the story at the start of the incident.



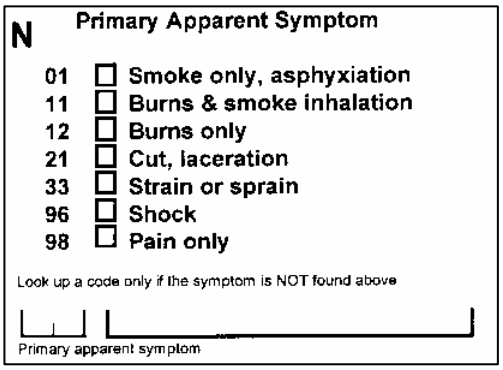
Block M5 is completed **only** if the injury is in the building but did not occur in the area of fire origin.

Enter a description and a code found in the NFIRS *Handbook* or the QRG--which best explain the location.

The code set table used for this data element is the same set that is used for **Area of Fire Origin--D1** in the Fire Module. Please see the codes listed for that data element found on page 42 of the QRG (March 2004 Ed.)

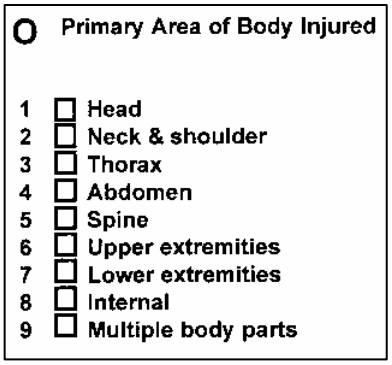
Section N: Primary Apparent Symptom

Several boxes with codes are provided in this section and the appropriate one is marked to indicate the primary symptom of the injured person. If the primary symptom is not on this list, a suitable code can be sought in the NFIRS *Handbook* or in the QRG; a line is provided to enter it.



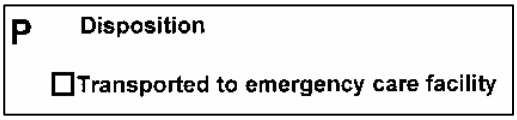
Section O: Primary Area of Body Injured

This section lists nine areas of the body. The primary area of the body injured can be noted by marking the relevant box. This should be the same part of the body affected by the "primary apparent symptom" (Section N).



Section P: Disposition

Mark the box in this section if the casualty was transported to an emergency care facility.



Space is provided on the paper forms as a local option for remarks.

Activity 4.1

Completion of Various NFIRS Modules

Purpose

To select and complete appropriate NFIRS modules correctly, given the scenario of a hypothetical incident.

Directions

1. Work with your small group to select and complete the right NFIRS modules correctly, based on the information provided.

2. Allow 20 minutes to complete the necessary modules and prepare for class discussion.

Scenario

At 2:36 p.m., on August 25, 2004, the 9-11 center receives a telephone call reporting a fire in a building at 1326 Market Street (ZIP Code 05641). The Orange, Vermont, Fire Department (FDID TR100) is dispatched and responds with two engines, one truck, and one Deputy Chief. This represents 12 personnel. The dispatch center receives additional calls reporting a fire at this location and dispatches one engine from the Lakeview Fire Department (FDID 11077).

Engine 422 arrives on the scene at 2:41 p.m. and reports a two-story single family dwelling of approximately 2,000 square feet. Fire is showing on the first floor. The crew from Engine 422 advances a 1-3/4-inch line to the fire, searching for occupants as they proceed.

Deputy Chief Sam B. Depew (Badge ID 404) arrives on the scene at 2:42 p.m. and assumes command of the incident. Truck 42 arrives at 2:43 p.m. The truck company is split into two crews. One crew performs search and rescue and the other performs ventilation. When the crews complete their initial tasks, they do salvage and overhaul.

Engine 425 arrives on the scene at 2:44 p.m., lays a supply line to Engine 422, and takes a hydrant. The crew then takes a 1-3/4-inch line to the second floor and finds that the fire has extended into a bedroom. The extension was through existing balloon framing and combustible insulation.

Deputy Chief Depew determines the fire is under control at 3:01 p.m.

The truck company's captain reports that most of the family escaped the fire when they heard the smoke detectors sounding. (Detectors were hardwired with battery back up.) The search and rescue team from Truck 42 found one victim--60-year old, white male, Robert A. Thomas, Sr.--in a second story bedroom. They carried the victim downstairs and outside to safety.

Mr. Thomas was treated for smoke inhalation by the Orange Fire Department EMT's on the scene. His condition improved and he was transported by private ambulance to the Mercy Hospital Emergency Room. Mr. Thomas stated later that he had been on the sofa, drinking alcohol, and watching television. He also stated that he had been smoking earlier in the evening and left the ashtray on the sofa when he went to bed at 1:00 p.m.

The investigator determined that the fire started in the living room where the couch was located. It appeared that the ashtray fell into the couch cushions and a smoldering cigarette started the fire. Building property loss was estimated at $65,000; loss to contents was estimated at $15,000. There was heavy damage to the first story and significant damage to the second story. The fire spread by way of insulation within the walls.

Mr. Robert Thomas was the recorded occupant of the home. His phone number is (888) 555-5555. The owner of the dwelling is P&K Development Corporation of Parrot Island, Florida, 73333. The phone number is (777) 235-8888. Ms. Laurie Burnetti of 1 Mango Drive is their agent.

Incident number 006231 was assigned to the call. There were no exposures. Engine 422 cleared the scene at 3:00 p.m. and was available for duty at 3:25 p.m. Truck 42 cleared the scene at 3:20 p.m. and was available at 3:45 p.m. Deputy Chief Depew cleared the scene at 3:35 p.m. and was available at 3:36 p.m. and Engine 425 cleared at 3:50 p.m. and was available at 4:10 p.m. Deputy Chief Depew filed the report after returning to the station.

Notes on Activity Debriefing

SUMMARY

The Civilian Fire Casualty Module captures data regarding any civilian (non-fire-service) casualty associated with fire-related incidents. If a summarized count and type (injury or death) is entered in H1 of the Basic Module, the Civilian Fire Casualty Module is completed.

A civilian casualty is a private citizen, emergency medical responder (not fire department), or police officer who dies or is physically injured as the result of a fire-related incident.

NOTE-TAKING GUIDE

Slide 4-1

UNIT 4:
CIVILIAN FIRE CASUALTY MODULE--NFIRS 4

Slide 4-1

Slide 4-2

NFIRS 4--CIVILIAN FIRE CASUALTY MODULE

Slide 4-2

Slide 4-3

OBJECTIVES

The students will be able to:

- **Describe when the Civilian Fire Casualty Module is to be used.**
- **Given the scenario of a hypothetical incident, demonstrate how to complete a Civilian Fire Casualty Module and other appropriate modules.**

Slide 4-3

Slide 4-4

CIVILIAN FIRE CASUALTY MODULE

- **Captures data regarding civilian and/or non-fire-service casualties.**
- **The injury must be the result of a fire.**

Slide 4-4

Slide 4-5

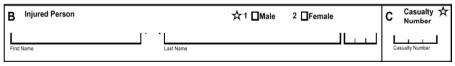
A--HEADER

- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

Slide 4-5

Slide 4-6

B--INJURED PERSON



Identifies the name and gender of the casualty

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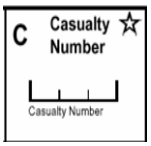
Slide 4-7

C--CASUALTY NUMBER ☆



Assign a specific consecutive number to each casualty beginning with 001

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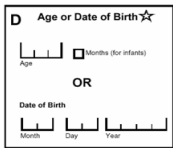
Slide 4-8

D--AGE OR DATE OF BIRTH ☆



- **Identifies the age or date of birth of the casualty**
- **Use months for infants**

Slide 4-8

Slide 4-9

E1--RACE/E2--ETHNICITY

- **E1 identifies race of casualty based upon US Census categories.**
- **E2 identifies the ethnicity of the victim. Currently the only Census Bureau classification for ethnicity is Hispanic.**

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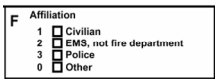
Slide 4-10

F--AFFILIATION



Identifies if the casualty was a civilian or a non-fire-service emergency responder

Slide 4-10

Slide 4-11

G--DATE & TIME OF INJURY

- **Captures the casualty date.**
- **Captures the time using a 24 hour clock: midnight is 0000.**

Slide 4-11

Slide 4-12

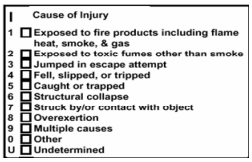
H--SEVERITY ☆

Identifies the relative severity of the casualty

Slide 4-12

Slide 4-13

I--CAUSE OF INJURY

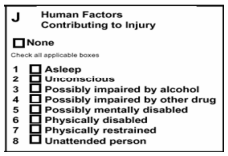

I Cause of Injury
1 ☐ Exposed to fire products including flame heat, smoke, & gas
2 ☐ Exposed to toxic fumes other than smoke
3 ☐ Jumped in escape attempt
4 ☐ Fell, slipped, or tripped
5 ☐ Caught or trapped
6 ☐ Structural collapse
7 ☐ Struck by/or contact with object
8 ☐ Overexertion
9 ☐ Multiple causes
0 ☐ Other
U ☐ Undetermined

Identifies the physical event that caused the injury

Slide 4-13

Slide 4-14

J--HUMAN FACTORS CONTRIBUTING TO INJURY


J Human Factors Contributing to Injury
☐ None
Check all applicable boxes
1 ☐ Asleep
2 ☐ Unconscious
3 ☐ Possibly impaired by alcohol
4 ☐ Possibly impaired by other drug
5 ☐ Possibly mentally disabled
6 ☐ Physically disabled
7 ☐ Physically restrained
8 ☐ Unattended person

Identifies the physical or mental state of the person that may have contributed to the injury

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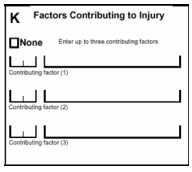
Slide 4-15

K--FACTORS CONTRIBUTING TO INJURY


K Factors Contributing to Injury
☐ None Enter up to three contributing factors
Contributing factor (1)
Contributing factor (2)
Contributing factor (3)

- **Identifies the most significant factors that contributed to the injury**
- **Can identify up to 3 factors**

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Slide 4-16

L--ACTIVITY WHEN INJURED

Identifies the activity in which the person was engaged at the time of the injury

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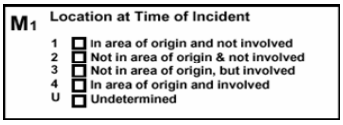
Slide 4-17

M1--LOCATION AT TIME OF INCIDENT



Identifies the location of the victim in relation to fire origin

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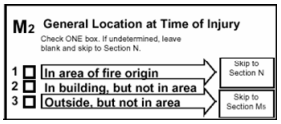
Slide 4-18

M2--GENERAL LOCATION AT TIME OF INJURY



Identifies the location of the victim at time of injury

- **If casualty was in area of fire origin, skip to section N**
- **If casualty was outside of the building and not in area of origin, go to M5**

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Slide 4-19

M3--STORY AT START OF INCIDENT

- **Complete only if the injury occurred inside of building**
- **Identifies the floor level where the victim was at the start of the incident**

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M4--STORY WHERE INJURY OCCURRED

Identifies the story (floor level) where the casualty was located at the time of the injury

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M5--SPECIFIC LOCATION AT TIME OF INJURY

- **Identifies the specific location at the time of injury.**
- **Codes can be found in the *Handbook* or *Quick Response Guide* (QRG).**

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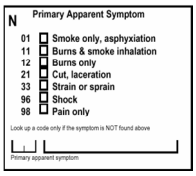
Slide 4-22

N--PRIMARY APPARENT SYMPTOM



- **The casualty's most serious injury**
- **Other codes can be found in the *Handbook* or QRG**

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Slide 4-23

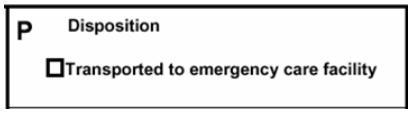
O--PRIMARY AREA OF BODY INJURED

Describes the part of the body that sustained the most serious injury

Slide 4-23

Slide 4-24

P--DISPOSITION



Identifies if the casualty was transported to an emergency care facility

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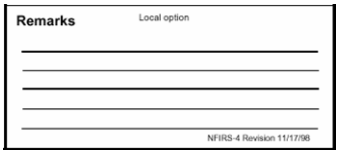
Slide 4-25

REMARKS



The "remarks" section is an area for a narrative description of the injury.

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Activity 4.1
Completion of Various NFIRS Modules

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SUMMARY

- **The Civilian Fire Casualty Module (NFIRS 4) captures data regarding any civilian casualty associated with fire-related incidents.**
- **Civilian fire casualty:**
  - **– Private citizen, emergency medical responder (not fire department), or police.**
  - **– Dies or is physically injured as a result of a fire-related incident.**

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Slide 4-28

UNIT 5: FIRE SERVICE CASUALTY MODULE--NFIRS 5

OBJECTIVES

The students will be able to:

1. *Describe when the Fire Service Casualty Module is to be used.*

2. *Given the scenario of a hypothetical incident, demonstrate how to complete the Fire Service Casualty Module and identify other modules that would need to be completed.*

FIRE SERVICE CASUALTY MODULE--NFIRS 5

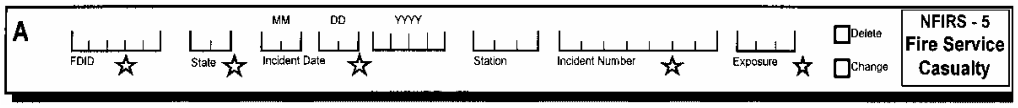
The Fire Service Casualty Module is used to report firefighter injuries, deaths, or exposures involved with an incident.

An exposure occurs when fire service personnel are exposed to a toxic substance or harmful physical agent through any route of entry (e.g., inhalation, ingestion, skin absorption, or direct contact). Exposures can be reported regardless of the presence of clinical signs and symptoms.

An exposure fire is **not** the same as an exposure to fire service personnel.

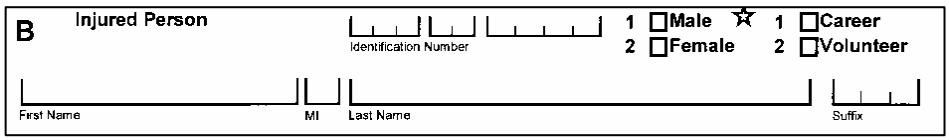
Firefighter casualty information can be used by Health and Safety Officers to reduce risks at incidents.

Section A: Fire Department Identifier, State, Incident Date, Station, incident Number, Exposure



This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of an incident. In an automated system, this information is entered one time and carried forward.

Section B: Injured Person



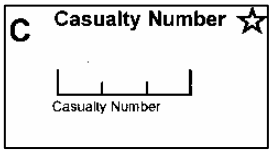
The person is identified and is classified using a variety of means. First, an assigned identification number is entered. Often the individual's Social Security number is used for this purpose.

Next are two sets of boxes which are marked to indicate the gender of the casualty and the casualty's affiliation (career or volunteer; volunteer includes paid-per-call members).

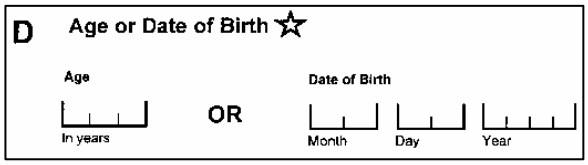
Lines also are provided to enter the first and last name, middle initial, and any suffix (i.e., Jr., Sr., and III) for the casualty.

Section C: Casualty Number

Each casualty is given a number. The numbers are assigned consecutively starting with 001 and continuing based upon how many fire service individuals were injured or killed.

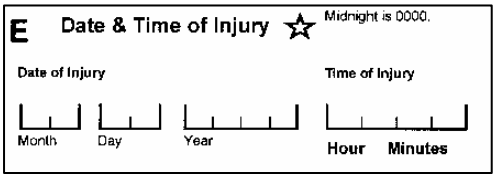


Section D: Age or Date of Birth



Either the age or date of birth--not both--of the casualty must be entered.

Section E: Date & Time of Injury

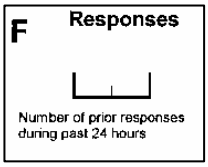


If the injury date is the same as the "date of the incident," enter the same date information that is found in the corresponding entry on the Basic Module. Should the date be different, the appropriate month, day, and year must be entered.

The time--hours and minutes--of the injury is entered using the 24-hour clock where midnight is 0000.

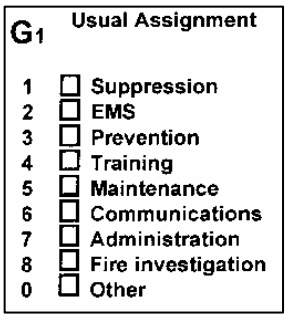
Section F: Responses

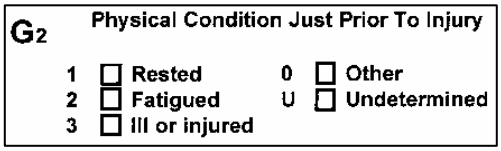
This section can be used to capture the number of incidents to which the casualty responded in the 24-hour period immediately prior to the time of injury.



Section G: Usual Assignment, Physical Condition Just Prior to Injury, Severity, Taken To, Activity at Time of Injury

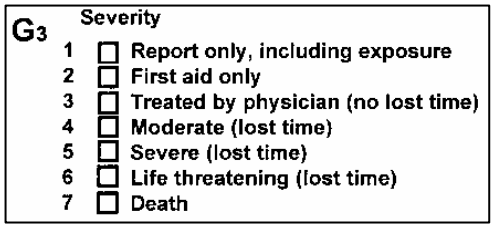
Block G1 describes the official assignment of the casualty. This may not be the same as the firefighter's activity at the time of injury.

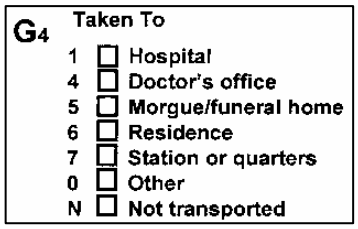




Marking one of five boxes in block G2 captures the physical condition of the casualty just prior to injury.

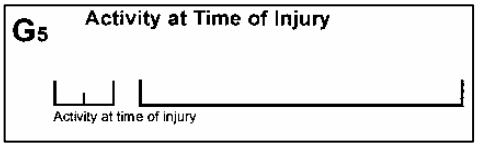
Seven options are provided in G3 to describe the severity or seriousness of the injury. Choices range from "Report only" to "Death."



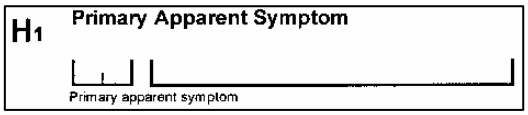


G4 lists seven alternatives that can be used to clarify where the casualty was taken after the injury occurred.

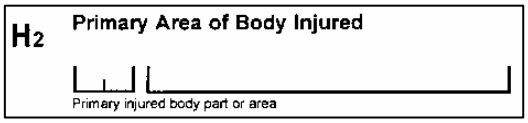
A code used in G5 explains the activity being performed by the firefighter at the time of injury. Relevant codes can be found in the NFIRS *Handbook* or the *Quick Reference Guide* (QRG).



Section H: Primary Apparent Symptom and Primary Area of Body Injured

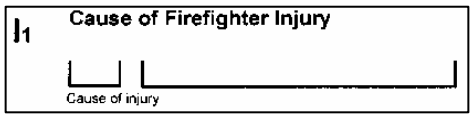


A code entered in block H1 describes the firefighter's most serious injury. The emergency medical technician (EMT) or the person responsible for the prehospital emergency phase determines this information.

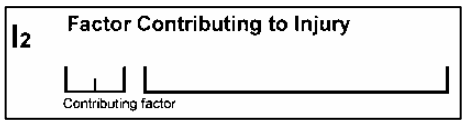


H2 captures the body part or area that sustained the most serious injury. It should be the part of the body affected by the "primary apparent symptom."

Section I: Cause of Firefighter Injury, Factor Contributing to Injury, and Object Involved in Injury

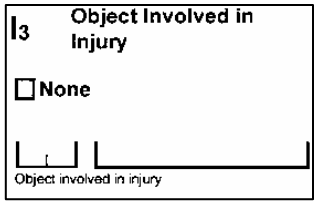


Entering a code from the NFIRS *Handbook* or the QRG in I1 explains the action or lack of action that directly resulted in the casualty.

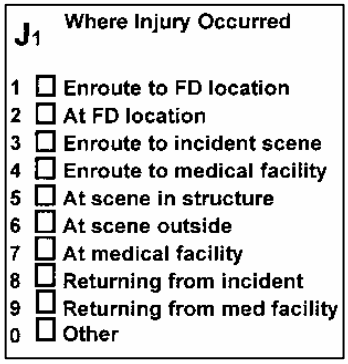


An entry for I2 identifies the most significant factor contributing to the firefighter's injury.

The object that contributed to the injury is clarified by entering a code in block I3.

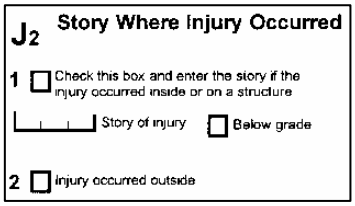


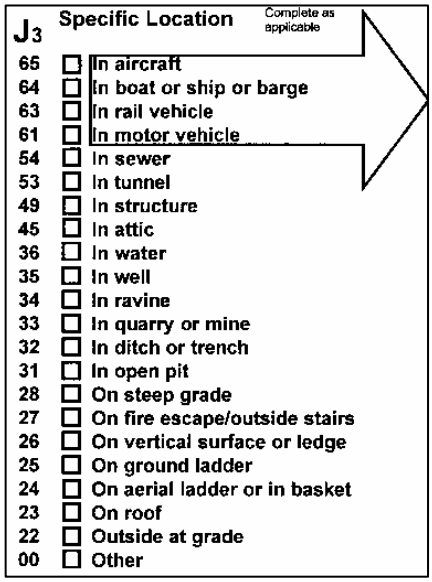
Section J: Where Injury Occurred, Story Where Injury Occurred, Specific Location, and Vehicle Type



Block J1 is completed to describe the place where the injury occurred. A box is marked to select one of the 10 choices. The options offered include enroute to the scene, at the incident scene, at the station, and so forth.

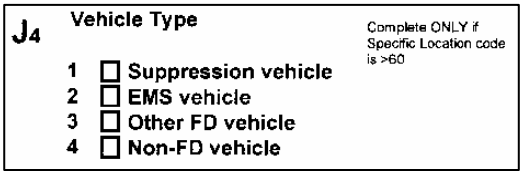
J2 is completed for structure fires only. One box can be marked to indicate that the person was inside/on the structure. A line is provided to enter the story where the injury occurred. The final box can be marked to indicate that the story is below grade.





Several locations with codes are listed in J3 and can be marked to identify the casualty's specific location at the time of injury.

If a location with a code greater than 60 is marked in J3, one of the boxes in J4 is marked to clarify the type of vehicle involved.



Section K: Contribution of Protective Equipment to Injury

K1	Did protective equipment fail and contribute to the injury? Please complete the remainder of this form ONLY if you answered YES.	Yes 1 ☐ No 2 ☐	Equipment Sequence Number ⌊_⌋	NFIRS - 5 Fire Service Casualty

If protective equipment failed or contributed to the injury, the "Yes" box in block K1 is marked and the rest of the section is completed.

Equipment Sequence Number

If more than one piece of protective equipment was a factor in the firefighter's injury, a form (module) should be completed for each piece of equipment. Each item is given a number, assigned consecutively, starting with 001 and continuing based upon how many protective equipment items were involved.

Block K2 records information about the protective equipment item that was a factor in the firefighter's injury. The choices are grouped into the following categories:

- Head or Face Protection;
- Coat, Shirt, or Trousers;
- Boots or Shoes;
- Respiratory Protection;
- Hand Protection; and
- Special Equipment.

K2 Protective Equipment Item

Head or Face Protection

11 ☐ Helmet
12 ☐ Full face protector
13 ☐ Partial protector
14 ☐ Goggles/eye protection
15 ☐ Hood
16 ☐ Ear protector
17 ☐ Neck protector
10 ☐ Other

Coat, shirt, or trousers

21 ☐ Protective coat
22 ☐ Protective trousers
23 ☐ Uniform shirt
24 ☐ Uniform t-shirt
25 ☐ Uniform trousers
26 ☐ Uniform coat or jacket
27 ☐ Overalls
28 ☐ Apron or gown
20 ☐ Other

Boots or Shoes

31 ☐ Knee length boots w/ steel baseplate & steel toes
32 ☐ Knee length boots w/ steel toes only
33 ☐ 3/4 length boots w/ steel baseplate & steel toes
34 ☐ 3/4 length boots w/ steel toes only
35 ☐ Boots without steel baseplate & steel toes
36 ☐ Safety shoes w/ steel baseplate & steel toes
37 ☐ Safety shoes w/ steel toes only
38 ☐ Non-safety shoes
30 ☐ Other

Respiratory Protection

41 ☐ SCBA (demand) open circuit
42 ☐ SCBA (positive pressure) open circuit
43 ☐ SCBA closed circuit
44 ☐ Not self-contained
45 ☐ Cartridge respirator
46 ☐ Dust or particle mask
40 ☐ Other

Hand Protection

51 ☐ Firefighter gloves w/ wristlets
52 ☐ Firefighter gloves without wristlets
53 ☐ Work gloves
54 ☐ Hazmat gloves
55 ☐ Medical gloves
50 ☐ Other

Special Equipment

61 ☐ Proximity suit for entry
62 ☐ Proximity suit for non-entry
63 ☐ Totally encapsulated, reusable chemical suit
64 ☐ Totally encapsulated, disposable chemical suit
65 ☐ Partially encapsulated, reusable chemical suit
66 ☐ Partially encapsulated, disposable chemical suit
67 ☐ Flash protection suit
68 ☐ Flight or jump suit
69 ☐ Brush suit
71 ☐ Exposure suit
72 ☐ Self-contained underwater breathing apparatus (SCUBA)
73 ☐ Life preserver
74 ☐ Life belt or ladder belt
75 ☐ Personal alert safety system (PASS)
76 ☐ Radio distress device
77 ☐ Personal lighting
78 ☐ Fire shelter or tent
79 ☐ Vehicle safety belt
70 ☐ Other

Was the failure of more than one item of protective equipment a factor in the injury? If so, complete an additional page of this form for each piece of failed equipment.

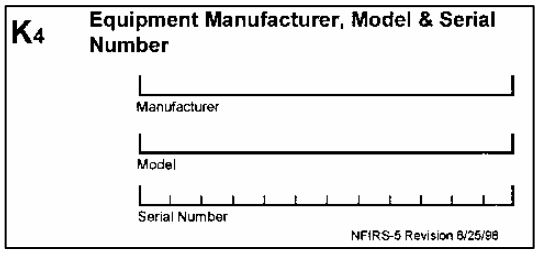
The most significant problem with the piece of equipment that either failed or contributed to the injury is marked in K3. Twenty-seven choices are offered.

K3 Protective Equipment Problem

Check one box to indicate the main problem that occurred.

11	☐ Burned	44	☐ Harness detached or separated
12	☐ Melted	45	☐ Regulator failed to operate
21	☐ Fractured, cracked or broken	46	☐ Regulator damaged by contact
22	☐ Punctured	47	☐ Problem with admissions valve
23	☐ Scratched	48	☐ Alarm failed to operate
24	☐ Knocked off	49	☐ Alarm damaged by contact
25	☐ Cut or ripped	51	☐ Supply cylinder or valve failed to operate
31	☐ Trapped steam or hazardous gas	52	☐ Supply cylinder/valve damaged by contact
32	☐ Insufficient insulation	53	☐ Supply cylinder— insufficient air/oxygen
33	☐ Object fell in or onto equipment item	94	☐ Did not fit properly
41	☐ Failed under impact	95	☐ Not properly serviced or stored prior to use
42	☐ Face piece or hose detached	96	☐ Not used for designed purpose
43	☐ Exhalation valve inoperative or damaged	97	☐ Not used as recommended by manufacturer
		00	☐ Other equipment problem

The last block--K4--provides space to record information regarding the Equipment Manufacturer, Model, and Serial Number.



The name of the company that made/manufactured the piece of equipment involved is entered in the first line. Enter the manufacturer's model name in the next space.

If there is no model name, enter the common physical description of the equipment. The manufacturer's serial number, generally stamped on the equipment's identification plate, is entered in the last line.

Activity 5.1

Completion of Fire Service Casualty Module

Purpose

To complete the Fire Service Casualty Module correctly and to identify other modules that would need to be completed, based on the information provided.

Directions

1. Work with your small group to complete the Fire Service Casualty Module correctly and to identify the other modules that would need to be completed, based on the information provided. FDID, dates, and times will be provided by your instructor, as necessary.

2. Allow 20 minutes to complete the module, identify other modules, and prepare for class discussion.

Scenario

At 0655 on July 21, 2004, the A-1 Alarm Company notified the Regional 9-11 dispatch center of a smoke detector activation at the Busy Bee Market located at the corner of First and Main Streets in the town of North Brook, PA 12345. Engine 45 and Truck 22 (eight firefighters on Shift 1) from the North Brook Fire Department (FDID TR100) were dispatched to the incident at 0658.

Truck 22 arrived at the market at 0705 and reported smoke showing from the one-story building and water running from under the front door. The crew of the Truck Company forced entry and found that a sprinkler head had been activated and was in the process of extinguishing a small fire behind the clerk's counter in the market.

Engine 45, which arrived on location at 0707, extinguished the remaining fire and the Truck Company ventilated smoke from the market and shut down the sprinkler system. The fire was declared under control at 0727.

While the crews were cleaning up and putting the sprinkler system back in service, the owner of the market, Angela Anderson, arrived. She told the Engine Company Captain that she had worked at the market until midnight. It had been a cold evening and she had plugged in an electric heater behind the counter to keep warm. She did not remember if the heater was shut off before she left the market. Ms. Anderson estimated damage to the store contents to be $1,000. The store had 2,500 square feet of floor space and damage to it was estimated to be $4,000.

During the investigation, Fire Marshal Stan found a portable heater lying on its side behind the counter. He determined that the heater ignited a rubber mat on the floor near the cash register. The automatic shutoff feature on the heater failed to operate when the device tipped over. The heater was a Heat-o-Matic, model 25, serial number 123666.

Further investigation determined that the hardwired smoke/heat detector had operated properly and notified the alarm company of the fire. The sprinkler system also had operated properly--one sprinkler head activated and controlled the fire.

While advancing the hoseline to the seat of the fire, Captain Paul Clarke (white male, age 37) was injured when burning materials fell on him. He suffered a burn to his left wrist in the area between his glove and the sleeve of his turnout coat. The gloves were the "Firefighter" model made by the ABC Corporation.

Captain Clarke's injury occurred at 0715. Prior to this incident, Clarke and his crew had responded to two other fires during the night and five other incidents on their shift. After the fire was extinguished, Captain Clarke was taken to Mercy Hospital for treatment of the burn. He returned to work 6 days later

The last company cleared the scene at 0815. The incident number of 0500967 was assigned for this fire.

Notes on Activity Debriefing

SUMMARY

NFIRS 5 is used only to report firefighter injuries, deaths, or exposures involved with an incident. Firefighter casualty information can be used by Health and Safety Officers to reduce risks at incidents.

NOTE-TAKING GUIDE

Slide 5-1

UNIT 5:
FIRE SERVICE CASUALTY MODULE--NFIRS 5

Slide 5-1

Slide 5-2

NFIRS 5--FIRE SERVICE CASUALTY MODULE

Slide 5-2

Slide 5-3

OBJECTIVES

The students will be able to:

- **Describe when the Fire Service Casualty Module is to be used.**
- **Given the scenario of a hypothetical incident, demonstrate how to complete the Fire Service Casualty Module and identify other modules that would need to be completed.**

Slide 5-3

Slide 5-4

FIRE SERVICE CASUALTY MODULE

- **Used to report injuries, deaths, or exposures of fire service personnel.**
- **Exposure of fire service personnel to toxic substances or harmful physical agents should be reported, even if no signs or symptoms are present.**
- **One module is completed for each individual.**

Slide 5-4

Slide 5-5

A--HEADER

- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

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Slide 5-6

B--INJURED PERSON

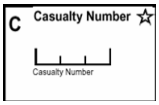
Identifies personal information

- **Name**
- **Gender**
- **Department type:**
  - **Volunteer (include paid-on-call)**
  - **Career**

Slide 5-6

Slide 5-7

C--CASUALTY NUMBER ☆



Each fire service casualty is assigned a number beginning with 001.

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Slide 5-8

D--AGE OR DATE OF BIRTH ☆

Identifies the age or date of birth of the fire service casualty

Slide 5-8

Slide 5-9

E--DATE AND TIME OF INJURY ☆

- **Identifies the date and time of injury.**
- **Midnight is 0000.**

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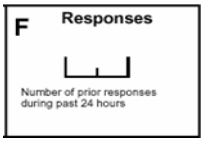
Slide 5-10

F--RESPONSES



Identifies the number of responses that the firefighter made during the previous 24 hours

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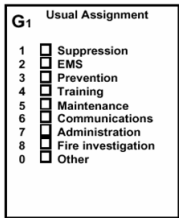
Slide 5-11

G1--USUAL ASSIGNMENT



- **Identifies the usual assignment of the injured fire service personnel.**
- **This might not be the same as the individual's activity at the time of injury.**

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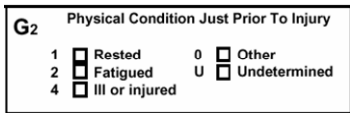
Slide 5-12

G2--PHYSICAL CONDITION

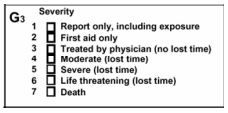


Identifies the physical condition of the firefighter prior to the injury

Slide 5-12

Slide 5-13

G3--SEVERITY

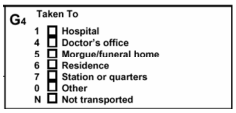


- **Identifies the severity of the injury.**
- **Used to report injuries, deaths, or exposures to fire service personnel.**
- **Exposure of fire service personnel to toxic substances or harmful physical agents should be reported.**

Slide 5-13

Slide 5-14

G4--TAKEN TO

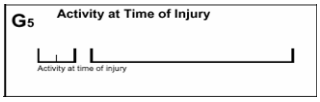


Identifies where the fire service casualty was taken after the injury occurred

Slide 5-14

Slide 5-15

G5--ACTIVITY AT TIME OF INJURY



- **Identifies what the firefighter was doing at the time of injury.**
- **Codes are found in the *Handbook* or *Quick Reference Guide* (QRG).**

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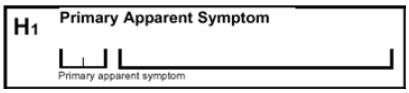
Slide 5-16

H1--PRIMARY APPARENT SYMPTOM



- **Block H1: Primary Apparent Symptom describe most serious apparent injury.**
- **Coded field:**
  - **Codes are found in *Handbook* and QRG.**

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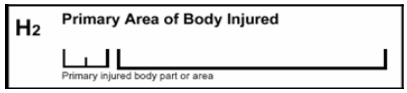
Slide 5-17

H2--PRIMARY AREA OF BODY INJURED



Identifies the part of the body which sustained the most serious injury

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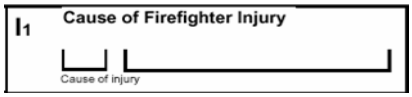
Slide 5-18

I1--CAUSE OF FIREFIGHTER INJURY



- **Identifies the cause of the firefighter injury.**
- **Codes can be found in the *Handbook* or QRG.**

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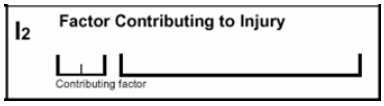
Slide 5-19

I2-- FACTOR CONTRIBUTING TO INJURY



Identifies the most significant factor contributing to the injury

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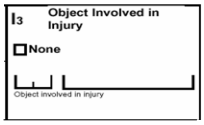
Slide 5-20

I3--OBJECT INVOLVED IN INJURY



Used to clarify what object contributed to the injury

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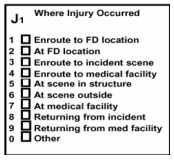
Slide 5-21

J1--WHERE INJURY OCCURRED



Describes the location of the firefighter at the time of injury

Slide 5-21

Slide 5-22

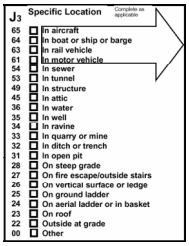
J2--STORY WHERE INJURY OCCURRED

Identifies the story (above or below grade) where the injury occurred

Slide 5-22

Slide 5-23

J3--SPECIFIC LOCATION



- **Provides additional details on the specific location of the casualty at the time of injury.**
- **Complete J4 if casualty was in a vehicle when injured.**

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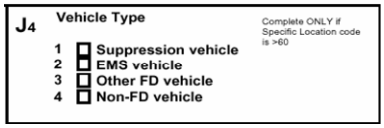
Slide 5-24

J4--VEHICLE TYPE



Complete only if the fire service casualty was in a vehicle at the time of injury

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Slide 5-25

K1--PROTECTIVE EQUIPMENT

K1	Did protective equipment fail and contribute to the injury? Please complete the remainder of this form ONLY if you answered YES.	Yes Y ☐ No N ☐

If protective equipment failed *and* was a factor in this injury, complete the remainder of Section K.

Slide 5-25

Slide 5-26

K1--EQUIPMENT SEQUENCE NUMBER

Equipment Sequence Number ⌊_⌋

- **A unique number assigned to each piece of equipment that failed *and* contributed to the *injury reported*.**
- **First piece of faulty equipment is always "001" (consecutively number additional pieces).**

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Slide 5-27

K2--PROTECTIVE EQUIPMENT ITEM

K2 Protective Equipment Item

Head or Face Protection

11 ☐ Helmet
12 ☐ Full face protector
13 ☐ Partial protector
14 ☐ Goggles/eye protection
15 ☐ Hood
16 ☐ Ear protector
17 ☐ Neck protector
10 ☐ Other

Coat, shirt, or trousers

21 ☐ Protective coat
22 ☐ Protective trousers
23 ☐ Uniform shirt
24 ☐ Uniform t-shirt
25 ☐ Uniform trousers
26 ☐ Uniform coat or jacket
27 ☐ Overalls
28 ☐ Apron or gown
29 ☐ Other

boots or shoes

31 ☐ Knee length boots w/ steel baseplate & steel toes
32 ☐ Knee length boots w/ steel toes only
33 ☐ 3/4 length boots w/ steel baseplate & steel toes
34 ☐ 3/4 length boots w/ steel toes only
35 ☐ Boots without steel baseplate & steel toes
36 ☐ Safety shoes w/ steel baseplate & steel toes
37 ☐ Safety shoes w/ steel toes only
38 ☐ Non-safety shoes
39 ☐ Other

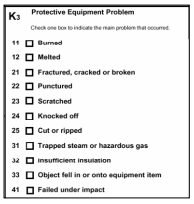
(Partial list)

- **Identifies each piece of equipment that contributed to the injury of the firefighter.**
- **If more than one piece of protective equipment was a factor in the firefighter's injury, use additional sheets.**

Slide 5-27

Slide 5-28

K3--PROTECTIVE EQUIPMENT PROBLEM



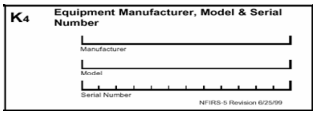
Describes the most serious problem with the piece of equipment that failed and contributed to the injury

(Partial list)

Slide 5-28

Slide 5-29

K4--EQUIPMENT MANUFACTURER, MODEL, & SERIAL NUMBER



Provide detailed information on the specific equipment that failed and contributed to the injury

Slide 5-29

Slide 5-30

Activity 5.1
Completion of Fire Service Casualty Module

Slide 5-30

Slide 5-31

SUMMARY

- **The Fire Service Casualty Module (NFIRS 5) is used to report any firefighter injury, death, or exposure.**
- **Exposure of fire service personnel to toxic substances or harmful physical agents should be reported, even if no signs or symptoms are present.**
- **Fire service casualty information can be used by Health and Safety Officers to reduce risks at incidents.**

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Slide 5-32

QUESTIONS?

Slide 5-32

UNIT 6: EMERGENCY MEDICAL SERVICES MODULE--NFIRS 6

OBJECTIVES

The students will be able to:

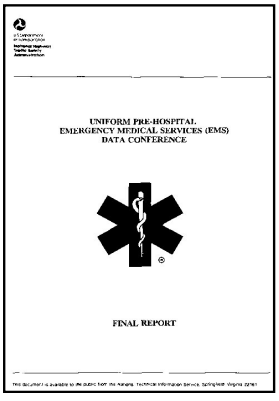
1. *Identify the different modules that are used to record casualties/injuries.*
2. *Understand the need for the various modules and which module to use in various circumstances.*
3. *Given hypothetical narrative reports, demonstrate how to complete the EMS Modules.*

EMERGENCY MEDICAL SERVICES MODULE--NFIRS 6

In its infancy, fire department activity reporting was limited to fires only--at least on a national level. Little recognition was given to the "other" activities that fire departments were performing on a daily basis. As fire department management became more responsive to the budgetary concerns and restrictions of fiscal policy, the need to justify all activities and expenditures grew. Many local fire departments began to collect data on their own, using the NFIRS program to attempt to gather management information concerning all of those other activities and stretching the program in directions that were never anticipated.

Recognizing that emergency medical services (EMS)-type activities are a significant portion (well over 40 percent) of what fire departments currently are doing, the National Fire Information Council (NFIC) encouraged the United States Fire Administration (USFA) to include an EMS Reporting Module in the new NFIRS 5.0 reporting system. The USFA acknowledged that EMS was integral to the needs of local fire departments and the data were critical to management of those departments. Thus, tasking for the development of an EMS Module was contained in the 1996 cooperative agreement between the USFA and NFIC.

An EMS reporting committee was formed with representation from local fire departments providing emergency medical services, State Fire Marshal's offices, a State EMS Director, and a physician advisor.


UNIFORM PRE-HOSPITAL
EMERGENCY MEDICAL SERVICES (EMS)
DATA CONFERENCE

FINAL REPORT

The starting point for the committee's work was the Final Report of the August 1993 Uniform Pre-Hospital Emergency Medical Services Data Conference sponsored by the National Highway Traffic Safety Administration (NHTSA). This document contains the 80 EMS data points and their definitions as agreed upon by the participants of the conference as being "essential" or "desirable" for EMS data systems.

For a copy of the 80 EMS data points and their definitions, see the NHTSA Web site at www.nhtsa.gov/people/injury/ems/products.htm.

Upon review of the NHTSA data elements, the NFIRS EMS Reporting Committee concluded that many of the data elements did not pass the test for "collectable, reportable, or useable." As a result, the committee pulled together patient care reports and EMS data forms from fire departments and State EMS agencies across the country and compared them for data elements that were being collected and reported universally.

As much as practical, NHTSA codes and definitions were retained in order to provide linkage to databases that employ these codes.

The EMS Module is not intended to replace or otherwise interfere with State or local EMS patient care reporting requirements, nor is it intended to be a comprehensive EMS patient care report. Instead, the data elements in this module should be viewed as "core elements" around which a complete patient care report can be built.

Purpose

The purpose of the EMS Module is to gather basic data as they relate to the provision of emergency medical care by local fire service units. It is intended to encompass both responding fire suppression units and fire department EMS units.

Use

The optional EMS Module is used to report all medical incidents to which a department responds.

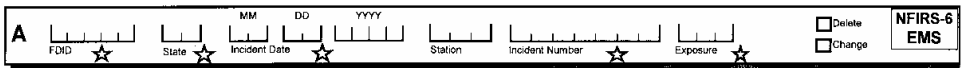
- The EMS module does not replace the Civilian Fire Casualty Module in cases where a civilian injury or death occurs because of fire.

- Data on fire service injuries or deaths are reported on the Fire Service Casualty Module.

Whenever an "Incident Type" in the 300 series (i.e., 311, 322, 371, etc.) is entered on the Basic Module Section C, the EMS Module also may be completed. It also may be completed for injuries that occur at other incidents.

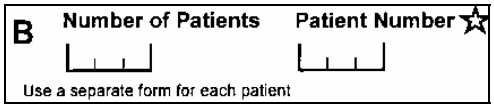
One EMS Module should be used for each patient, and the number of modules submitted for an incident should match the "Number of Patients" entered in Block B of the paper form.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure



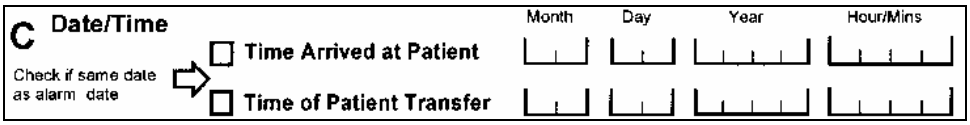
This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of an incident. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required.

Section B: Number of Patients and Patient Number



Two lines are provided. The first line is used to record the total number of patients involved in the incident. As noted above, a separate EMS Module is completed for each patient. On the second line, a number is assigned that identifies the individual patient. Numbers are assigned consecutively starting with 001 and continuing for each patient.

Section C: Date/Time

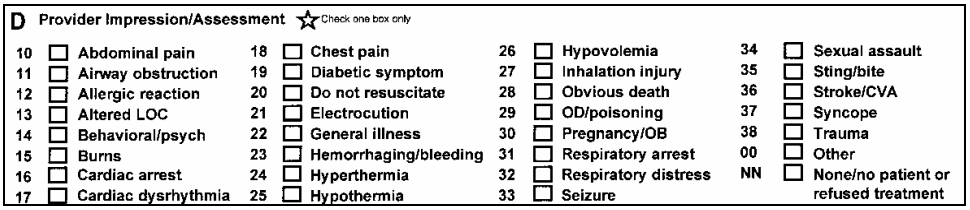


The first line documents the time of arrival at the patient. This data element is important in situations where there may be a significant delay between the time a unit arrives on-scene and the time direct contact is made with the patient.

Examples: EMS personnel prevented from approaching a patient because of fire or other adverse conditions. Responders were accessing a patient on an upper floor of a highrise building.

"Time of Patient Transfer" is entered on the second line. This time should indicate the time when the patient's care was transferred from fire department personnel to another care provider or transportation was started. By subtracting the "Arrival at Patient" time from the "Transfer" time, the department will have an accurate reading of the actual time spent with various patient types.

Section D: Provider Impression/Assessment



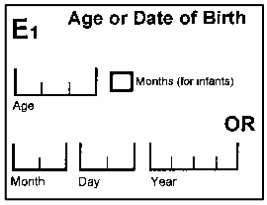
The single clinical assessment that primarily drove the EMS responder's action(s) is recorded by marking one of the coded boxes provided. When more than one choice is applicable to a patient, the responder should indicate the single most important clinical assessment that influenced the plan of therapy and management.

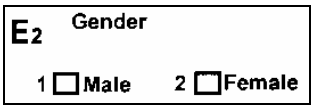
The box marked should clarify the actual assessment, and that may be different from the original complaint for which the unit was dispatched.

Based on the assessment made, it should be possible to determine whether the treatments or medications provided match protocols that relate to the clinical impression.

Section E: Age or Date of Birth and Gender

Either the patient's age or date of birth is entered in block E1. By marking the "Months" box, the age of infants can be recorded.

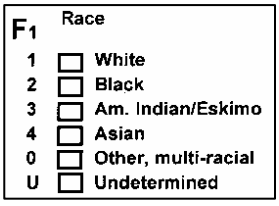


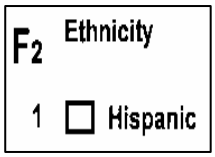


Block E2 lets the responder record the patient's sex by marking one of the two boxes.

Section F: Race and Ethnicity

Block F1 contains six boxes and one can be marked to capture the race of the patient, if known.



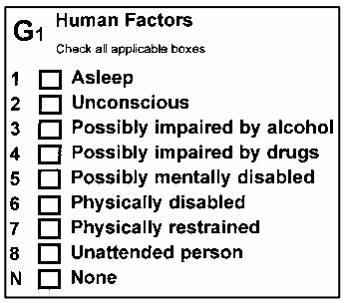


F2 identifies the ethnicity of the subject. This is an ethnic classification or affiliation. Currently "Hispanic" is the only U.S. Census Bureau ethnic classification. Hispanic is not considered a race, because a person can be black **and** Hispanic, white **and** Hispanic, etc.

This data is useful for epidemiological studies and can be important in accessing certain types of Federal or State funds that are directed to specific racial or ethnic groups.

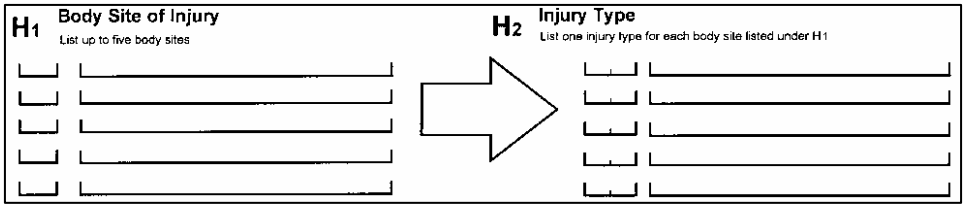
Section G: Human Factors and Other Factors

Nine boxes are provided in G1 to clarify patient circumstances that may have contributed to the injury/illness. Mark as many boxes as applicable. This information can be important to injury researchers who plan injury-reduction programs based on human factors.



Block G2 addresses other factors--accidental; self-inflicted; or inflicted, not self--that affect how the injury/illness occurred. Data can be used to show number comparisons between accidental and self-inflicted incidents.

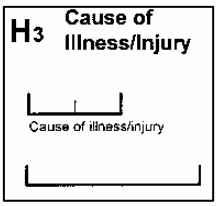
Section H: Body Site of Injury, Injury Type, and Cause of Illness/Injury



Up to five body sites can be recorded in block H1. Describe the body site injured and its corresponding injury type. H2 links the type of injury noted for each body site.

Site and type of injury are crucial data elements that will enable EMS planners to identify the types of injuries experienced by patients using the EMS system. These data also can be used to assess the correlation between injury assessment in the field and actual injuries as evaluated in medical receiving facilities.

A code entered in block H3 captures the specific cause of the illness/injury. The analysis of these data will permit an understanding of the conditions causing the injury and a means of planning both for the treatment in the field of such injuries and any illness/injury reduction program.



Cause of Illness/Injury Codes

10	Chemical exposure	**26**	Lightning
11	Drug poisoning	**27**	Machinery
12	Fall	**28**	Mechanical suffocation
13	Aircraft related	**29**	Motor vehicle accident
14	Bite, includes animal bites	**30**	Motor vehicle accident, pedestrian
15	Bicycle accident	**31**	Non-traffic vehicle (off-road) accident
16	Building collapse/construction accident	**32**	Physical assault/abuse
17	Drowning	**33**	Scalds/other thermal
18	Electrical shock	**34**	Smoke inhalation
19	Cold	**35**	Stabbing assault
20	Heat	**36**	Venomous sting
21	Explosives	**37**	Water transport
22	Fire and flames	**00**	Other cause
23	Firearm	**UU**	Unknown
25	Fireworks		

Example: Patient with two stab wounds in different body sites and a blunt trauma injury to a separate body site.

Block H1	Block H2	Block H3
(2) neck and shoulder	(18) puncture/stab	(35) stabbing
(7) lower extremities	(18) puncture/stab	(35) stabbing
(1) head	(11) blunt injury	(13) assault

The system captures each separate injury related to a particular body site for as many as five injuries.

Section I: Procedures Used

I	Procedures Used	Check all applicable boxes		
01	☐	Airway insertion	14 ☐	Intubation (ETGA)
02	☐	Anti-shock trousers	15 ☐	Intubation (ET)
03	☐	Assist ventilation	16 ☐	IO/IV therapy
04	☐	Bleeding control	17 ☐	Medications therapy
05	☐	Burn care	18 ☐	Oxygen therapy
06	☐	Cardiac pacing	19 ☐	OB care/delivery
07	☐	Cardioversion (defib) manual	20 ☐	Prearrival instructions
08	☐	Chest/abdominal thrust	21 ☐	Restrain patient
09	☐	CPR	22 ☐	Spinal immobilization
10	☐	Cricothyroidotomy	23 ☐	Splint extremities
11	☐	Defibrillation by AED	24 ☐	Suction/aspirate
12	☐	EKG monitoring	NN ☐	No Treatment
13	☐	Extrication	00 ☐	Other

Many possible procedures are listed in Section I. Procedures are defined here as anything done by way of assessment or treatment of the patient.

All applicable boxes should be marked to document the procedures either attempted or actually performed on a patient.

Section J: Safety Equipment

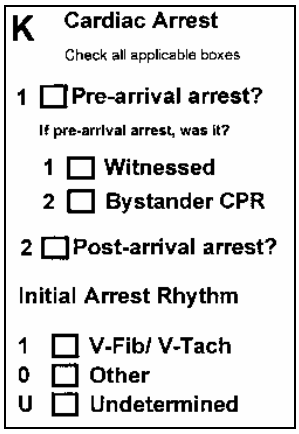
If the patient was using safety equipment at the time of injury, that information can be recorded in Section J. There are nine options provided.

J	Safety Equipment Used or deployed by Patient	
1	☐	Safety/seat belts
2	☐	Child safety seat
3	☐	Airbag
4	☐	Helmet
5	☐	Protective clothing
6	☐	Flotation device
N	☐	None
0	☐	Other
U	☐	Undetermined

These data can provide information about safety devices used in industrial and motor vehicle accidents. Researchers can use the data to study the effectiveness of safety devices in preventing injuries and reducing mortality.

Section K: Cardiac Arrest

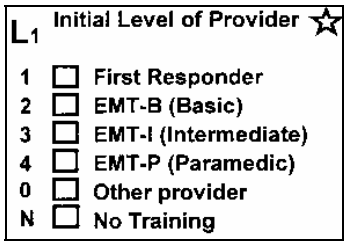
This section offers choices to indicate whether cardiac arrest was pre- or postarrival. If it was pre-arrival, boxes can be marked to document that it was witnessed and/or that bystanders performed CPR.



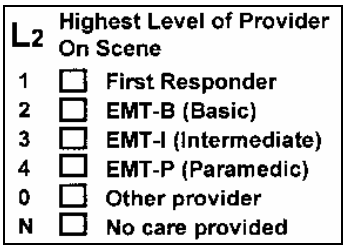
The initial arrest rhythm also can be captured. Mark a box to record V-Fib/V-Tach, Other, or Undetermined.

Data from this section can be used to evaluate prehospital CPR and the effect of cardiac care on morbidity.

Section L: Initial Level of Provider and Highest Level of Provider On Scene

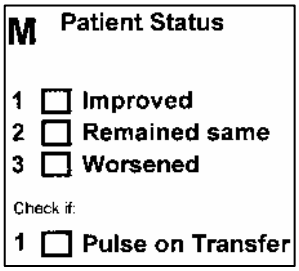


Block L1 collects data regarding the training level of responders providing initial care. Trends in prehospital care provided by fire departments can be researched using the data.



The second block--L2--gathers training-level information for responders who provided the highest level of care at the scene. Having this knowledge can help determine what effect level of care in the field has on patient outcomes.

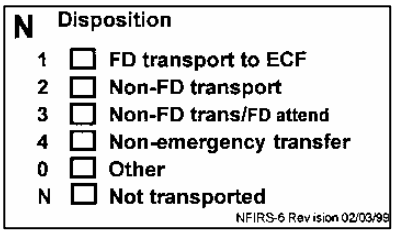
Section M: Patient Status



A box can be marked to indicate whether the patient "Improved," "Remained same," or "Worsened" while under fire department care. This determination would be made at the time of patient transfer. Also a box will, if marked, record that the patient had a pulse when transferred.

Section N: Disposition

Six choices are available to document disposition of the patient. These data will allow generation of reports that show disposition for EMS responses and can correlate the various patient treatments to patient outcomes.



Activity 6.1

Completion of Emergency Medical Services Module

Purpose

Given scenarios of hypothetical incidents, to complete EMS Modules correctly.

Directions

1. Work with your small group to complete EMS Modules accurately describing the scenarios. FDID, dates, and times will be provided by your instructor, as necessary.

2. Allow 15 minutes to complete the modules and be prepared to give a brief presentation to the rest of the class.

Scenario 1

A fire department first-responder unit is dispatched at 1405 hours on April 1, 2004, to a medical call--incident #0004567. The unit is staffed with a driver, an officer, and an EMT. They arrive at the residence, 210 E. Byrd Street, Ashland, OH 44805, at 1407 hours and reach the patient's side at 1410. They find the owner, Mr. Andrew Hyde, a 35-year-old white male, unconscious on the floor. His friends tell them that he just shot up on heroin and has overdosed. The patient shows signs of shallow breathing, pin-point pupils, and has a faint pulse. The EMT inserts an airway, administers oxygen, and assists in ventilation.

A private medic unit arrives and the paramedic administers a dose of Narcan. The patient responds and begins breathing on his own. At 1440, the paramedic determines that the patient has stabilized and arranges transport to an emergency room for further evaluation. The fire department clears the scene at 1450.

Scenario 2

Incident #5678, May 1, 2004, is a medical call responded to by a fire department unit dispatched at 2358 hours. The unit arrives at the home of Mrs. Maria Lopez, 1245 S. First St, Brooklyn, NY 11205 at 0005. Immediately, the crew (a driver and an EMT) is met by her daughter, Marta Lopez (a 22-year-old white, Hispanic female). She has been stabbed in the leg; she bleeds from the wound. Further examination reveals burns on one arm. A first responder stops the bleeding, bandages the wound, and provides care for the burns. At 0020, the patient's family chooses to provide transportation to the closest hospital for further treatment. The unit records the Lopez's telephone number as (516) 999-9999 and clears the scene at 0025.

Scenario 3

A fire department engine and heavy rescue with an EMT-Basic are dispatched to 4125 N. Vine Avenue, Jackson, MS 39201 at 2315 hours on September 4, 2004, to an auto wreck--incident #9800789. Both crews (8 firefighters) arrive on the scene at 2318 hours and reach the victims at 2320. They find one victim--a 42-year-old black male.

The driver, Mr. Raymond Street of 4305 N. Vine Avenue, is trapped between the steering wheel and seat and must be extricated. He is alert and complains of severe neck and chest pain. It is obvious that he also suffers from a broken arm. He admits to having a few drinks at a party (in his neighborhood) just prior to the accident. A "C" collar is applied to assist in immobilizing his spine prior to the extrication. The crew also splints his broken arm once he is removed from the vehicle. He is put on oxygen for his chest pain. Luckily, he was wearing a seatbelt, which prevented more serious injuries. He is transported to the nearest emergency care facility by the fire department ALS ambulance (with a crew of 2) at 2348. They cleared the incident at 0015 hours.

Scenario 4

On March 29, 2004, incident #5445 alerts the Provo Fire Department unit to an apparent cardiac arrest at 1014 hours. The crew of three was at 12640 Blackwood St., Apt. 12E, Provo, Utah 84602 at 1017 but could not immediately secure an elevator to the 12th floor and did not make patient contact until 1025. The crew found a 57-year-old Asian male (Mr. Hong Soon Lee) on the floor with his wife (Ai) performing CPR. She told the crew that her husband had a history of heart ailments and that he has just complained of severe chest pains and collapsed on the floor. The Lee's own the building; telephone number (444) 666-7777.

The firefighter/paramedic immediately inserted an ET tube and began an oxygen flow while the rest of the crew continued with CPR. The firefighter/paramedic then hooked up the automatic external defibrillator (AED) and began an assessment. The AED showed that the victim was in V-fib and suggested that shocks be administered. A series of shocks were administered without any results.

A fire department ambulance (crew of 2) arrived on scene and an ACLS paramedic began to administer a series of heart drugs after consultation with the physician advisor. The crew continued with CPR and additional shocks were given. After 15 more minutes of CPR, the patient was still showing a flat line on the heart monitor. The ACLS paramedic, after consultation, stopped CPR. The ambulance transported Mr. Lee to Provo Hospital at 1057. The fire department cleared the scene at 1059.

Notes on Activity Debriefing

SUMMARY

The EMS Module is used to report all medical incidents to which a fire department responds. When an "Incident Type" in the 300 series is noted on the Basic Module, the EMS Module also may be completed. A separate EMS Module is used for each patient.

NOTE-TAKING GUIDE

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UNIT 6:
EMERGENCY MEDICAL SERVICES MODULE--
NFIRS 6

Slide 6-1

Slide 6-2

NFIRS 6--EMERGENCY MEDICAL SERVICES MODULE

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OBJECTIVES

The students will be able to:

- **Identify the different modules that are used to record casualties/injuries.**
- **Understand the need for the various modules and which module to use in various circumstances.**
- **Given hypothetical narrative reports, demonstrate how to complete the EMS Modules.**

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Slide 6-4

PURPOSE OF EMERGENCY MEDICAL SERVICES MODULE

- **The purpose of the EMS Module is to gather basic data relating to provision of emergency medical care to the community.**
- **Complete when Incident Type "Medical Assist" (311, 321, 322, or 323) is reported in Section C of the Basic Module.**

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Slide 6-5

USE OF EMERGENCY MEDICAL SERVICES MODULE

- **The EMS Module is not intended to replace or otherwise interfere with State or local EMS patient care reporting requirements.**
- **The data elements in this module should be viewed as "core elements" around which a complete patient care report can be built.**

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Slide 6-6

A--HEADER INFORMATION

- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

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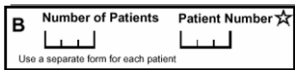
Slide 6-7

B--NUMBER OF PATIENTS/PATIENT NUMBER



- **The total number of patients that were treated by emergency responders at the EMS incident.**
- **☆"Patient Number" is a unique number assigned to each patient treated at a single EMS incident.**

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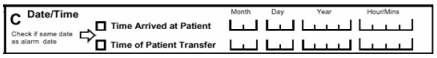
Slide 6-8

C--TIME ARRIVED AT PATIENT/TIME OF PATIENT TRANSFER



- ***Time Arrived at Patient*--The time when emergency personnel established direct contact with patient.**
- ***Time of Patient Transfer*--The time when the response unit left the scene or when patient care was transferred to another care provider.**

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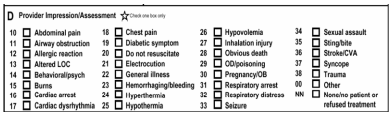
Slide 6-9

D--PROVIDER IMPRESSION/ASSESSMENT ☆



Captures the single clinical assessment which led to the care given

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Slide 6-10

E1--AGE OR DATE OF BIRTH

- **Identifies the age or date of birth of the patient**
- **Permits analysis of outcomes based on age and condition**

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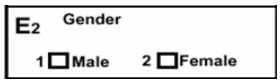
Slide 6-11

E2--GENDER



Identifies the gender of the patient

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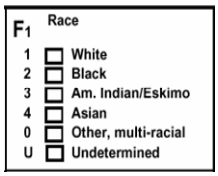
Slide 6-12

F1--RACE



Identifies the patient as a certain race (based on U.S. Census Bureau categories)

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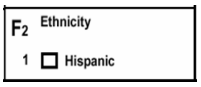
Slide 6-13

F2--ETHNICITY



Identifies the ethnicity of the patient (based on U.S. Census Bureau categories)

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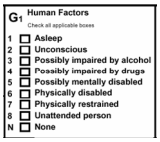
Slide 6-14

G1--HUMAN FACTORS



The physical or mental state of the person prior to the need for emergency assistance

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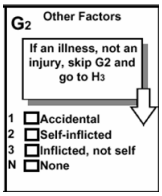
Slide 6-15

G2--OTHER FACTORS



Factors contributing to the patient's injury other than those covered by Human Factors (G1)

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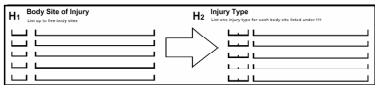
Slide 6-16

H1--BODY SITE OF INJURY/ H2--INJURY TYPE



- **H1 identifies the area of the body that sustained the injury.**
- **H2 describes the injury to that site.**
- **List one injury type for each body site listed.**

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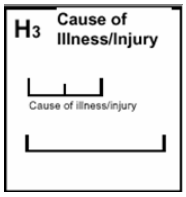
Slide 6-17

H3--CAUSE OF ILLNESS/INJURY

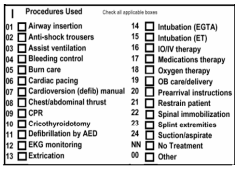


Identifies the physical event that caused the injury or illness

Slide 6-17

Slide 6-18

I--PROCEDURES USED



I	Procedures Used	Check all applicable boxes		
01	☐	Airway insertion	14	☐ Intubation (EGTA)
02	☐	Anti-shock trousers	15	☐ Intubation (ET)
03	☐	Assist ventilation	16	☐ IO/IV therapy
04	☐	Bleeding control	17	☐ Medications therapy
05	☐	Burn care	18	☐ Oxygen therapy
06	☐	Cardiac pacing	19	☐ OB care/delivery
07	☐	Cardioversion (defib) manual	20	☐ Prearrival instructions
08	☐	Chest/abdominal thrust	21	☐ Restrain patient
09	☐	CPR	22	☐ Spinal immobilization
10	☐	Cricothyroidotomy	23	☐ Splint extremities
11	☐	Defibrillation by AED	24	☐ Suction/aspirate
12	☐	EKG monitoring	NN	☐ No Treatment
13	☐	Extrication	00	☐ Other

Identifies the procedures attempted or performed on a patient

Slide 6-18

Slide 6-19

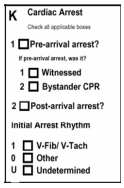
J--SAFETY EQUIPMENT

Identifies the types of safety equipment in use by the patient at the time of injury

Slide 6-19

Slide 6-20

K--CARDIAC ARREST



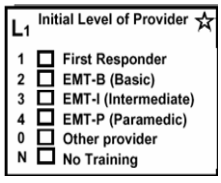
This field is used only if the patient went into or was found in cardiac arrest.

- **Was cardiac arrest pre-arrival? Was it witnessed? Was bystander CPR performed?** *Or*
- **Was cardiac arrest postarrival?**
- **What was the original arrest rhythm?**

Slide 6-20

Slide 6-21

L1--INITIAL LEVEL OF FIRE DEPARTMENT PROVIDER ☆

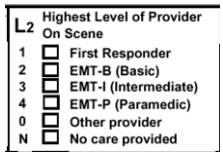


Identifies the training level of the first fire department responder(s) to provide patient care

Slide 6-21

Slide 6-22

L_2--HIGHEST LEVEL OF FIRE DEPARTMENT PROVIDER

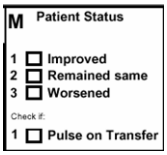


Identifies the highest level of fire department care that the patient received at the scene

Slide 6-22

Slide 6-23

M--PATIENT STATUS

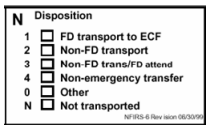


Identifies the change in mental or physical status of the patient at the time responsibility for patient care was transferred to another agency

Slide 6-23

Slide 6-24

N--DISPOSITION



Describes whether or not the patient was transported from the scene and who provided the transport

Slide 6-24

Slide 6-25

Activity 6.1
Completion of Emergency Medical Services Module

Slide 6-25

Slide 6-26

SUMMARY

- **The EMS Module (NFIRS 6) is used to report all medical incidents to which a fire department responds, except:**
  - **Civilian Fire Casualties (NFIRS 4).**
  - **Fire Service Casualties (NFIRS 5).**
- **When an "Incident Type" in the 300 series is reported on the Basic Module, the EMS Module also should be completed.**

Slide 6-26

Slide 6-27

QUESTIONS?

Slide 6-27

UNIT 7: HAZARDOUS MATERIALS MODULE--NFIRS 7

OBJECTIVES

The students will be able to:

1. *Describe when the HazMat Module is to be used.*

2. *Given the scenario of a hypothetical incident, demonstrate how to complete the HazMat Module and identify other appropriate modules.*

HAZMAT MODULE--NFIRS 7

The "optional" HazMat Module is used when the Basic Module (Block H3--Hazardous Materials Release) indicates "other" for hazardous material. Its purpose is to document **reportable** haz mat incidents. A reportable haz mat incident is one in which:

- specialized haz mat resources were dispatched or used, or should have been dispatched or used, for assessing, mitigating, or managing the situation; or

- releases or spills of hazardous materials exceed 55 gallons.

Nothing in this definition is meant to alter compliance with State or local haz mat reporting requirements. In States with mandatory reporting, the State legislature determines which optional modules (EMS, HazMat, Wildland, etc.) are to be submitted to the State.

The HazMat Module permits hazardous materials incidents to be profiled in depth for incident-management analysis and response-strategy development. It collects relevant information on:

- hazardous materials identification;
- container information;
- release amounts and location;
- actions taken; and
- mitigating factors.

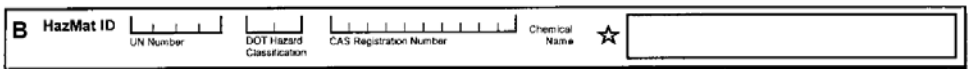
If more than one hazardous material is involved, one module is completed for each haz mat released. Note that the term "release" is intended to include a spill.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure, Haz Number

This information is essentially the same as that which is collected on the Basic Module. The one exception is the "Haz Number." As noted above, if more than one haz mat are involved, one module is completed for each haz mat released.

These modules are sequentially numbered in the field "Haz Number" in Section A, starting with "00" for the first chemical, "01" for the second, and so forth.

Section B: HazMat ID



The purpose of Section B is to identify the specific hazardous materials involved in an incident as accurately as possible. Several different identification systems have been developed that can aid fire department personnel with identifying hazardous materials:

- United Nations (UN) Number;
- Department of Transportation (DOT) Hazard Classification;
- Chemical Abstract Service (CAS) Registration Number;
- chemical identifier; and
- chemical name.

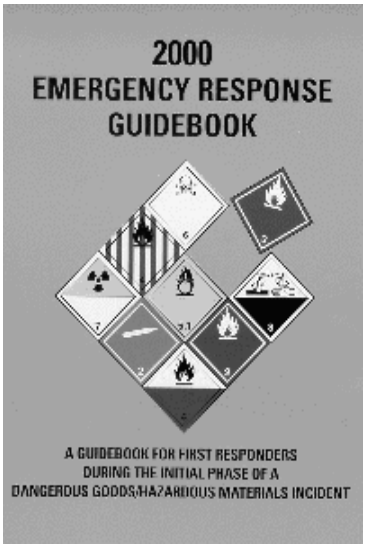
Not all of these systems need to be used to identify the hazardous materials. In fact, in an automated system, many of these data elements are cross-referenced in the database. Thus, the entry of one piece of information may cause the system to populate some or all of the other haz mat identification fields.

Example: If the CAS Number is known and entered, the system will populate all other HazMat ID fields without any further lookup being necessary.

Those chemicals listed in the U.S. Fire Administration (USFA) publication, *Hazardous Materials Guide for First Responders*, are cross-referenced in an appendix of the NFIRS *Handbook*.

In some cases, it may take more than one piece of information to identify a hazardous material accurately.

Example: The UN Number does not necessarily identify a specific chemical. Thus, in cases where the UN Number is used, it must be in conjunction with the chemical or trade name for the specific chemical to be identified accurately.



The **UN Number** is a four-digit number assigned to the hazardous material that conforms to UN standards for the identification of hazardous materials in international transportation. These numbers may be found in a variety of reference materials, including the *North American Emergency Response Guidebook* (NAERG) published by the Research and Special Programs Administration, of the DOT, and the *Hazardous Materials Guide for First Responders* published by the USFA.

In some cases, a single UN Number will be assigned to several materials with similar properties. Not all hazardous materials have been assigned UN Numbers.

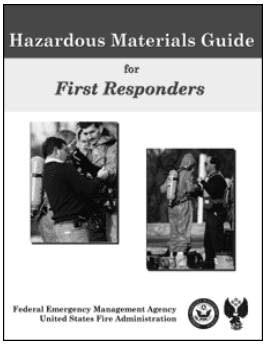
DOT Hazard Classification Codes

	Class 1 - Explosives
11	Division 1.1 Explosives with mass explosion hazard
12	Division 1.2 Explosives with projectile hazard
13	Division 1.3 Explosives w/ predominant fire hazard
14	Division 1.4 Explosives with no significant blast
15	Division 1.5 Very insensitive explosives; blasting
16	Division 1.6 Extremely insensitive detonating articles
	Class 2 – Gases
21	Division 2.1 Flammable gases
22	Division 2.2 Non-flammable
23	Division 2.3 Gases toxic by inhalation
24	Division 2.4 Corrosive gases (Canada)
	Class 3 - Flammable/Combustible Liquids
30	Flammable/Combustible Liquids
	Class 4 - Flammable Solids
41	Division 4.1 Flammable solids
42	Division 4.2 Spontaneously combustible materials
43	Division 4.3 Dangerous when wet materials
	Class 5 - Oxidizers and Organic peroxides
51	Division 5.1 Oxidizers
52	Division 5.2 Organic peroxides
	Class 6 – Toxic materials and Infectious Substances
61	Division 6.1 Toxic materials
62	Division 6.2 Infectious substances
	Class 7 - Radioactive materials
70	Radioactive materials
	Corrosive materials
80	Corrosive materials
	Class 9 - Miscellaneous dangerous goods
91	Division 9.1 Miscellaneous dangerous goods (Canada)
92	Division 9.2 Environmentally hazardous substances (Canada)
93	Division 9.3 Dangerous wastes (Canada)

The primary hazard associated with various hazardous materials categories is described by the **DOT Hazard Classification** system. It is used on placards or labels during transportation. Since many materials have multiple hazards, the DOT Hazard Classification may not describe all of the potential hazards faced by emergency responders at a haz mat incident.

Firefighter Safety Study Act of 1990

Public Law 101-446, the Firefighter Safety Study Act of 1990, directs the Administrator of the USFA to consult and coordinate a review of information available to first responders with government agencies, private sector firms, and first responders. The goal of these efforts is to improve the accuracy and suitability of response guidance so that safer and more effective responses to hazardous materials incidents can be conducted at the State and local level.



The ***Hazardous Materials Guide for First Responders*** is the result of an extensive study of available hazardous materials response resources for first responders undertaken by the USFA as part of the Firefighter Safety Study Act. The study concluded that, while several excellent and technically accurate resources are available, none is directed to the specific needs of the first responder trained at the Awareness or Operational Levels of Training, the training levels of most first responders.

This book provides important information for the initial response to both transportation and fixed facility incidents. It has been designed to present the first responder with a maximum amount of useful key information in a limited amount of space. As with any reference, it cannot include all information that might be useful or discuss all situations that might occur, nor can it replace the training and experience of individual responders. The information contained in this book has been reviewed by several sources and is as technically accurate as possible. For major incidents, it will be necessary to obtain more detailed information from other resources as well as more advanced expertise from those with training that is more extensive.

Order Information

Fire service personnel and other first responders may order the *Hazardous Materials Guide for First Responders* in paper copy or CD-ROM formats from the USFA Publications Center (http://www.usfa.fema.gov/applications/publications).

The *Guide* also may be purchased from the United States Department of Commerce, National Technical Information Service (NTIS) by calling:

1-800-553-NTIS (6847) or
(703) 605-6000
Order number (Hardcopy): AVA-20342-BB00
Order number (CD-ROM): AVA20831-CDRM

The DOT Hazard Classification consists of a single-digit hazard-class code followed by a decimal point and a single-digit code for the division. For the purpose of documentation, this two-part hazard class/division code has been converted to a two-digit code. The proper entry in this field is the two-digit code that corresponds with the hazard classification and division as found on a placard or label.

By itself, the DOT hazard class and division does not identify a specific chemical. To do so, it must be used in conjunction with the chemical or trade name or the CAS Number.

The **CAS Registration Number** is the identification number assigned to a chemical by the Chemical Abstract Service of the Chemical Abstract Society. This number may be found in reference materials, on Material Safety Data Sheets (MSDS's), and on some product labels. Not all hazardous materials have an assigned CAS Number.

In an automated system, it is intended that the entry of the CAS Registration Number would populate all other HazMat ID fields without any further lookup being necessary.

The **chemical name** is the standard chemical or trade name by which the hazardous material is commonly known. Products from different manufacturers with similar chemical ingredients may have different trade names.

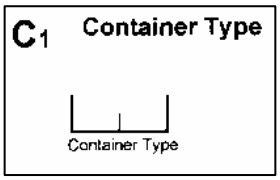
The proper entry in this field is the chemical or trade name of the hazardous material as shown on the MSDS, product label, packaging, or container.

Example: A common herbicide used for household applications may be entered by the trade name "Weed-B-Gone™" or by the chemical name "2,4-dichlorophenoxyacetic acid (2-4D)."

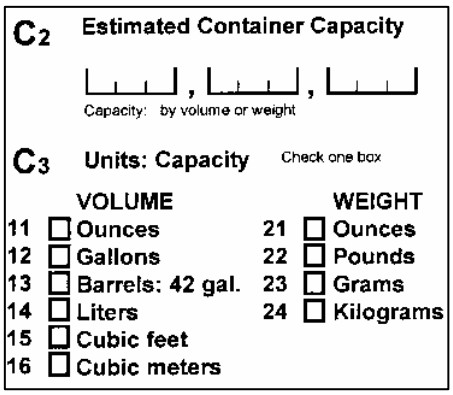
Section C: Container Information

Section C identifies the type or configuration of the container used to transport or to store the hazardous material and the amount of material the container was designed to hold. Complete information on the types of containers involved in haz mat incidents will provide guidance to regulators that establish container design requirements, and will aid in prevention and code-development efforts.

Block C1--Container Type--refers to the type or configuration of the container, equipment, or facility used to transport or to store the hazardous material. The proper entry is the two-digit code for the corresponding container type from the list provided in the NFIRS *Handbook* or *Quick Reference Guide* (QRG).



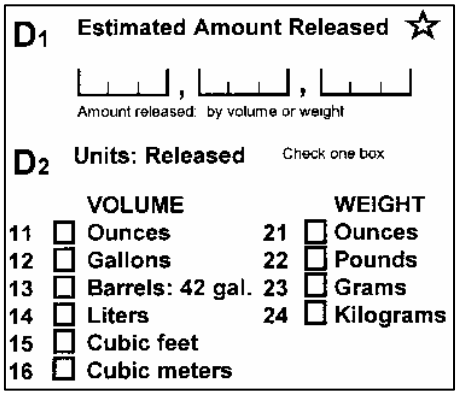
The estimated amount of material the container was designed to hold, by volume or by weight, is captured in C2. The container capacity is reported as two data elements. One is a numeric entry made in this block and expresses quantity.



The other defines the unit of measure--either volume or weight. It is documented by marking the appropriate box in block C3. Both must be reported for the data to be meaningful.

Section D: Estimated Release

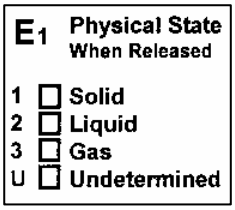
The quantity of hazardous materials released is also reported as two data elements. Again, both must be reported for the data to be meaningful. The estimated amount of material released from a container--by volume or by weight--is expressed as a whole number in D1.

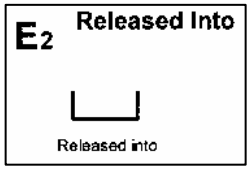


Marking one box in D2 identifies the appropriate unit of measure. Information on the amount of material released provides an important measure of the magnitude of the hazardous materials release problem.

Section E: Physical State When Released and Released Into

The simple physical state of the material (i.e., solid, liquid, gas, or undetermined) during release or when it became hazardous is captured in E1 by marking one box.





The purpose of E2 is to provide information on the general environmental impact and, when used in conjunction with other data elements, how extensive that impact is. This field identifies the general region(s) of the environment contaminated by the hazardous material after its release.

Released Into

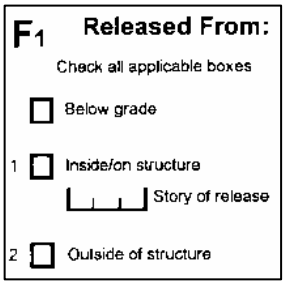
Enter the code that best describes the environment contaminated by the hazardous material.

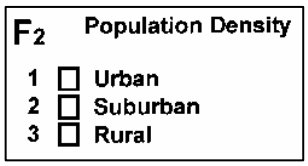
1 Air
2 Water
3 Ground
4 Water and ground
5 Air and ground
6 Water and air
7 Air, water, and ground
8 Confined, no environmental impact-not released into air, water or ground

If more than one hazardous material is involved in the incident, the remainder of the module is completed only for the first (most significant) material involved.

Section F: Released From

Information on the physical location from which the hazardous material was released is captured in block F1. Was the release below grade? Was it inside or outside a structure? If the release was inside (or on) a structure, on what story did it occur?



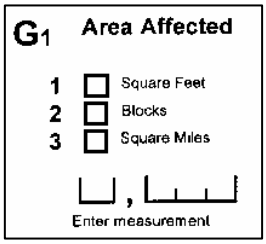


Block F2 records a general description of the population density in the area adjacent to the hazardous materials release. Was the release in an urban, suburban, or rural area?

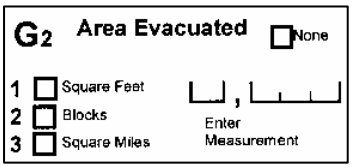
Section G: Area Affected, Area Evacuated, Estimated Number of People Evacuated, and Estimated Number of Buildings Evacuated

Information on the area affected by a hazardous materials release, when used in conjunction with other data elements, will assist in understanding the magnitude of the release. In turn, this information can be used to guide future training and incident management efforts.

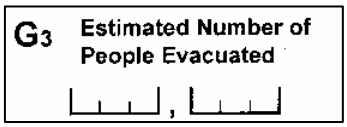
Block G1 captures the size of the area or space directly affected by the hazardous material release. The area affected is reported as two data elements. The first defines the unit of measurement. It is noted by marking a box for square feet, blocks, or square miles. The second is a numeric entry that expresses the actual measurement. Both must be reported for the data to be meaningful.

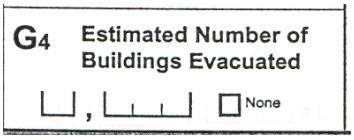


The area evacuated--block G2--refers to the amount of area or space evacuated because of the hazardous material release or potential release.



It is reported as two data elements--the first defines the unit of measurement and the second is numeric, expressing the actual measurement. Again, both entries must be made for the data to be meaningful.

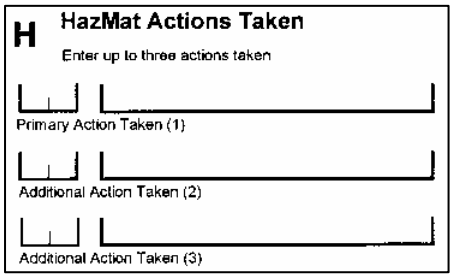




Block G3 collects data regarding the estimated number of people evacuated due to the hazardous material release or potential release. Block G4 notes that same kind of information for buildings.

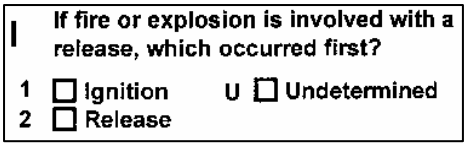
Section H: HazMat Actions Taken

There are particular actions taken at a hazardous material release incident scene by personnel specifically trained and equipped to mitigate the hazards that might arise. Up to three of the most significant haz mat actions taken can be documented on the lines in this section.



Note: Actions taken by fire service personnel who are not specifically trained and equipped to mitigate hazardous material incidents are recorded in the Basic Module.

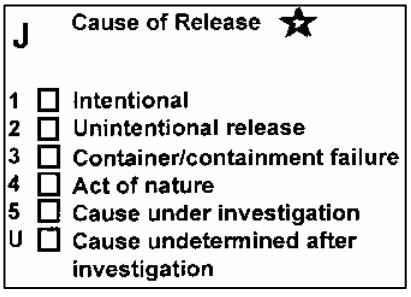
Section I: Fire or Explosion Involved With a Release



The purpose of this section is to collect information on the causal relationship of events occurring in situations where a fire or explosion is involved with a hazardous material release. Based on which box is marked, it may be possible to show which occurred first--the release or the fire/explosion.

Section J: Cause of Release

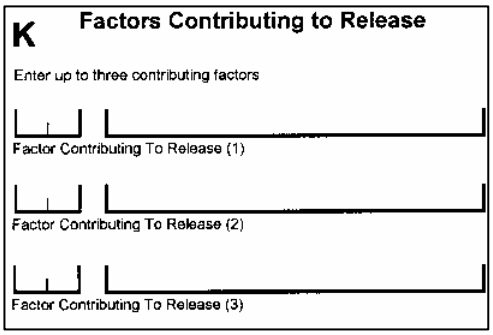
This required section documents the general cause of the release or threatened release of a hazardous material. Aggregate information on the cause of releases can be used to guide prevention and enforcement efforts.



Example: A hazardous materials release resulting from a rusted drum would be recorded as "Container/Containment failure."

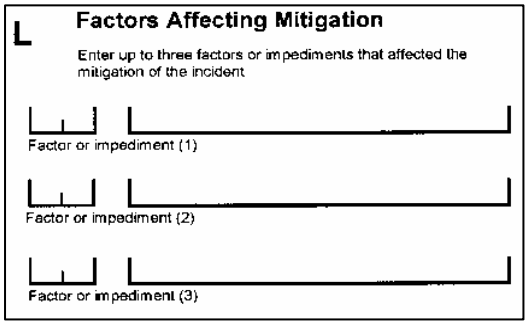
Section K: Factors Contributing to Release

Factors present at the time and location of the incident that contributed to the release or threatened release are recorded in this section. Up to three of the most significant contributing factors and their accompanying codes may be entered.



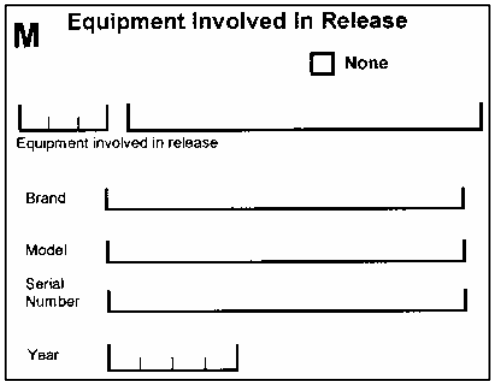
Section L: Mitigating Factors or Impediments

If there were factors that impeded the fire department's mitigation of the release or threatened release, the three primary ones present at the time and location of the incident are documented here.



This information is of particular importance in cases where delays in mitigating the incident may have contributed to the severity of the incident.

Section M: Equipment Involved in Release



Data regarding equipment that either failed or, while working properly, allowed the release or threatened release of hazardous materials are collected in this section. Lines are provided to note a description and code for the equipment and the relevant brand, model, serial number, and year.

Note: The code set table used for this data element is the same set that is used for Equipment Involved in Ignition--F1 in the Fire Module. Please see the codes listed for that data element in the NFIRS *Handbook* or QRG.

Information on the type of equipment involved in the release can be used to guide prevention, enforcement, and product design efforts. Specific information on the year, brand, and serial number will assist in product recall efforts.

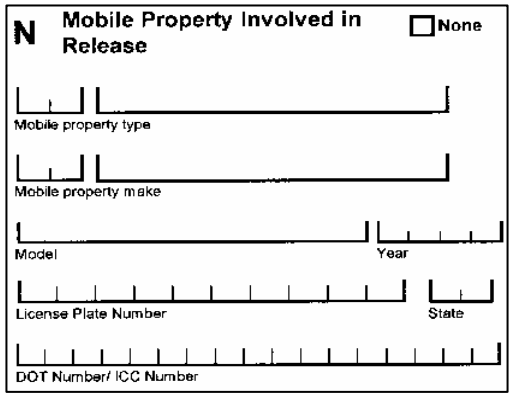
Section N: Mobile Property Involved in Release

Details regarding mobile property that either failed or, while working properly, allowed the release or threatened release of hazardous materials are recorded here. As noted above--regarding equipment--this information can be used in prevention, enforcement, and product design efforts.

Note: Depending on State and local laws, specific documentation on mobile property involved in the release of a hazardous material may assist the fire department in collecting reimbursement from the responsible party for the expenses incurred in mitigating the hazardous materials incident.

The mobile property type refers to property that is designed and constructed to be mobile--movable under its own power or towed. A description and code are entered to clarify the property type.

On the line requesting "Mobile property make," the property manufacturer is recorded.



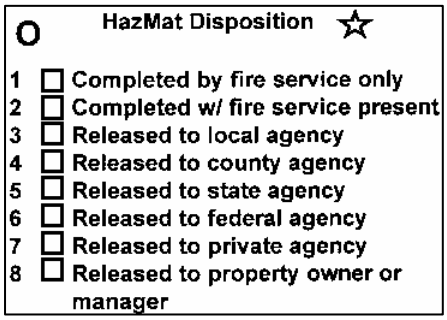
Model refers to the manufacturer's model name. If one does not exist, use the physical description of the property that is commonly used. Enter the year the property was manufactured.

If there is a license plate affixed to the mobile property, note the plate number and State on the next line.

The last line is used to enter the number assigned to the commercial carrier by the DOT. That number is generally found stenciled on the mobile property.

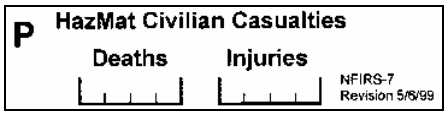
Section O: HazMat Disposition

This required section is used to indicate the agencies that participated in disposition of this haz mat incident. This information will assist in understanding the extent to which the fire department is involved in resolving the incident and the frequency with which other agencies or contractors are used for incident mitigation.



Section P: HazMat Civilian Casualties

Data on the number of civilians killed or injured because of their contact with or exposure to hazardous materials that have been spilled or released are collected in this section. This information will provide a concise measure of the scope of human costs associated with haz mat incidents.



One entry is made to record the number of civilian deaths and the number of civilian injuries because of their contact or exposure to the hazardous material.

The Civilian Fire Casualty Module (NFIRS-4) should **not** be used for this purpose unless the release resulted in a fire and the civilian(s) were injured or killed because of the fire. Instead, an EMS Module (NFIRS-6) can be completed for each non-fire-service person killed or injured because of contact with, or exposure to, hazardous materials.

The Fire Service Casualty Module (NFIRS-5) should be completed for each fire service member killed or injured because of contact with, or exposure to, hazardous materials.

Activity 7.1

Completion of HazMat Module

Purpose

To complete the HazMat Module correctly and to identify other modules that should be completed, and by whom, based on the information provided.

Directions

1. Work with your small group to complete the HazMat Module that accurately describes the hypothetical scenario. Note: FDID, dates and times will be provided by your instructor, as necessary.

2. Identify, by name, the other NFIRS modules that should be completed and who would complete each one.

3. Allow 20 minutes to complete the module, identify other modules, and be prepared for class discussion.

Scenario

At 0630 hours on Monday, May 10, 2004, the Tallahassee Fire Communications Center (FDID TR100) was notified that a cargo tanker had overturned on the southbound off-ramp from the 5th Street Bridge to Highway 287, Tallahassee, FL 32301. The Communications Center assigned Number 2436 to the incident and dispatched two engines and one truck company (each with a crew of three), a rescue unit (two crew members), and a battalion chief. While en route, the dispatcher advised responding units that numerous calls were being received from the residential subdivision south of the incident. Citizens were reporting a foul odor and individuals who were having difficulty breathing.

At 0636 hours, Engine 2 arrived on the scene and reported that a 6,000-gallon MC-307 cargo tanker had rolled on its side and was spilling its load down the street and into the river (a four-block area). Engine 2 further reported that the tanker had a placard bearing the UN ID #1092. The *DOT Emergency Response Guide* was used to identify the material as Acrolein, Inhibited. The truck driver was trapped in the vehicle and considered either unconscious or dead. Engine 2 requested that the Gorman County Hazardous Materials Response Team (FDID 08900) and a private ambulance with two personnel be dispatched.

Upon his arrival at 0640 hours, the Battalion Chief ordered an evacuation of, at least, 600 feet in all directions. He also requested that the police department evacuate a downwind area 1.5 miles in width and 3 miles in length. Approximately 200 homes in this suburban area and approximately 600 people were affected by the evacuation order. The Battalion Chief also requested that six more private ambulances with two persons each be dispatched to a staging area, and ordered both highways shut down to traffic. Two additional engines each with a crew of three were dispatched to assist with the evacuation. Fire department personnel established a decontamination area and deployed protective hoselines while awaiting the haz mat response team.

About 30 minutes later, the two-unit, 12-member haz mat response team arrived and assumed operational control of the incident. (Their incident number was 226.) Over the next 6 hours, the haz mat team contained the spill by placing dikes in the street, absorbent booms in the river, and stopped the leak by securing the dome cover. The driver (who apparently died from inhalation of the vapors) was removed, decontaminated, and released to the coroner. The incident was declared under control at 1310 hours.

Eventually, the tanker was off-loaded by a private contractor and was righted. A vacuum truck and absorbent materials provided by a private contractor were used to remove the remaining chemical hazard from the street and river. It was estimated that 1,000 gallons of Acrolein was released because of the incident. A total of 16 civilians and two police officers complaining of respiratory distress were transported to the hospital by private ambulances. Fire department personnel suffered no casualties. The haz mat team left the scene at 1525 hours and the last fire department unit cleared the scene at 1530 hours.

Upon investigation, the State Police determined that the driver lost control of the tanker when he was exiting onto the off-ramp at an excessive speed. Part of the problem was that the brakes failed to operate properly. The driver, William Harris, lived in Tallahassee, 101 N. 14th Street 32312.

Notes on Activity Debriefing

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SUMMARY

The optional HazMat Module is used to document reportable haz mat incidents. For an incident to be reportable, it generally requires that

- specialized haz mat resources either were or should have been dispatched or used; or
- releases or spills of hazardous materials exceeded 55 gallons.

The need to comply with State or local haz mat reporting requirements is not altered by the completion of this module.

Accurate data from the HazMat Module can provide indepth information that can be used for management analysis and for response strategy development.

NOTE-TAKING GUIDE

Slide 7-1

UNIT 7:
HAZARDOUS MATERIALS MODULE--NFIRS 7

Slide 7-1

Slide 7-2

NFIRS 7--HAZARDOUS MATERIALS MODULE

Slide 7-2

Slide 7-3

OBJECTIVES

The students will be able to:

- **Describe when the HazMat Module is to be used.**
- **Given a scenario of a hypothetical incident, demonstrate how to complete the HazMat Module and identify other appropriate modules.**

Slide 7-3

Slide 7-4

PURPOSE OF HAZMAT MODULE

- **The purpose of the Hazardous Materials Module is to document REPORTABLE haz mat incidents.**
- **Used when the Basic Module, Block H, Hazardous Materials Release, indicates "other."**

Slide 7-4

Slide 7-5

DEFINITION OF REPORTABLE HAZMAT INCIDENT

A REPORTABLE haz mat incident occurs when:

- **Specialized haz mat resources were used or should have been used for managing the situation**
- **Releases or spills of hazardous materials exceeded 55 gallons**
- **As otherwise required**

Slide 7-5

Slide 7-6

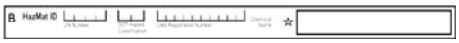
A--HEADER INFORMATION

- **Identifies the responding department and incident being reported**
- **Exposure--If haz mat release was in connection with a fire and release was in an exposure property**
- **HazMat Number--A separate sequential number assigned to each material**

Slide 7-6

Slide 7-7

B--HAZMAT ID



- **Used to identify specific haz mat involved in the incident.**
- **Several different identification systems, but not all needed to identify the haz mat.**
- **In an automated system, many elements are cross-referenced; entry of one may populate other fields.**

Slide 7-7

Slide 7-8

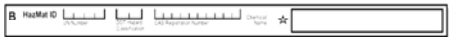
B--UN NUMBER

- **Four-digit number assigned to haz mat (using United Nations standards).**
- **Found in a variety of sources:**
  – *North American Emergency Response Guidebook.*
  – *Hazardous Materials Guide for First Responders.*
- **A single UN Number can be assigned to multiple materials.**

Slide 7-8

Slide 7-9

B--DOT HAZARD CLASSIFICATION



- **Describes the primary hazard associated with various hazardous materials.**
- **Department of Transportation (DOT) Hazard Class and Division are combined into a two-digit code.**
- **Does not identify a specific chemical--must be used with other identifier(s).**

Slide 7-9

Slide 7-10

B--CAS REGISTRATION NUMBER

- **Identification number assigned to a chemical by Chemical Abstract Service (CAS) of the Chemical Abstract Society.**
- **Not all haz mats have an assigned CAS.**

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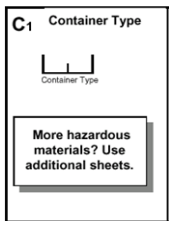
B--CHEMICAL NAME ☆

- **Standard chemical or trade name by which the hazardous material is known.**
- **Products from different manufacturers with similar chemical ingredients may have different trade names.**
- **Proper entry is the chemical or trade name of the hazardous material.**

Slide 7-11

Slide 7-12

C1--CONTAINER TYPE

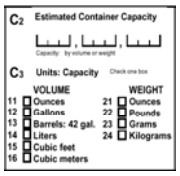


Identifies the type or configuration of the container, equipment, or facility used to transport and/or store the hazardous material.

Slide 7-12

Slide 7-13

C2 /C3--ESTIMATED CONTAINER CAPACITY & UNIT OF MEASURE

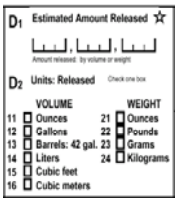


- **The amount of material the container was designed to hold**
- **Reported as two data elements:**
  - **– Quantity**
  - **– Unit of Measure**

Slide 7-13

Slide 7-14

D1/D2--ESTIMATED AMOUNT RELEASED ☆ & UNIT OF MEASURE



- **The amount of material released from a container**
- **Reported as two data elements:**
  - **– Quantity**
  - **– Unit of Measure**

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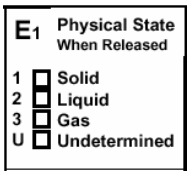
Slide 7-15

E1--PHYSICAL STATE WHEN RELEASED



The simple physical state of the material during release or when it became hazardous

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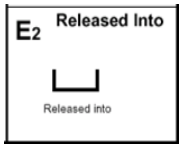
Slide 7-16

E2--RELEASED INTO



Describes the environment contaminated by the hazardous material after release (air, water, ground)

Slide 7-16

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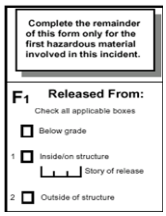
F1--RELEASED FROM



Identifies the physical location from which the haz mat was released

- **Above grade**
- **Below grade**
- **Inside or outside of a structure**

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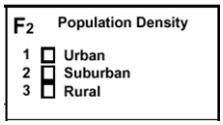
Slide 7-18

F2--POPULATION DENSITY



General description of the population density in the area adjacent to the hazardous materials release

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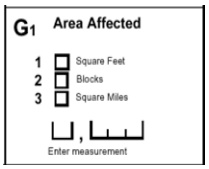
Slide 7-19

G1--AREA AFFECTED



Indicates the amount of area or space directly affected by the hazardous material release

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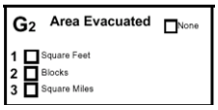
G2--AREA EVACUATED

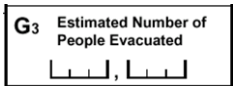


Identifies the measure and size of the area evacuated as a result of the hazardous materials release (or potential release)

Slide 7-20

Slide 7-21

G3--ESTIMATED NUMBER OF PEOPLE EVACUATED

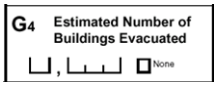


The estimated number of people evacuated as a result of the hazardous materials release (or potential release)

Slide 7-21

Slide 7-22

G4--ESTIMATED NUMBER OF BUILDINGS EVACUATED

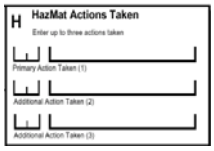


The estimated number of buildings evacuated as a result of the hazardous materials release (or potential release)

Slide 7-22

Slide 7-23

H--HAZMAT ACTIONS TAKEN

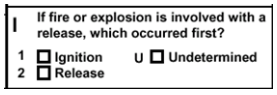


- **The particular actions taken to mitigate a hazardous materials incident**
- **Enter up to three actions taken**

Slide 7-23

Slide 7-24

I--WHICH OCCURRED FIRST?



- **If fire or explosion is involved with a release--the indication of which occurred first.**
- **Did the haz mat release cause the fire or did the fire cause the haz mat release?**

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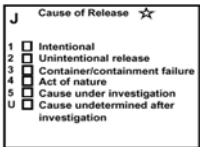
Slide 7-25

J--CAUSE OF RELEASE

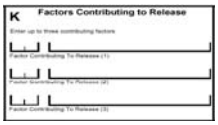


Identifies the cause of the situation that created the release (or potential release) of a hazardous material

Slide 7-25

Slide 7-26

K--FACTORS CONTRIBUTING TO RELEASE



Identifies the factors present that contributed to the release (or potential release) of a hazardous material

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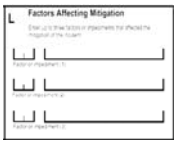
Slide 7-27

L--FACTORS AFFECTING MITICATION



- **Identifies factors present that affected management of the release (or potential release) of a hazardous material**
- **Enter up to three factors**

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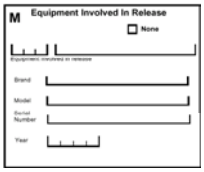
Slide 7-28

M--EQUIPMENT INVOLVED IN RELEASE



Identifies equipment that failed or otherwise allowed the release (or potential release) of hazardous materials

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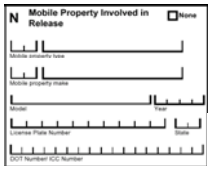
N--MOBILE PROPERTY INVOLVED IN RELEASE



Identifies mobile property that failed or otherwise allowed the release (or potential release) of hazardous materials

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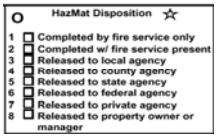
Slide 7-30

O--HAZMAT DISPOSITION ☆



Identifies the individual or entity, if any, that assumes control of the incident from the fire department

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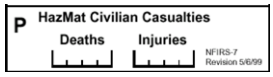
Slide 7-31

P--HAZMAT CIVILIAN CASUALTIES



- **The number of civilians injured or killed as a result of contact or exposure to a hazardous materials**
- **No Civilian Casualty Module required (if fire and haz mat injury, report as civilian fire casualty, not haz mat)**

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Slide 7-32

Activity 7.1
Completion of HazMat Module

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SUMMARY

The purpose of the optional HazMat Module is to document REPORTABLE haz mat incidents:

- **Specialized haz mat resources were used or should have been used for managing the situation.**
- **Releases or spills of hazardous materials exceed 55 gallons.**

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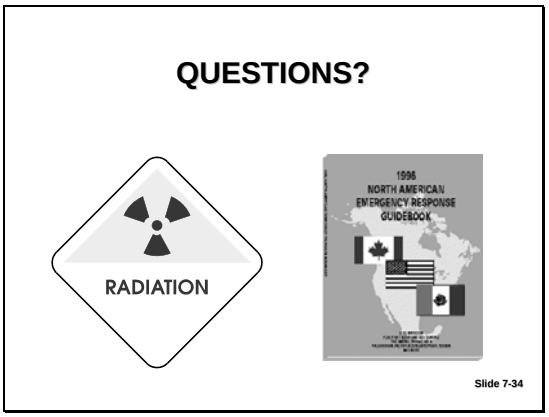
Slide 7-34


QUESTIONS?
RADIATION
1996
NORTH AMERICAN
EMERGENCY RESPONSE
GUIDEBOOK
Slide 7-34

UNIT 8:
WILDLAND FIRE MODULE--NFIRS 8

OBJECTIVES

The students will be able to:

1. *Describe when the Wildland Fire Module is to be used.*

2. *Given the scenario of a hypothetical incident, demonstrate how to complete the Wildland Fire Module.*

WILDLAND FIRE MODULE--NFIRS 8

Historically, NFIRS data have not proved useful in understanding the nature and magnitude of the wildland fire problem. The "optional" Wildland Module attempts to rectify this by capturing data about:

- the number of acres burned and the type of materials involved in these fires;
- conditions that contribute to the ignition and spread of wildland fires; and
- the resources needed to control and/or extinguish these fires.

The purpose of the Wildland Fire Module is to document **reportable** wildland fires. A reportable wildland fire is any fire involving vegetative fuels that occurs in the wildland or urban/wildland interface areas, including those fires that threaten or consume structures.

To understand better the role of fire in the wildland ecosystem, prescribed fires also are included in this definition of reportable fires.

For the purpose of wildland fire reporting, the following definitions are used.

- **Prescribed Fire**. Any fire ignited based on management orders to meet specific objectives. A written, approved prescribed fire plan must exist prior to ignition (Incident Type 632).

- **Urban/Wildland Interface Area**. The geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

- **Urban/Wildland Interface Fire**. Any fire, other than a prescribed fire, where fire suppression tactics were influenced by a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels (Incident Type 141).

- **Wildland Fire**. Any fire other than a prescribed fire, involving vegetative fuels present in the wildland; a wildland fire may expose and possibly consume structures (Incident Type 141).

- **Wildland**. An area in which development is essentially non-existent, except for roads, railroads, power lines, and similar facilities.

The Wildland Fire Module permits wildland fires to be profiled in depth for resource allocation, incident management, and fire impact analysis. In addition, aggregated data on wildland fires will provide invaluable information that can be used by policymakers in developing codes and standards, zoning ordinances, and forest management plans.

Wildland Fire Module Use

The "optional" Wildland Fire Module is used when the Incident Type is coded as Forest, Woods, or Wildland Fire (Incident Type 141), or a Prescribed Fire (Incident Type 632). In these cases, the Wildland Fire Module would be used in lieu of the Fire Module.

The Wildland Fire Module also may be used for the following Incident Types:

- 140--Vegetation Fire, Other;
- 142--Brush, or Brush and Grass Mixture Fire;
- 143--Grass Fire;
- 160--Special Outside Fire;
- 170--Cultivated Vegetation, Crop Fire, Other;
- 171--Cultivated Grain, Crop Fire;
- 172--Cultivated Orchard or Vineyard Fire;
- 173--Cultivated Trees or Nursery Stock Fire;
- 561--Unauthorized Burning; and
- 631--Controlled Burning (Authorized).

Controlled Burning versus Prescribed Fire

Incident Type 631, "Controlled Burning," is used for fires where the burning is authorized and under control. Controlled burns are typically "agricultural" in nature and managed by the property owner. In order to meet the definition of a Prescribed Fire (Incident Type 632), a written, approved prescribed fire plan must exist prior to ignition. These fires are typically carried out by a wildland management agency.

Both types of fires are considered nonhostile, and both presume that the Environmental Protection Agency (EPA) requirements are met prior to ignition.

A prescribed fire that escapes management's control is a hostile fire--Incident Type is 141 (Wildland Fire). A hostile fire cannot become a prescribed fire, but the management strategy (actions taken) may change.

If it does not have a written, approved prescribed fire plan *prior* to ignition, it is not a prescribed fire, regardless of how it is managed (or how many times it escapes control). How the hostile fire is managed is the action taken.

Activity 8.1

Controlled Burning versus Prescribed Fire

Purpose

To code different scenarios.

Directions

Decide how the scenarios below should be coded.

Scenario 1

A prescribed fire, managed initially, escapes management control.

Scenario 2

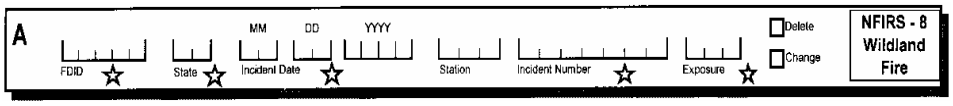
A fire that occurs in an area where a managed burn was planned and where a written approved fire plan exists prior to the ignition.

Scenario 3

A hostile fire (nonprescribed) that occurs in an area where a managed burn was planned and is managed as a prescribed fire, but the fire escapes management control and again becomes hostile.

Notes on Activity Debriefing

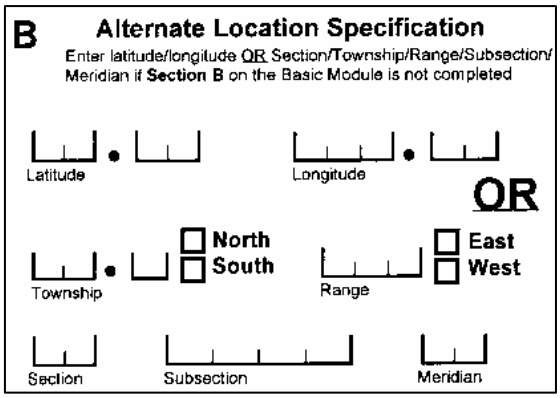
Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure



This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of an incident. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required.

Section B: Alternate Location Specification

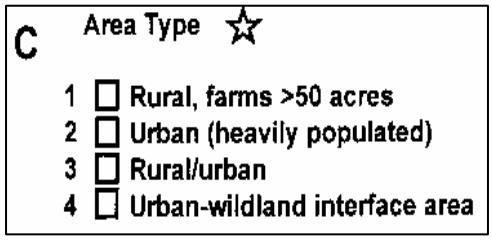
This section documents the geographical location of the wildland fire. It is used in place of Section B of the Basic Module when traditional addressing methods are not suitable.



Either the latitude/longitude of the fire location OR the Township, Range, Section, Subsection, and Meridian are entered.

This information may be of value to local authorities for contacting the owner in connection with the fire and in making a long-term analysis of wildland fires in similar areas or on property under the same ownership.

Section C: Area Type

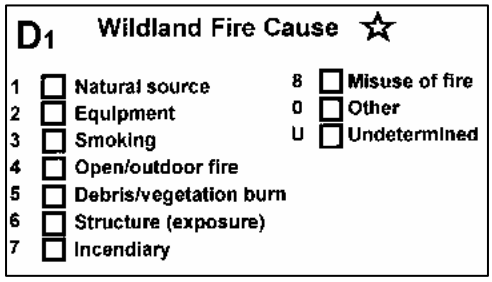


This required section is a general description of the area in which the wildland fire occurred. By marking the appropriate box, it even allows for documentation of fires occurring in urban/wildland interface areas.

Aggregate information on the areas where wildland fires occur will help determine the level of risk for fires in densely populated areas versus those in rural areas.

Section D: Wildland Fire Cause, Human Factors Contributing to Ignition, and Fire Suppression Factors

Block D1 provides factors contributing to ignition, for the broadest classification of ignition causes consistent with the "General Fire Causes" adopted by the National Wildfire Coordinating Group (NWCG). The primary use of this information is to distinguish between human and nature-caused wildland fires.

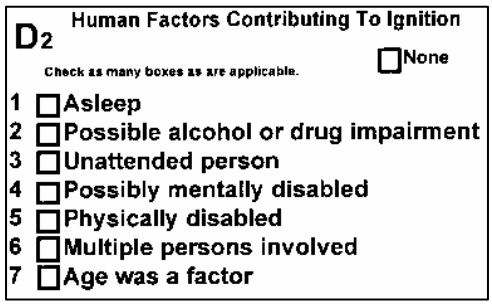


The classification of Wildland Fire Cause represents a significant departure from the coding scheme used in the Fire Module where a combination of "Cause of Ignition" and "Factors Contributing to Ignition" are used to describe how and why the fire started. In fact, in some cases, the Wildland Fire Cause is not a "cause" at all, but an incident type or a factor contributing to ignition. This peculiarity is best illustrated by examining the following list of Wildland Fire Causes and their relationship to the Fire Module "Causes of Ignition":

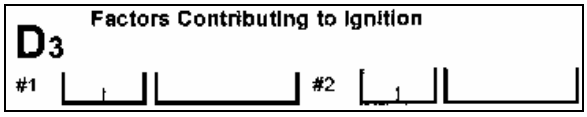
Wildland Fire Cause	Relationship to NFIRS 2 Cause of Ignition
1 Natural Source	**4 Act of Nature**
2 Equipment	**3 Failure of Equipment or Heat Source**
3 Smoking	**2 Unintentional**
4 Open or Outdoor Fire	**Incident Type would be Outside Fire (wildland fire would be exposure)**
5 Debris/Vegetation Burn	**2 Unintentional (Factors Contributing would be outside/open fire for debris or waste disposal**
6 Structure	**Incident Type would be Structure Fire (wildland fire would be exposure)**
7 Incendiary	**1 Intentional**
8 Misuse of Fire	**1 Intentional (or 2, Unintentional)**
9 Other Causes	**5 Cause under investigation**
0 Undetermined	**U Cause undet. after investigation**

"Wildland Fire Cause" is the only causal information required when using the Wildland Fire Module. However, completion of the additional blocks provides a better understanding of how and why the fire started. In turn, this information can be used to target fire safety education and fire prevention programs.

Block D2 offers a number of options to record human factors that might contribute to the ignition of a fire. All of the applicable factors are selected by marking the appropriate boxes.



The data element "Age was a factor" is particularly useful in tracking juvenile firesetter trends. When used in combination with L2--Gender of Person Involved, and L3--Age or Date of Birth, it can help define who was involved with the fire.



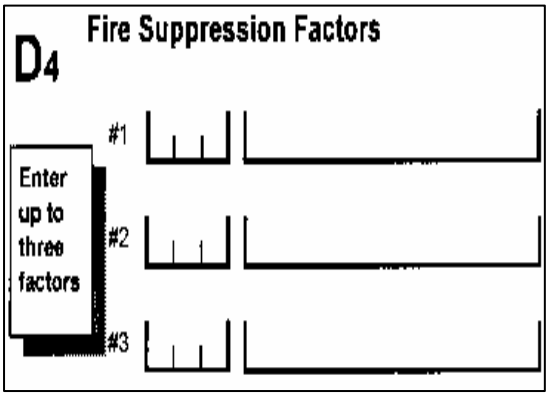
Block D3 notes conditions or situations that contributed to the ignition of the fire. These factors help to clarify how a heat source and combustible material combined to start a fire. Up to two factors can be recorded, or if appropriate, "NN" can be selected. In several instances, the unique classification of Wildland Fire Causes limits the range of Factors Contributing that can be used.

Example: If the Wildland Fire Cause is recorded as "Smoking," the Factor Contributing to Ignition should be 11--Abandoned or Discarded Materials or Products.

Example: If the Wildland Fire Cause is recorded as "Structure," the Factor Contributing to Ignition should be 71--Exposure.

Factors Contributing to Ignition, when used in conjunction with other elements such as Wildland Fire Cause, Equipment Involved in Ignition, Heat Source, and Human Factors, describe how and why the fire started. The analyses of how these elements interact provide valuable information to guide and direct fire prevention and fire safety education programs.

- **The code set table used for this data element is the same set that is used for Factors Contributing to Ignition--E2 in the Fire Module. Please see the codes listed for that data element in the NFIRS *Handbook* or *Quick Reference Guide* (QRG).**



Block D4 is used to document factors or conditions that affected the fire suppression effort or that affected the fire management strategy. Up to three factors or conditions that constituted a significant fire suppression problem or affected the means in which the fire was managed can be entered here.

- **The code set table used for this data element is the same set that is used for Fire Suppression Factors--G in the Fire Module. Please see the codes listed for that data element in the NFIRS *Handbook* or QRG.**

Activity 8.2

Wildland Fire Suppression Factors

Purpose

To determine how different scenarios can be coded.

Directions

Determine how the scenarios below would be coded.

Scenario 1

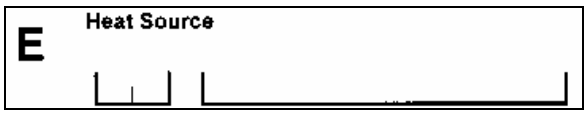
A large brush fire was burning on a military installation in an area where unexploded munitions could be encountered. The Incident Commander (IC) decided the best course of action was to allow the fire to burn, but to establish a control line outside the perimeter of the installation.

Scenario 1

A wind-driven wildfire was rapidly approaching a group of homes that had been evacuated earlier. Access to the homes was poor, they had no defensible space to speak of, and the water supply was inadequate. The decision was made that the homes were indefensible and the strategy of an indirect attack on the fire would be continued.

Notes on Activity Debriefing

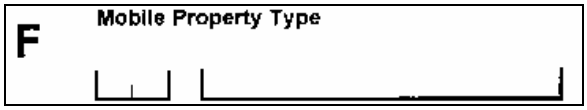
Section E: Heat Source



This refers to the specific source of the heat energy that started the fire. Examples include cigarette, cigarette lighter, match, or spark. Enter a code from the NFIRS *Handbook* or the QRG.

- **The code-set table used for this data element is the same set that is used for Heat Source--D2 in the Fire Module. Please see the codes listed for that data element in the NFIRS *Handbook* or QRG.**

Section F: Mobile Property Type

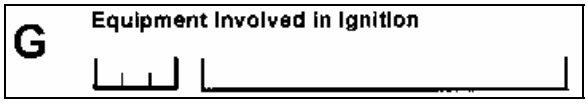


Mobile Property Type refers to property that is designed and constructed to be mobile, movable under its own power, or towed. Details regarding mobile property that either: (a) failed; (b) was used improperly; **or** (c) while working properly provided the principal heat that caused ignition, is collected in this section. If no mobile property was involved in ignition, this section should be left blank.

Specific information on the year, brand, and serial number of mobile property involved in ignition is not **documented in the Wildland Fire Module. If this level of detail is desired, the Fire Module must be used.**

- **The code-set table used for this data element is the same set that is used for Mobile Property Type--H2 in the Fire Module. Please see the codes listed for that data element in the NFIRS *Handbook* or QRG.**

Section G: Equipment Involved in Ignition



This section allows for the documentation of equipment that provided the principal heat that caused ignition. The same type of information as noted above in Mobile Property Type can be recorded. If no equipment was involved in ignition, this section should be left blank.

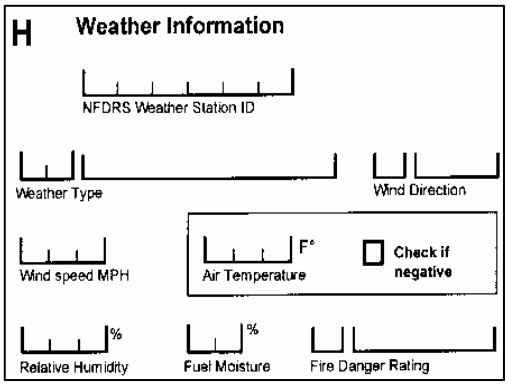
Specific information on the year, brand, and serial number of equipment involved in ignition is not **documented in the Wildland Fire Module. If this level of detail is desired, the Fire Module must be used.**

- **The code set table used for this data element is the same set that is used for Equipment Involved in Ignition--F1 in the Fire Module. Please see the codes listed for that data element in the NFIRS *Handbook* or QRG.**

Information on the type of equipment involved in ignition can be used to guide prevention, enforcement, and product design efforts.

Section H: Weather Information

The six-character ID number of the National Fire Danger Rating System (NFDRS) Weather Station that monitors weather conditions at the location of fire origin is recorded in the NFDRS Weather Station ID field. Researchers can use this information to obtain specific weather data for the time and location of the fire origin.



If the NFDRS Weather Station ID is known, researchers will be able to access the NFDRS database to perform later analysis of wildland fires using weather data.

Specific weather data permit analysis of those conditions that may have contributed to the fire cause or spread.

The weather type field is used to record a general description of the weather type at the time and location of fire origin. A choice is made from the following list:

Weather Type

10 Clear: less than 1/10 cloud cover
11 Scattered clouds: 1/10 to 5/10 cloud cover
12 Broken clouds: 6/10 to 9/10 cloud cover
13 Overcast: 9/10 or more cloud cover
14 Foggy
15 Drizzle or mist
16 Raining
17 Snow or sleet
18 Shower
19 Thunderstorm in progress
00 Other weather type

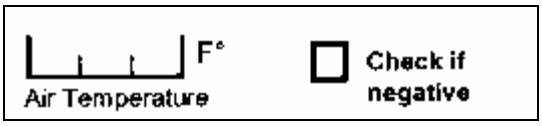
The direction from which the wind was blowing at "eye level" is noted in the wind direction field.

Example: A north wind blows out of the north and would push a fire to the south.

This information helps in the investigation of fire causes as well as determining the rate of spread and direction of a fire.

The wind speed MPH field captures the wind speed at the fire origin when fire suppression forces arrived. The average wind speed (to the nearest mile-per-hour) at the fire origin is entered. Wind speed may be measured using an anemometer or may be obtained from the weather station. Calm conditions are recorded as "0."

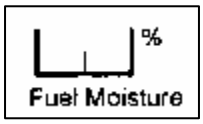
Wind speed is possibly the most important factor affecting the rate of fire spread at an incident. This information is used to understand and predict fire behavior as well as to evaluate fire protection strategies.



The air temperature field documents the ambient air temperature in degrees Fahrenheit at the time and location of fire origin.

Information about air temperature is used in fire modeling to assess the potential for ignition and to understand problems associated with suppressing fires in various weather conditions.

Relative Humidity is a measurement of the ratio of the amount of water vapor to the greatest amount possible at the same temperature. The relative humidity at the time and location of fire origin is recorded in this space. It is expressed as a percentage from 0 to 100 percent. Information about relative humidity is used in fire modeling to assess the potential for ignition and rate of spread under various weather conditions.



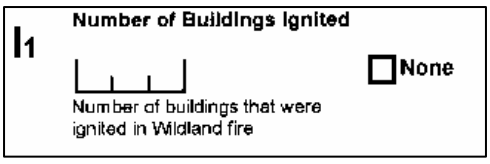
The fuel moisture field captures fuel moisture expressed as a percentage of total weight (generally ranging from 0 to 25 percent). Fuel moisture refers to the 10-hour reading of the moisture content of a fuel stick taken in the general area of the fire origin. Information about fuel moisture is used in fire modeling to assess the potential for ignition and rate of spread for different fuels under various weather conditions.

The fire danger-rating field is used to record the Fire Danger Rating. It refers to one method of describing the wildfire threat in a particular area, based on the National Fire Danger Rating System. It is derived from both constant and variable fire danger factors that affect the ignition, spread, and difficulty of control of fires and the damage they cause.

Factors considered when estimating the fire danger are temperature, relative humidity, wind speed, fuel type, and fuel moisture.

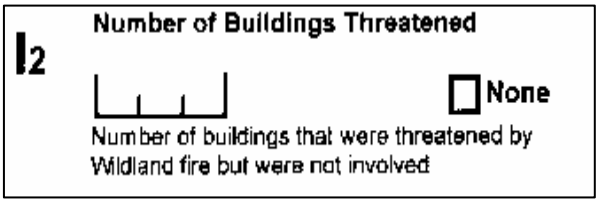
This information is used in fire prevention activities to determine when fires are most likely to occur and to determine their severity. "Burning bans" and park or forest closures or restrictions may be invoked based on the Fire Danger Rating. It is also useful in presuppression planning to determine staffing levels and critical initial attack times.

Section I: Number of Buildings Ignited, Number of Buildings Threatened, Total Acres Burned, and Primary Crops Burned

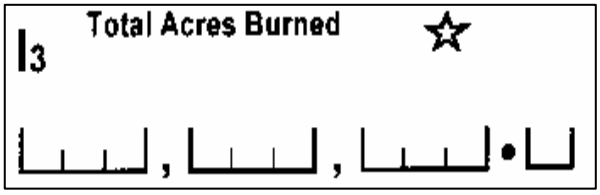


Block I1 records the total number of buildings, if any, that were ignited in the wildland fire. A fire exposure report should be completed for each fire exposure.

If buildings were threatened, but not ignited in the wildland fire, that number is noted in block I2. This entry implies that these buildings were "saved" by the efforts of fire suppression resources. Therefore, it should be used only when the employed fire management tactics were for the specific purpose of protecting threatened structures.



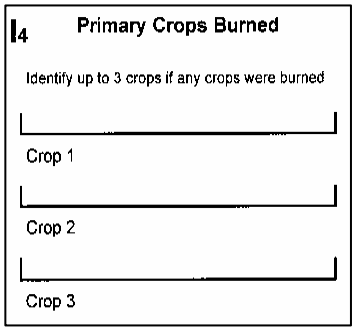
Block I3 is used to show the total acres burned by a wildland fire. Recording the estimated number of acres burned indicates the magnitude of each fire and of the wildland fire problem overall.



An estimated number of acres burned represents a vital component of the overall fire loss picture. This information can be used to evaluate progress in wildland fire prevention. It also can help to determine the magnitude of resources that should be devoted to fire protection and the cost effectiveness of various programs.

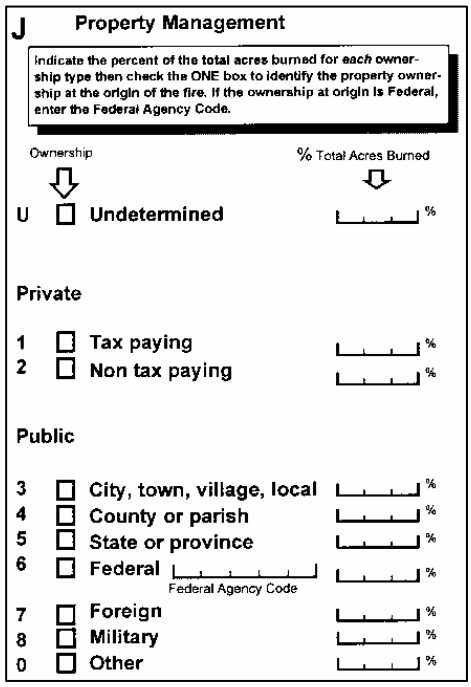
This entry should be the most accurate estimate of acres burned that is practical to obtain (one acre equals 43,560 square feet). Estimates based on the use of accurately scaled maps, dot grids, planimeters, or other accurate measuring methods are preferred. If less than one acre was burned, the decimal point field should be used to denote tenths of an acre.

Block I4 collects information regarding up to three types of crops that burned. List the crop with the most acres burned first. If no crops were burned, leave this block blank.



Information about what type of crops burned in the fire is useful in tracking trends and patterns in wildland fires and planning prevention strategies.

Section J: Property Management



This section provides for the documentation of the principal entity having responsibility for maintenance or control of property use **where the fire originated**. It also allows for the reporting of the percent of total acres burned for each type of ownership involved.

The number of acres burned by property ownership is of significant value to local fire departments as well as to State and Federal wildland agencies. It provides a means to determine the frequency and impact of fire on property managers, especially major holders of land such as ranchers, lumber and paper companies, agricultural producers, and Federal and State governments. This information will help target fire protection programs to entities having the greatest risk or loss potential. **This information also helps to identify the entity responsible for reimbursing costs associated with fire suppression efforts.**

Indicate the percent of the total acres burned for each type of ownership involved, and then mark the appropriate box that describes the principal entity that has responsibility for the property where the fire originated. If a Federal agency has responsibility for the property, enter the five-digit Federal Agency Code in the space provided. Mark "U" if undetermined.

Activity 8.3

Property Ownership

Purpose

To determine how the following scenarios can be coded.

Directions

Determine how the examples below would be coded.

Scenario 1

The fire occurred on a privately owned and operated farm that is a "private tax-paying" property and spread to property owned by the county. The county owned 70 percent of the total acres burned.

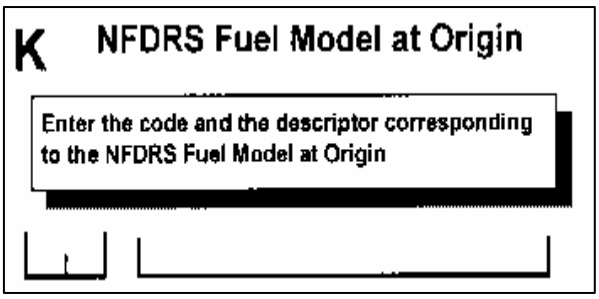
Scenario 2

The fire occurred on property owned and operated by the U.S. Forest Service (Region 02, Forest 10), and spread to property owned by the State. Fifty percent of the fire was on Federal property.

Notes on Activity Debriefing

Section K: NFDRS Fuel Model at Origin

This data element identifies the type of wildland fuel involved in a wildland fire at the point of origin. Fuel models were devised as a means of organizing information about vegetative fuels for use in the NFDRS to predict fire danger. The local forester should be able to assist in identifying the fuel models in your area.



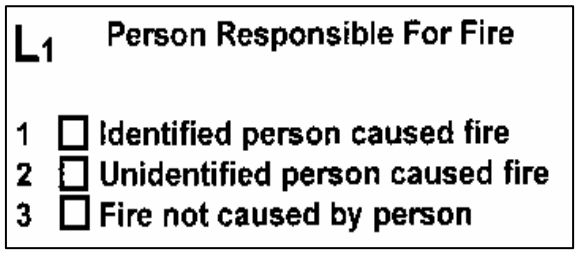
The proper entry in this field is the two-digit code and descriptor that corresponds to the NFDRS fuel model that best identifies the type of wildland vegetation burned at the point of origin.

NFDRS Fuel Model at Origin Codes

01	A: Annual Grasses.		(less than 25 tons per acre)
02	B: Mature brush [6 ft.+]	**11**	K: Light slash (less than 15 tons per acre)
03	C: Open pine with grass		
04	D: Southern rough	**12**	L: Perennial grasses
05	E: Hardwood litter	**14**	N: Saw grass, marsh needle-like grass
06	F: Intermountain west brush	**15**	O: High pocosin
07	G: West Coast conifers; close, heavy down materials	**16**	P: Southern long-needle pine
		17	Q: Alaska black spruce
08	H: Short needle conifers; normal down woody materials	**18**	R: Hardwood litter (summer)
		19	S: Tundra
09	I: Heavy slash, clear-cut conifers greater than 25 tons per area	**20**	T: Sagebrush with grass
		21	U: Western long-leaf pine
10	J: Medium slash, heavily thinned conifers	**UU**	Undetermined

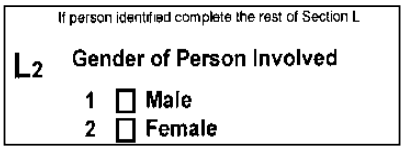
Section L: Person Responsible for Fire, Gender of Person Involved, Age or Date of Birth, and Activity of Person

Block L1 documents whether a person was responsible for the fire and documents whether or not that person was identified. If the person was identified, the rest of Section L should be completed.

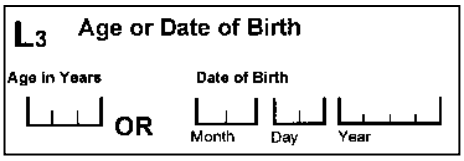


If the person responsible for causing the fire is known, identifying information about the person can be entered in Block K1 of the Basic Module or the Supplemental Module.

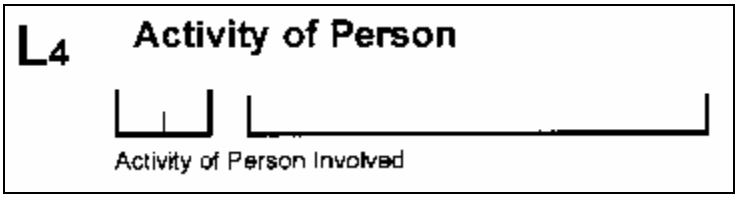
Information on the gender of persons involved--entered in block L2--can be used with other demographic information to identify fire problems in certain segments of the population and to target fire prevention and fire safety programs.



Block L3 records the age or date of birth for the person identified as being responsible for the fire whether the cause was accidental or intentional.



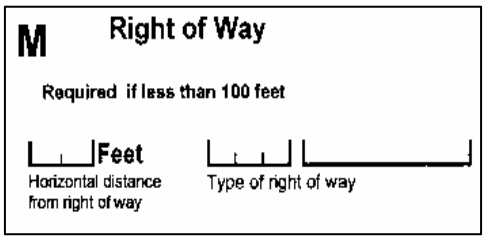
This information can be used with gender and other demographic data to identify fire problems in certain segments of the population and to target fire prevention and fire safety programs. This data element is particularly useful in tracking juvenile firesetter trends when "Age was a Factor" (if noted in D2) and gender (L2) are considered.



The entry in block L4 describes the primary activity of the person believed to have caused the fire. Prevention programs and strategy development on wildland fires are of utmost importance in continuing education on fire behavior. Collecting information on the primary activity of the person involved will assist in developing programs that best address the fire prevention needs of each activity.

Section M: Right of Way

Right of Way refers to the horizontal distance of fire origin point from the edge of the traveled surface of a road or the nearest outside rail of a railroad right-of-way, or from the nearest power line or power transmission equipment of a utility right-of-way.



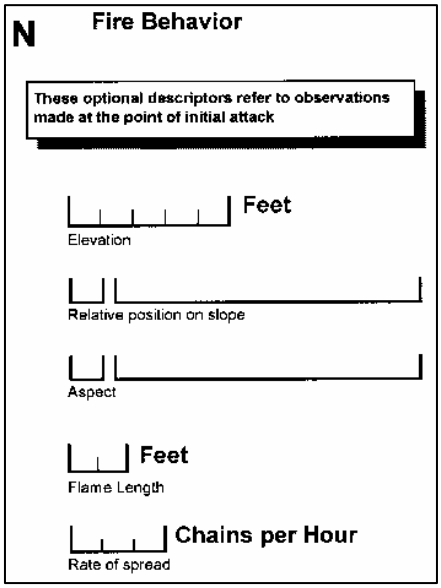
This section is completed only for fires starting on or near (within 99 feet) road, railroad, or power line rights-of-way.

This section contains two fields. In one, the actual measured or estimated horizontal distance (to the nearest foot up to 99 feet) of the point of fire origin from the right-of-way is entered. A description of the type of right-of-way near or on which the fire started is recorded in the second field.

Aggregate data about horizontal distances from rights-of-way provide information necessary to assess the risks of certain hazards and to develop hazard reduction strategies such as regulations for controlling combustible fuels along roads and other rights-of-way.

Section N: Fire Behavior

This section allows for the documentation of the topographical features and fire characteristics that contributed to the fire behavior. Information about fire behavior is used in fire modeling to assess the potential for fire ignition and rate of spread for different fuels under various conditions.



These optional descriptors refer to observations made at the point of initial attack. Use of these descriptors most likely will be limited to wildland-fire management agencies that are trained in making these observations.

The Elevation field is used to record the numeric representation of the height above mean sea level, measured in feet.

The Relative Position on Slope field indicates the relative position of the fire on a slope. It can be coded as follows:

0 Valley Bottom
1 Lower Slope
2 Mid Slope
3 Upper Slope
4 Ridge Top

The Aspect field is the direction that the slope faces. The choices for coding this observation are as follows:

0 Flat/None	**3 Southeast**	**6 West**
1 Northeast	**4 South**	**7 Northwest**
2 East	**5 Southwest**	**8 North**

The Flame Length refers to the distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface) measured in feet.

The "chains per hour" field is used to record the measurement of forward-spread rate of the fire front (a "chain" is equivalent to 66 feet or approximately 1 foot per minute).

Activity 8.4

Completion of Wildland Fire Module

Purpose

Given the scenario of a hypothetical incident, complete the Wildland Fire Module.

Directions

1. Work individually to complete the Wildland Fire Module, accurately describing the hypothetical scenario.

2. Allow 20 minutes to complete the module and be prepared to participate in the class discussion.

Scenario

It is 1000 hours on Saturday, the 26th of June, 2004, when your Type 2 engine with three personnel are dispatched to a reported brush fire threatening homes in Carlysle Canyon. The location given was the SE 1/4 of the NE 1/4 of Section 34, Township 7N, Range 12W, San Bernardino (S.B.) Meridian. The weather at 1000 hours was 78° F, 29 percent relative humidity, winds from the southwest at 6 mph and clear skies. Fuel moisture is estimated at 9 percent. The area is in a drought with a fire danger rating of extreme.

The fire was started adjacent (approximately 10 feet) to a hiking trail in the canyon bottom at an elevation of 1,250 feet. It is estimated at 2 acres in size when you arrive at 1040 hours. There is no vehicle access into the canyon. The fire is a slope-driven one, with relatively slow spread (estimated at 127 chains per hour) with an average flame length of 12 feet. The fuel bed is medium to heavy brush (Fuel Model F) with good continuity. The canyon slope averages 50 percent.

Five homes are located at the top of the slope, accessible by a 20-foot-wide access road. The homes are wood construction, about 2,500 to 3,000 square feet each. They are located about one-fourth of a mile apart and there is minimal separation of brush from the structures. On your arrival, the fire is on the lower, northwest side of the slope approximately three-fourths of a mile away from the closest structure.

In addition to your crew, four other Type 2 engines (each with a crew of three) from your department were dispatched to the fire. A chief officer is responding, but will not arrive until 1200 hours. Two Type 1 air tankers are available on request, both 20 minutes away. A reload, if needed, also will take 20 minutes. One air-attack supervisor will respond, upon request, within 15 minutes.

You assume command and immediately call for another alarm (from surrounding fire departments) with a minimum of five Type 2 engines. You also request two USFS Type 1 hand crews (18 members each), two Type I dozers, and ask for the immediate dispatch of both Type 1 air tankers and the air-attack supervisor.

You suspect the fire will probably make several up-slope runs at structures. Structure number 1 is in the path of least resistance, with a low survivability factor and a high risk to firefighter safety. Structure number 2 has only a moderate survivability in this situation, but also poses a high risk to firefighter safety. Apparatus and personnel are prepositioned to protect the remaining structures (all structures have been evacuated).

By the time the fire was brought under control (confined) at 1800 hours, it had burned 300 acres and destroyed two structures. The estimated property loss was $300,000 of which $50,000 was the contents of the two structures. There were no injuries or deaths associated with the fire.

After the fire was out, you found that a 20-year-old male hiking with his girlfriend started the fire when he carelessly discarded a cigarette into the dry brush. You determine that the fire started 5 feet away from the hiking trail in the canyon bottom on county open-space property. Approximately 70 percent of the acreage burned was privately owned; the remainder belonged to the county.

You and your crew are the last to leave the scene at 0800 hours on Sunday, June 27th. As Incident Commander, it is your responsibility to complete the incident report upon your return to the station. You start by entering your FDID Number--TR100; State WI; Name--Wayne County Fire Department; Station--106; and Incident Number--0005210.

Notes on Activity Debriefing

SUMMARY

The "optional" Wildland Fire Module is used to document reportable wildland fires. A reportable fire is generally any wildland fire involving vegetative fuels that occurs in the wildland or urban/wildland interface areas. This includes fires that threaten or consume structures.

It permits wildland fires to be profiled in depth for resource allocation, incident management, and fire impact analysis. Aggregated data on wildland fires will provide information that can be used by policymakers for developing codes and standards, zoning ordinances, and forest management plans.

NOTE-TAKING GUIDE

Slide 8-1

UNIT 8:
WILDLAND FIRE MODULE--NFIRS 8

Slide 8-1

Slide 8-2

NFIRS 8--WILDLAND FIRE MODULE

Slide 8-2

Slide 8-3

OBJECTIVES

The students will be able to:

- **Describe when the Wildland Fire Module is to be used.**
- **Given the scenario of a hypothetical incident, demonstrate how to complete the Wildland Fire Module.**

Slide 8-3

Slide 8-4

PURPOSE OF THE WILDLAND FIRE MODULE

- **The purpose of the Wildland Fire Module (NFIRS 8) is to document reportable wildland fires.**
- **Any fire involving vegetative fuels that occurs in the wildland or urban/wildland interface areas, including those fires which threaten or consume structures.**

Slide 8-4

Slide 8-5

USE OF THE WILDLAND FIRE MODULE

The Wildland Fire Module is used primarily instead of the Fire Module (NFIRS 2) when Incident Type is

- **Forest, woods, or wildland fire (141)**
- **Prescribed fire (632)**

Slide 8-5

Slide 8-6

USE OF THE WILDLAND FIRE MODULE (cont'd)

The Wildland Fire Module also <u>may</u> be used for the following incident types:

- **Vegetation fire, other (140)**
- **Brush, or brush and grass mixture fire (142)**
- **Grass fire (143)**
- **Special outside fire (160)**
- **Cultivated vegetation, crop fire, other (170)**

Slide 8-6

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USE OF THE WILDLAND FIRE MODULE (cont'd)

- Cultivated grain, crop fire (171)
- Cultivated orchard or vineyard fire (172)
- Cultivated trees or nursery stock fire (173)
- Unauthorized burning (561)
- Controlled burning, authorized (631)

Slide 8-7

Slide 8-8

Activity 8.1
Controlled Burning versus Prescribed Fire

Slide 8-8

Slide 8-9

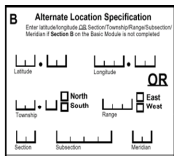
A--HEADER INFORMATION

- Header information is repeated on all modules.
- In an automated system, this information is entered once and imported into all modules.

Slide 8-9

Slide 8-10

B--ALTERNATE LOCATION SPECIFICATION

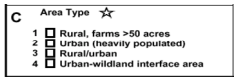


- **Is used in place of Section B of the Basic Module (NFIRS 1) when traditional addressing methods are not suitable**
- **Documents the geographical location of the wildland fire**

Slide 8-10

Slide 8-11

C--AREA TYPE ☆

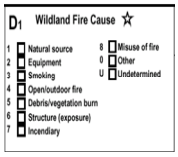


- **This is a general description of the area where the wildland fire occurred.**
- **Provides for the documentation of fires occurring in urban/wildland interface areas.**

Slide 8-11

Slide 8-12

D1--WILDLAND FIRE CAUSE ☆

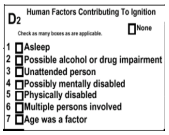


Identifies ignition causes consistent with the "General Fire Causes" adopted by the National Wildfire Coordinating Group (NWCG)

Slide 8-12

Slide 8-13

D2--HUMAN FACTORS CONTRIBUTING TO IGNITION

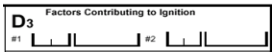


Reports human factors that contributed to the ignition

Slide 8-13

Slide 8-14

D3--FACTORS CONTRIBUTING TO IGNITION

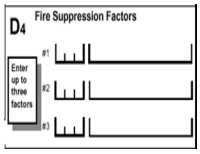


- **The contributing factors that allowed the heat source and combustible material to combine to ignite the fire.**
- **Up to two factors that contributed to the ignition of the wildland fire may be reported.**

Slide 8-14

Slide 8-15

D4--FIRE SUPPRESSION FACTORS



Documents the factors or conditions that affected fire suppression efforts or fire management strategy

Slide 8-15

Slide 8-16

Activity 8.2
Wildland Fire Supression Factors

Slide 8-16

Slide 8-17

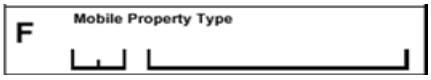
E--HEAT SOURCE

- **The specific source of the heat that started the fire.**
- **Example: A discarded cigarette (61) ignited the brush, resulting in a wildland fire.**

Slide 8-17

Slide 8-18

F--MOBILE PROPERTY TYPE

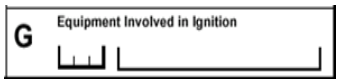


- **Refers to property that is designed to be mobile**
- **Used to document if mobile property failed, was used improperly, or provided the heat that caused ignition**

Slide 8-18

Slide 8-19

G--EQUIPMENT INVOLVED IN IGNITION

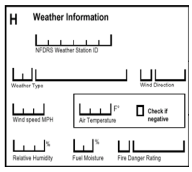


Documents the equipment that provided the principal heat source to cause the ignition

Slide 8-19

Slide 8-20

H--WEATHER INFORMATION

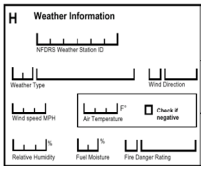


Descriptive information regarding weather conditions that existed at the time and location of the fire origin

Slide 8-20

Slide 8-21

NATIONAL FIRE DANGER RATING SYSTEM WEATHER STATION IDENTIFICATION



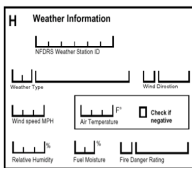
(National Fire Danger Rating System)

Records the ID number for the NFDRS Weather Station that monitors weather conditions at the location of fire origin

Slide 8-21

Slide 8-22

WEATHER TYPE

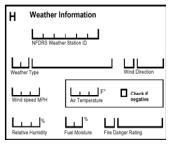


The general description of weather conditions at the time and location of fire origin

Slide 8-22

Slide 8-23

WIND DIRECTION AND SPEED

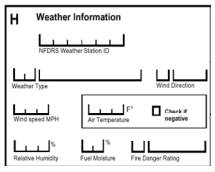


The direction the wind was blowing and the speed of the wind at the time and location of fire origin

Slide 8-23

Slide 8-24

TEMPERATURE AND RELATIVE HUMIDITY

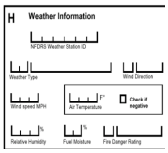


Records the ambient air temperature and the relative humidity at the time of fire origin

Slide 8-24

Slide 8-25

FUEL MOISTURE

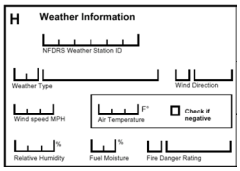


The 10-hour reading of the moisture content of a fuel stick taken in the general area of the fire origin

Slide 8-25

Slide 8-26

FIRE DANGER RATING

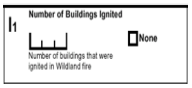


Refers to one method of describing the wildfire threat in a particular area, based on the NFDRS

Slide 8-26

Slide 8-27

I_1--NUMBER OF BUILDINGS IGNITED

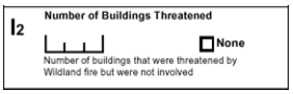


Records the number of buildings, if any, that were ignited in the wildland fire

Slide 8-27

Slide 8-28

I2--NUMBER OF BUILDINGS THREATENED

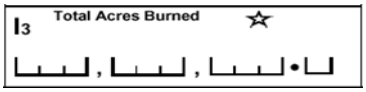


Records the number of buildings, if any, that were threatened, but not involved in the wildland fire

Slide 8-28

Slide 8-29

I3--TOTAL ACRES BURNED

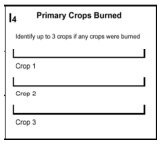


Records the estimated number of total acres burned by a wildfire

Slide 8-29

Slide 8-30

I4--PRIMARY CROPS BURNED

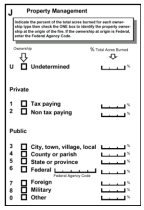


- **Identifies up to three types of crops that burned.**
- **The crop with the most acres burned should be listed first.**

Slide 8-30

Slide 8-31

J--PROPERTY MANAGEMENT



The percentage of total acres burned for each type of ownership involved and the entity having responsibility for the property where the fire originated

Slide 8-31

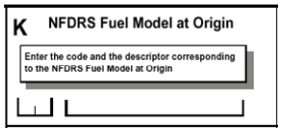
Slide 8-32

Activity 8.3
Property Ownership

Slide 8-32

Slide 8-33

K--NFDRS FUEL MODEL AT ORIGIN

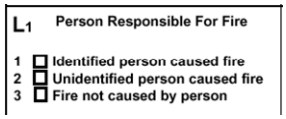


Identifies the NFDRS fuel model that best describes the type of vegetation burned at the point of origin

Slide 8-33

Slide 8-34

L1--PERSON RESPONSIBLE FOR FIRE

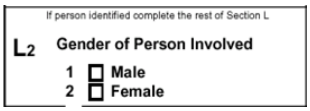


Identifies whether or not a person (known or unknown) was responsible for the fire

Slide 8-34

Slide 8-35

L2--GENDER OF PERSON INVOLVED



Identifies the gender of the person responsible for causing the fire

Slide 8-35

Slide 8-36

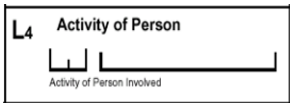
L3--AGE OR DATE OF BIRTH OF PERSON RESPONSIBLE

Identifies the age or date of birth of the person responsible for causing the fire

Slide 8-36

Slide 8-37

L4--ACTIVITY OF PERSON INVOLVED

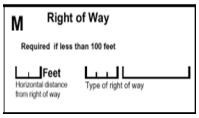


Describes the primary activity of the person responsible for causing the fire

Slide 8-37

Slide 8-38

M--RIGHT OF WAY

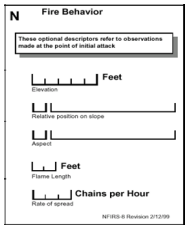


- **The horizontal distance of the point of fire origin from the right-of-way and the description of the right-of-way**
- **Used only for fires started on or near a right-of-way**

Slide 8-38

Slide 8-39

N--FIRE BEHAVIOR

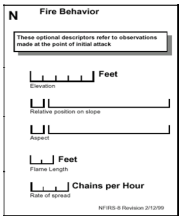


These optional descriptors refer to observations made at the point of initial attack.

Slide 8-39

Slide 8-40

ELEVATION

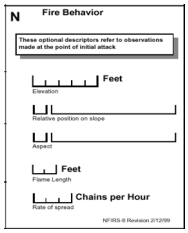


The distance from sea level to the wildland fire

Slide 8-40

Slide 8-41

RELATIVE POSITION ON SLOPE

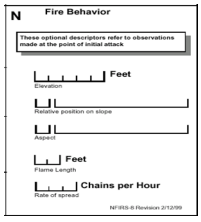


This observation indicates the relative position of the fire on a slope at the time of initial attack.

Slide 8-41

Slide 8-42

ASPECT

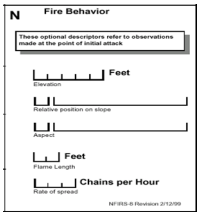


This observation indicates the general direction that a given slope faces.

Slide 8-42

Slide 8-43

FLAME LENGTH

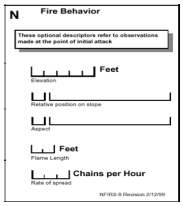


The distance between the flame tip and the midpoint of the flame depth at the base of the flame

Slide 8-43

Slide 8-44

RATE OF SPREAD



This is a measurement of the approximate rate of forward spread of a fire front, expressed in chains per hour. (chain = 66 feet)

Slide 8-44

Slide 8-45

Activity 8.4
Completion of Wildland Fire Module

Slide 8-45

Slide 8-46

SUMMARY

The "optional" Wildland Fire Module (NFIRS 8) is used to document reportable wildland fires.

- **Any fire involving vegetative fuels that occurs in the wildland or urban/wildland interface areas.**
- **Includes those fires which threaten or consume structures.**

The Wildland Fire Module permits wildland fires to be profiled in depth for resource allocation, incident management, and fire impact analysis.

Slide 8-46

Slide 8-47

QUESTIONS?

Slide 8-47

UNIT 9: APPARATUS/RESOURCES MODULE--NFIRS 9

OBJECTIVES

The students will be able to:

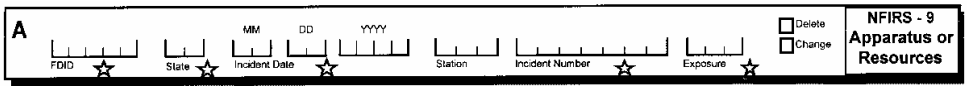
1. *Describe when the Apparatus/Resources Module can be used.*

2. *Given the scenario of a hypothetical incident, demonstrate how to complete the Apparatus/Resources Module.*

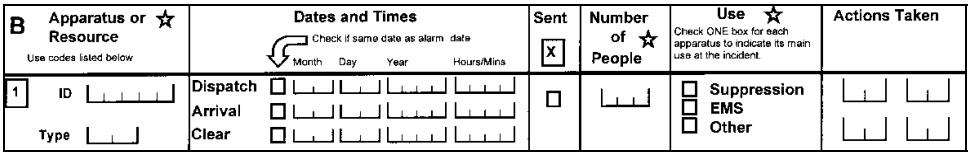
APPARATUS/RESOURCES MODULE--NFIRS 9

The Apparatus/Resources Module is used as a local option to identify the apparatus and personnel sent to an incident. When this module is used, it is not necessary to complete the Personnel Module.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure

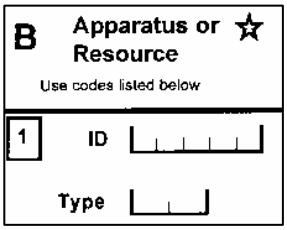


This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of an incident report. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required.



Section B: Apparatus or Resource, Dates and Times, Sent, Number of People, Use, and Actions Taken

On the paper form, there are enough fields in this section to record an identification and type for nine pieces of apparatus. If more apparatus responded to an incident, more sheets can be used. Document all apparatus that were used to control the incident.

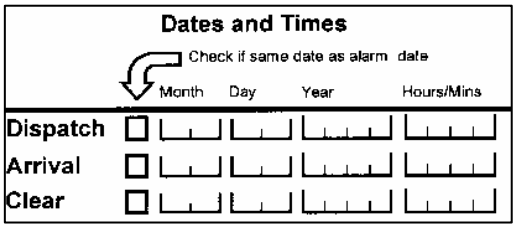


The ID field is a five-character field. This field is set up by the local agency. Apparatus Type field definitions can be found in the bottom section of the module labeled Type of Apparatus or Resource. Types are grouped into the following categories:

- Ground Fire Suppression;
- Heavy Ground Equipment;
- Aircraft;
- Marine Equipment;
- Support Equipment; or
- Medical & Rescue.

Dates and Times

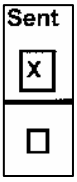
Lines are provided to indicate dates and times for "Dispatch," "Arrival," and "Clear." Hours and minutes for all times are recorded in 24-hour time (midnight is 0000).



If the date for any of the times being documented is the same as the alarm date, a box can be marked.

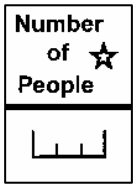
Sent

On the sheet, a box is available to indicate whether or not the unit actually responded to the incident. If it did, the box is marked. If the unit was held in quarters, the box is left blank. This box is not necessary in an automated system.



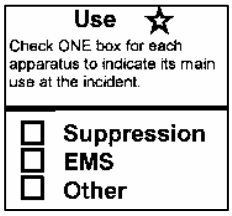
Number of People

The total number of people who responded on the specific piece of apparatus is recorded on the line provided.



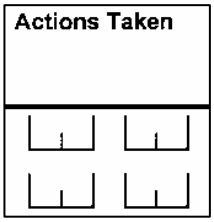
Use

Three choices are offered in this section to clarify the **main** use of each piece of apparatus at the incident. Only one box is marked for each one.



Actions Taken

Codes taken from Section F of the Basic Module are entered to describe actions taken by firefighters. Up to four actions can be recorded for each piece of apparatus.



Activity 9.1

Completion of Apparatus/Resources Module

Purpose

To complete the Apparatus/Resources Module given the scenario of a hypothetical incident.

Directions

1. Work with your small group to complete the Apparatus/Resources Module that accurately describes the scenario.

2. Allow 10 minutes to complete the module and be prepared to participate in the class discussion.

Scenario

Engine 422 (three firefighters and one captain), Engine 425 (two firefighters and one lieutenant), Truck 42 (three firefighters and one captain), and a deputy chief respond to a structure fire at 1326 Market Street. The dispatch time for all units is 0240 on October 12, 2004. Incident Number 0000001 is assigned.

Engine 422 arrives on location at 0241 hours, advances one 1-3/4-inch hoseline to the first floor, and attacks the fire. The crew also searches for victims.

Deputy Chief Farley arrives at 0242 and establishes command.

The truck company splits into two crews upon their arrival at 0243. One crew performs search and rescue and the other, ventilation. After the fire is knocked down, the company performs salvage and overhaul.

Engine 425, a 0244 arrival, takes a hydrant and supplies Engine 422. They then advance a backup line to the second floor and extinguish the fire that extended to the bedroom.

Engine 422 cleared the scene at 0300 and was available for duty at 0325. Truck 42 was cleared at 0320 and available at 0345. Deputy Chief Farley cleared at 0325 and was available at 0326. Engine 425 cleared the scene at 0350 and was available at 0410.

Notes on Activity Debriefing

SUMMARY

The Apparatus/Resources Module is used as a local option to identify the apparatus and personnel sent to an incident. If this module is used, it is not necessary to use the Personnel Module.

On the paper form, lines are available to document nine pieces of apparatus, and additional sheets can be used. This will document all apparatus that were used to control the incident.

NOTE-TAKING GUIDE

Slide 9-1

UNIT 9: APPARATUS/RESOURCES MODULE--NFIRS 9

Slide 9-1

Slide 9-2

NFIRS 9--APPARATUS/ RESOURCES MODULE

Slide 9-2

Slide 9-3

OBJECTIVES

The students will be able to:

- **Describe when the Apparatus/ Resources Module can be used.**
- **Given the scenario of a hypothetical incident, demonstrate how to complete the Apparatus/Resources Module.**

Slide 9-3

Slide 9-4

APPARATUS/RESOURCES MODULE

- **Used as a local option to identify the apparatus and number of personnel sent to an incident**
- **Allows multiple actions taken for each apparatus**

Slide 9-4

Slide 9-5

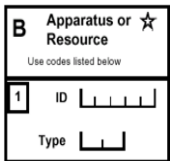
A--HEADER

- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

Slide 9-5

Slide 9-6

B--APPARATUS TYPE AND ID ☆



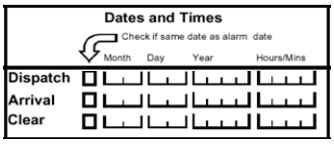
Records the:

- **Identification and type of apparatus used at an incident.**
- **Codes for "Type of Apparatus" are found in the *Handbook* or *Quick Reference Guide* (QRG).**

Slide 9-6

Slide 9-7

B--DATES AND TIMES



Documents "Dispatch," "Arrival," and "Clear" dates and times for each apparatus

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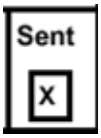
Slide 9-8

B--APPARATUS SENT



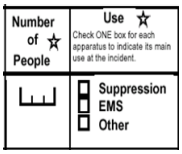
Indicates which apparatus were sent on the incident.

- **Fire departments can pre-print or pre-enter apparatus in this module.**
- **The "Sent" box will be checked to indicate which apparatus actually responded.**

Slide 9-8

Slide 9-9

B--NUMBER OF PEOPLE AND USE ☆



- **Records the total number of personnel responding on the specific piece of apparatus**
- **Describes the apparatus or resource's main use at the incident**

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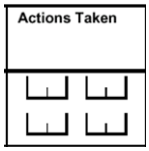
Slide 9-10

B--ACTIONS TAKEN



- **Records up to four actions taken by the specific piece of apparatus at the scene of the incident.**
- **Actions may include extinguishing fires, forcible entry, providing first aid, identifying and analyzing hazardous materials, transporting the injured, and others.**

Slide 9-10

Slide 9-11

Activity 9.1 Completion of Apparatus/Resources Module

Slide 9-11

Slide 9-12

SUMMARY

- **The Apparatus/Resources Module is used as a local option to identify the apparatus and number of personnel sent to an incident.**
- **The system accepts all apparatus used to control the incident.**

Slide 9-12

Slide 9-13

UNIT 10: PERSONNEL MODULE-- NFIRS 10

OBJECTIVES

The students will be able to:

1. *Describe when the Personnel Module can be used.*

2. *Given the scenario of a hypothetical incident, demonstrate how to complete the Personnel Module.*

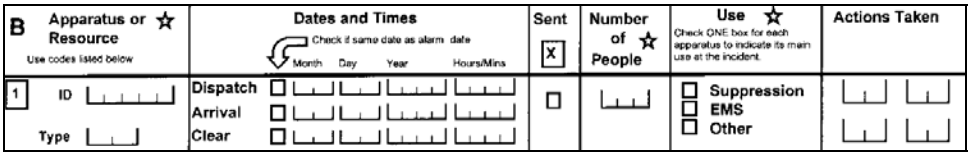
PERSONNEL MODULE--NFIRS 10

The Personnel Module also is used as a local option. If a Personnel Module is completed for each apparatus sent to the scene, it is not necessary to complete a separate Apparatus/Resources Module.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure

This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of the incident. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required.

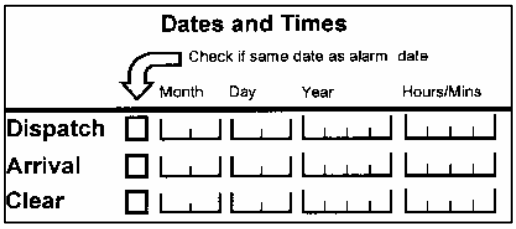
Section B: Apparatus or Resources, Dates and Times, Sent, Use, and Actions Taken



On the sheet, information regarding up to three pieces of apparatus can be recorded on one form. If more apparatus responded to an incident, more sheets can be used. The ID type fields are recorded on the first two lines. Codes for the apparatus type can be found in the *Handbook* or the *Quick Reference Guide* (QRG).

Dates and Times

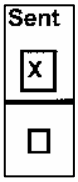
Lines are provided to indicate dates and times for "Dispatch," "Arrival," and "Clear." Hours and minutes for all times are recorded in 24-hour time (midnight is 0000).



If the date for any of the times being documented is the same as the alarm date, a box can be marked.

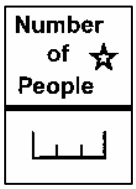
Sent

On the sheet, a box is available to indicate whether or not the unit actually responded to the incident. If it did, the box is marked. If the unit was held in quarters, the box is left blank. This box is not necessary in an automated system.



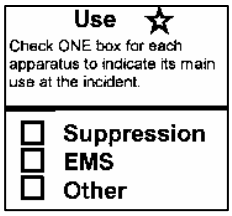
Number of People

The total number of people who responded on the specific piece of apparatus is recorded on the line provided.



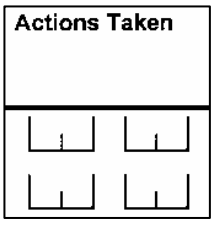
Use

Three choices are offered in this section to clarify the **main** use of each piece of apparatus at the incident. Only one box is marked for each one.



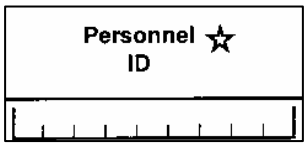
Actions Taken

Codes taken from Section F of the Basic Module are entered to describe actions taken by firefighters. Up to four actions can be recorded for each piece of apparatus.



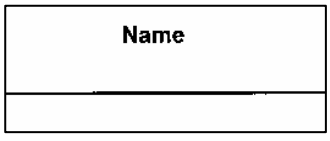
Personnel ID

This identification is set by the fire department. In some cases, departments use the individual's Social Security number.



Name

At least the last name of each individual should be entered on this line. If more than one department member has the same last name, a first name or initial or other identifier could be used.

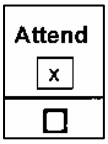


Rank or Grade

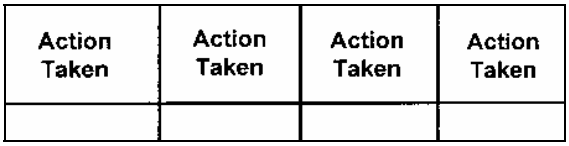
A line is provided to note each individual's rank or grade briefly.

Attend

On the sheet, the box should be marked if the individual responded to the incident. This box is not necessary in an automated system.



Action Taken



For each individual, up to four actions taken can be documented. Codes should correspond with those entered on Lines F of the Basic Module and are found in the *Handbook* or the QRG.

Activity 10.1

Completion of Personnel Module

Purpose

To complete the Personnel Module, given the scenario of a hypothetical incident.

Directions

1. Work individually to complete a Personnel Module that accurately describes the scenario.

2. Allow 10 minutes to complete the module and be prepared to participate in the class discussion.

Scenario

Your fire department provides mutual aid to FDID 45678 (their incident number 322). The dispatch time for all your units is 1345 on October 12, 2004. Incident Number 0000002 is assigned. Your resources are listed below.

Engine 422 (driven and operated by Firefighter Eddie Day, #201) arrives at 1347 hours to a structure fire at 8503 Spring Drive, Chesterfield, VA 23235. Captain Bill Britt (#111), Firefighter Thomas Miller (#212), and Probationary Firefighter Russ Lunsford (#909) advance one 1-3/4-inch line to the first floor. The crew also conducted a search for victims.

Deputy Chief Rich DeVos (#007) arrives on scene at 1349 hours and assists with incident command.

Medic 1 (driven and operated by Firefighter/First Responder Danny Felty, #250) arrives on scene at 1350 hours. Paramedic Mark Thornton (#175) finds the homeowner in the front yard suffering from smoke inhalation and administers oxygen. Firefighter Felty treats a child for a cut received while escaping the structure.

Truck 1 arrives at 1351 hours. Captain Don Brown (#112) and Firefighter Reginald Wolfrey (#219) conduct a search of the second floor while Firefighter Roxanne Jefferson (#230) and Firefighter Wayne Driver (#244) perform ventilation. After the fire is knocked down, the whole crew performs salvage and overhaul.

Engine 422 cleared the scene at 1431 and was available for duty at 1445. Truck 1 was clear at 1450 and available at 1510. Deputy Chief DeVos cleared at 1500 and was available at 1501. Medic 1 was clear of the scene at 1510 and available at 1540.

Notes On Activity Debriefing

SUMMARY

The Personnel Module is used as a local option to document personnel and apparatus information for individual incidents. If a Personnel Module is completed for each apparatus sent to the scene, it is not necessary to complete the Apparatus/Resources Module.

NOTE-TAKING GUIDE

Slide 10-1

UNIT 10:
PERSONNEL MODULE--
NFIRS 10

Slide 10-1

Slide 10-2

NFIRS 10--PERSONNEL MODULE

Slide 10-2

Slide 10-3

OBJECTIVES

The students will be able to:

- **Describe when the Personnel Module can be used.**
- **Given the scenario of a hypothetical incident, demonstrate how to complete the Personnel Module.**

Slide 10-3

Slide 10-4

PERSONNEL MODULE

- **Used as a local option to help manage and track personnel and resources used on incidents**
- **Can be used in place of the Apparatus and Resource Module (NFIRS-9) if more detail on personnel is needed**

Slide 10-4

Slide 10-5

A--HEADER

- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

Slide 10-5

Slide 10-6

B--APPARATUS INFORMATION ☆

Same as covered in Apparatus Module

Slide 10-6

Slide 10-7

B--PERSONNEL ID, NAME, AND RANK OR GRADE

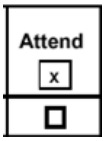
Personnel ID ☆	Name	Rank or Grade

- **Identifies personnel on specific pieces of apparatus and their level of responsibility (rank).**
- **The ID number is often the Social Security number, but may be any combination of letters and numbers up to 9 characters.**

Slide 10-7

Slide 10-8

B--ATTEND



- **Indicates which personnel were on the apparatus sent to the incident.**
- **Fire departments can preprint or pre-enter the names of personnel in this module.**
- **The "Attend" box will be checked to indicate which personnel on the apparatus actually responded.**

Slide 10-8

Slide 10-9

B--ACTION TAKEN

Action Taken	Action Taken	Action Taken	Action Taken

Documents up to four actions taken by the individual responder at the scene of the incident

Slide 10-9

Slide 10-10

Activity 10.1
Completion of Personnel Module

Slide 10-10

Slide 10-11

SUMMARY

- **Personnel Module is used as a local option to record personnel and apparatus information for individual incidents.**
- **If this module is used, it is not necessary to use the Apparatus/Resources Module.**
- **Documents the staffing of apparatus and the actions taken by personnel and apparatus on the incident scene.**

Slide 10-11

Slide 10-12

QUESTIONS?

Slide 10-12

UNIT 11: ARSON AND JUVENILE FIRESETTER MODULE--NFIRS 11

OBJECTIVES

The students will be able to:

1. *Describe when the Arson Module is to be used.*

2. *Given the scenario of a hypothetical incident, demonstrate how to complete the Arson Module.*

ARSON MODULE--NFIRS 11

An indispensable tool in the war against arson is the ability to identify when and where the crime takes place, what form it takes, and the characteristics of its targets and perpetrators. Armed with such information, fire service and law enforcement agencies can develop and implement arson prevention initiatives--allowing them to use their resources in the most efficient and effective manner. The NFIRS 11 Arson Module was developed with this goal in mind.

The Arson Module may be used whenever the Cause of Ignition (NFIRS 2 E1), is coded as "intentional," or as "under investigation" without any distinction made as to whether or not a crime has occurred, or a determination of criminal intent. The Arson Module also may be used in cases where the cause is "undetermined after investigation."

The Arson Module also may be used to document juvenile-set fires, whether determined to be intentional or not. This information will permit analysis of juvenile firesetting trends, including intervention strategies and repeated activity.

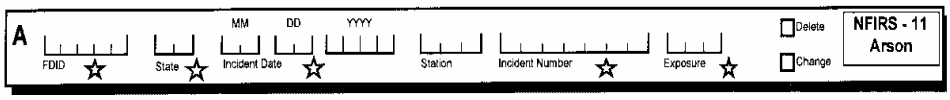
Arson--to unlawfully and intentionally damage, or attempt to damage, any real or personal property by fire or incendiary device.

Nothing in this definition is meant to alter or affect compliance with State or local incident reporting requirements. In States with mandatory reporting, the State Program Manager determines which optional modules (EMS, HazMat, Wildland, Arson, etc.) are to be submitted to the State.

The Arson Module consists of two parts: a local investigation module that permits a fire department or arson investigation unit to document certain details concerning the incident; and a juvenile firesetter section that identifies key items of information that could be used for local, State, and national intervention programs.

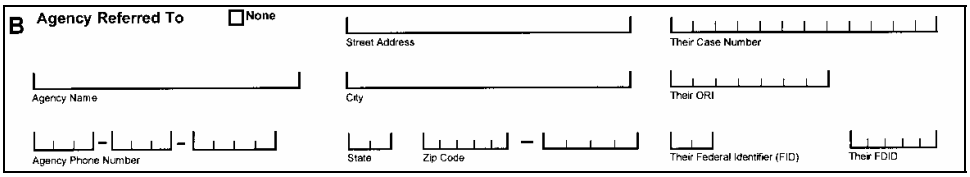
Many arson investigation units use an "arson information management system" to collect and compile information on arson incidents. This module is not intended to replace such systems, but rather to identify those data elements that could be exported to the NFIRS system and included as an integral part of the U.S. Fire Administration (USFA) National Fire Database and the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), Arson and Explosives National Repository.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure



This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of an incident. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required.

Section B: Agency Referred To



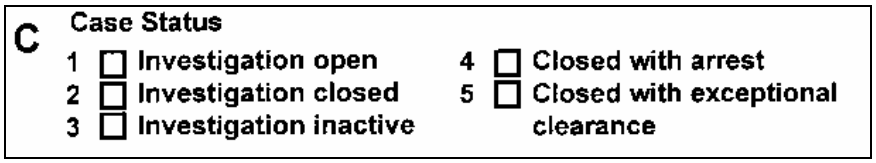
This section identifies the agency, if any, that the incident was referred to for followup investigation. This might be a law enforcement agency that has jurisdiction for a criminal investigation or another fire department that may have been requested to conduct the investigation

This information provides the details necessary to contact the agency that conducted any followup of the incident. It also allows for the collection, compilation, and analysis of all data associated with a specific incident.

ORI is the unique identification number assigned to law enforcement agencies (towns, cities, counties, State police agencies, and some colleges and universities) participating in the FBI's Uniform Crime Reporting (UCR) system or the National Incident-Based Reporting System (NIBRS).

FID is a two-character identification number used by Federal departments to submit crime data to UCR/NIBRS gathered by its dependent bureau/agencies. The ORI plus the FID and the incident number provide the necessary uniqueness to avoid the duplication of reported incidents.

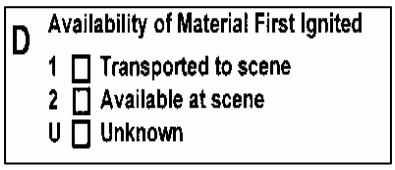
Section C: Case Status



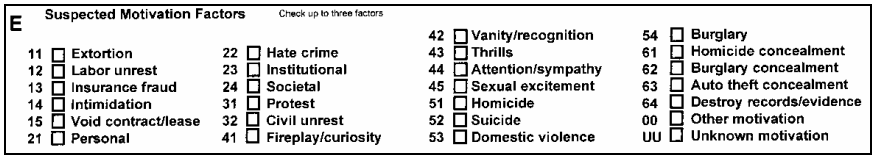
Identifies the status of the investigation at the time the report was filed. This information is useful in tracking the closure rate of investigation as well as providing information to other agencies concerning the status of cases that may be linked to cases they are investigating.

Section D: Availability of Material First Ignited

This section identifies the availability of an ignition source (including matches and lighters) to the subject. This information permits analysis of firesetting methods and trends and can assist in the development of prevention and intervention strategies.



Section E: Suspected Motivation Factors



This section identifies the suspected stimulus that caused the subject(s) to burn, or attempt to burn, any real or personal property. This permits analysis of arson trends based on the possible motivation for the crime. You may select up to three factors

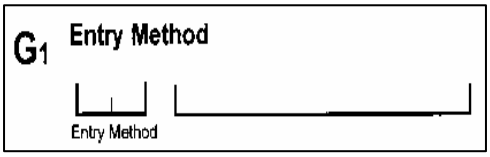
Section F: Apparent Group Involvement

This section identifies whether the suspect(s) were motivated to commit the arson act because of involvement in a larger group or organization or as a means to promote the cause of a larger group or organization.

This information will permit analysis of arson trends based on participation in criminal groups or organizations. You may add up to three factors.

Section G: Entry Method/Extent of Fire Involvement on Arrival

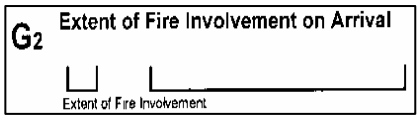
Block G1 indicates how the offender(s) gained entrance to the property. This provides additional information on the case and tracks common methods of entry for later analysis and linking of cases.



Entry Method

11 Door – open or unlocked	21 Vent
12 Door – forced or broken	22 Attic/roof
13 Window – open or unlocked	23 Key
14 Window – forced or broken	24 Help from inside
15 Gate – open or unlocked	25 Wall
16 Gate – forced or broken	26 Crawl space
17 Locks – pried	27 Hid in/on premises
18 Locks – cut	00 Other
19 Floor entry	UU Unknown

Block G2 documents the fire department's observation of the extent of the fire's involvement when it arrived at the incident scene.



This provides information about the speed and the pattern of flame spread that is helpful to case investigators.

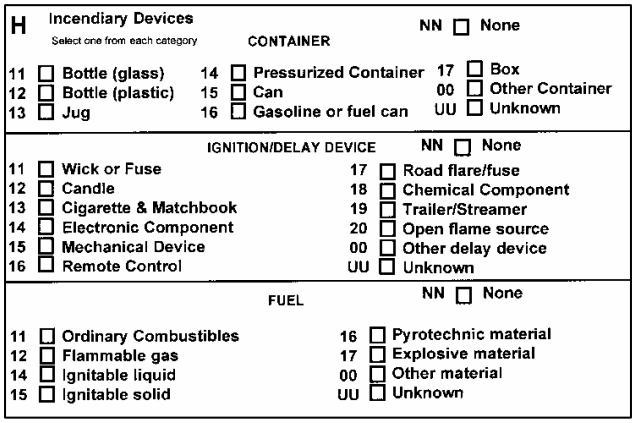
Extent of Fire Involvement on Arrival

0 No flame or smoke showing
1 Smoke only showing
2 Flame and smoke showing
3 Fire through roof
4 Fully involved

Section H: Incendiary Devices

This section documents the container, ignition and delay devices, and the fuel used to burn or attempt to burn any real or personal property.

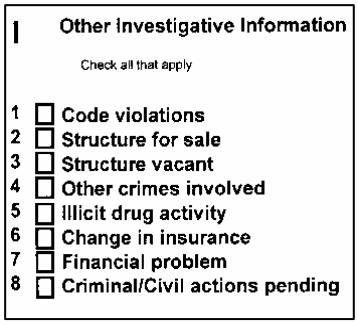
This provides additional details on the case and tracks common containers and devices for later analysis and linking of cases.



This section is divided into three categories: container, ignition/delay device, and fuel. One item should be selected from each category.

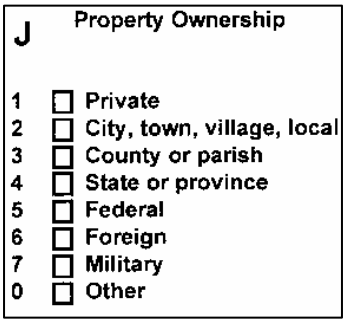
Section I: Other Investigative Information

This section collects other useful investigative information pertinent to the case, such as code violations, whether the property was vacant or for sale, changes in insurance, etc. Tracking of these possible indicators of arson will be helpful for later analysis and linking of cases.

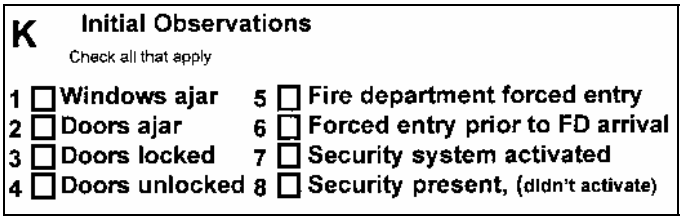


Section J: Property Ownership

This section provides for the documentation of the ownership of the property involved in the arson.

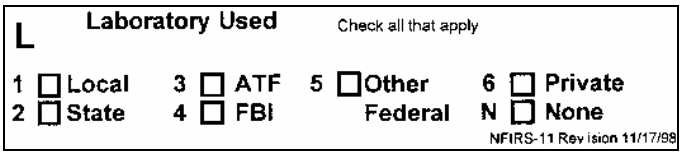


Section K: Initial Observations



Identifies important initial observations made at the incident scene relating to the property's secure status or circumvention of the security systems if present. Mark all appropriate boxes.

Section L: Laboratory Used



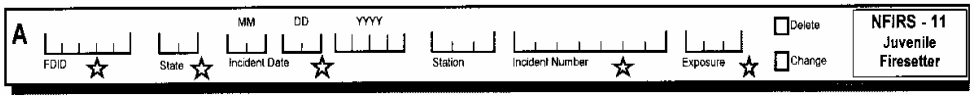
This section identifies the laboratory(ies), if any, that conducted analysis of evidence. This information is helpful in the collection and analysis of all data associated with a specific incident. Mark all appropriate boxes.

JUVENILE FIRESETTER MODULE: NFIRS 11

This module may be used to document information concerning juvenile-set fires, whether determined to be intentional or not. This information will permit analysis of juvenile firesetting trends, including intervention strategies and recidivism.

This module is completed only for fires where the person(s) involved in the ignition of the fire was a child or juvenile under the age of 18.

Section A: Fire Department Identifier, State, Incident Date, Station, Incident Number, Exposure



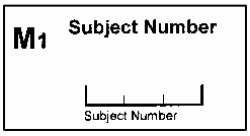
This information is consistent with the Basic Module and can be used to recall the incident from the computer program or to print a hard copy of an incident. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required.

Section M: Subject Information

If more than one subject is involved in the fire's ignition, this section should be completed for each subject under age 18.

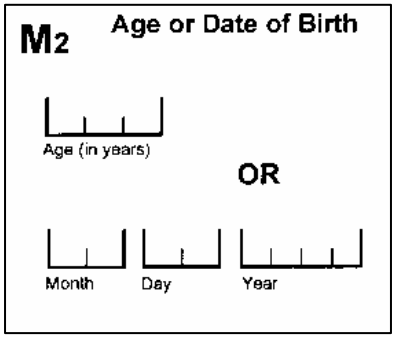
Block M1: Subject Number

Block M1 is used is used to assign a number to each juvenile subject under the age of 18 involved in the fire's ignition. The purpose of this field is to allow tracking of any subject less than 18 years of age and analysis and tracking of juvenile firesetter trends.

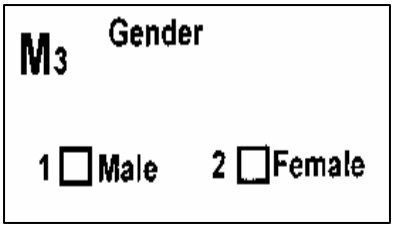


Block M2: Age or Date of Birth

Block M2 documents the age of the subject in years at the time of the incident, or the date of birth. This information can be used with other demographic information to identify arson problems in certain segments of the population and to target arson prevention programs for certain audiences. This data element is particularly useful in tracking juvenile firesetter trends.



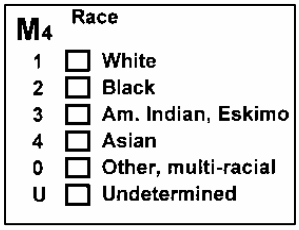
Block M3: Gender



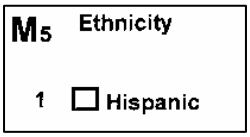
Block M3 identifies the gender of the subject. The identification of the subject as male or female can be used with other demographic information to identify arson problems in certain segments of the population and to target arson prevention programs for certain audiences.

Block M4: Race

Block M4 identifies the subject as a certain race based on U.S. Census Bureau categories. This information can be used with other demographic information to identify arson problems in certain segments of the population and to target arson prevention programs for certain audiences.



Block M5: Ethnicity



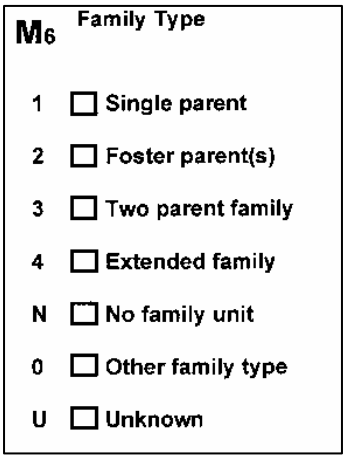
Block M5 identifies the ethnicity of the subject. Ethnicity is an ethnic classification or affiliation. "Hispanic" is the only U.S. Census Bureau ethnic classification.

Ethnicity--Designation of a population subgroup that has common cultural heritage, as distinguished by customs, characteristics, language, common history, etc.

This information can be used with other demographic information to identify arson problems in certain segments of the population and to target arson prevention programs for certain audiences.

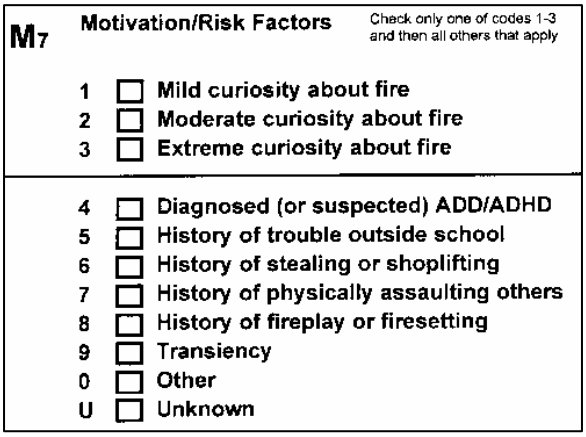
Block M6: Family Type

Block M6 describes the subject's family type. Information on family type will assist researchers in determining those risk factors that may be a predictor of juvenile firesetting, delinquency, and adult arson.



Block M7: Motivation/Risk Factors

Block M7 documents the stimulus and/or risk factors that were present and constituted a possible motivation for the subject(s) to burn, or attempt to burn, any real or personal property.



The risk factors listed are those that research has showed to be predictors of juvenile firesetting, delinquency, and adult arson. However, data on juvenile firesetters are extremely limited and this information will be useful in determining if these risk factors are valid or if others are more predictive. This information also will be helpful in tracking juvenile firesetting trends and in the development of prevention and intervention strategies.

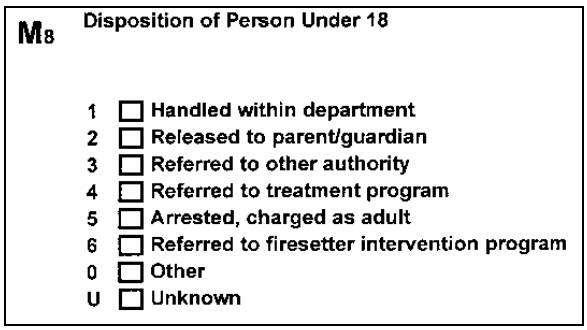
Of the motivation and risk factors listed, only one should be selected concerning "curiosity about fire" (codes 1-3). All other motivation and risk factors that apply then should be selected.

Curiosity about fire. To assist the company officer in documenting this section, the following guidance is suggested.

How many other times has this child played with fire, including matches or lighters, or set something on fire?

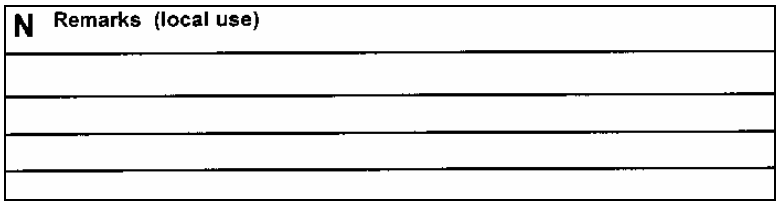
- one other time (two total incidents) = mild curiosity about fire;
- two to three other times (three to four total incidents) = moderate curiosity about fire; and
- four or more other times (five or more total incidents = extreme curiosity about fire.

Block M8: Disposition



Block M8 identifies the disposition of any subject less than 18 years of age. This data element permits analysis of how juvenile offenders are handled and is particularly useful in tracking juvenile firesetter trends. At the local level, this field also is useful in determining to whom repeat offenders have been turned over.

Section N: Remarks



The supplemental "Remarks" section on paper forms is an additional area for comments concerning this module.

Activity 11.1

Completion of Arson Module

Purpose

Given the scenario of a hypothetical incident, to complete the Arson Module and other appropriate NFIRS modules.

Directions

1. Work individually to complete the Arson Module, accurately describing the hypothetical scenario.

2. Allow 15 minutes to complete the module and be prepared to participate in the class discussion.

Scenario

It is 1000 hours on Saturday, the 9th of October, 2004, when your engine with four personnel is dispatched to a fire reported "out" in a residence at 400 Liberty Way, Raleigh, NC 27610. Upon arrival, at 1003 hours and Incident # 4444, you find a mattress smoldering on the curb. You also note a Caucasian woman in her midthirties on the front lawn, apparently scolding a young boy.

The woman (owner) approaches you and identifies herself as Susan Morash. She tells you that her 10-year-old son, Stephen, was "playing with matches" in his bedroom, and caught his mattress on fire. She was able to extinguish the fire with a bucket of water, and her neighbors helped her pull the mattress out to the curb, but the bedroom still smells of smoke. Damage was minor--$200 to the mattress and $1,000 smoke damage to the structure.

Ms. Morash is the owner of the 1,200-square-foot rancher. Her telephone number is (777) 888-9999. She was alerted when the battery-powered smoke alarm activated.

You send the crew in to investigate, check for extension, and ventilate the room, while you continue to interview the mother. Ms. Morash tells you that "little Stevie" has been a lot of trouble ever since his father disappeared. She confides in you that his father has not been seen or heard from in 3 years. She says Stevie recently was diagnosed as ADHD and has been in trouble for shoplifting, but that he has never started a fire deliberately. According to Ms. Morash, her son recently exhibited some curiosity about fire, but she was quick to point out that this fire was an "accident," as was the fire he started in the bushes last week. The field fire last month, relates Ms. Morash, "was Bobby's fault, not Steve's."

You obtain permission from Ms. Morash to talk with Stephen. He tells you that he was "bored" and "playing with matches" when he burned one of his fingers and dropped the match on the mattress. Stephen admits having set two or three other fires, but says they were all "accidents."

Upon return of your crew, they advise of no fire extension, but they found some evidence of a previous fire in the closet. They also report finding a lighter next to the bedframe and box springs. You note that the mattress appears to have been ignited by direct flame contact on the side, which would not be consistent with "dropping a match" on it.

You advise Ms. Morash of your findings and that a public education officer would be calling her to discuss the department's juvenile firesetter intervention program. She does not argue, but instead nods in seeming agreement. The unit cleared the scene at 1030 hours.

Upon your return to quarters, you call the fire prevention bureau and refer "little Stevie Morash" to the public education officer on duty.

Notes on Activity Debriefing

SUMMARY

The Arson Module may be used whenever the Cause of Ignition (NFIRS 2 E1) is coded as "intentional," or as "under investigation" without any distinction made as to whether or not a crime has occurred, or a determination of criminal intent. The Arson Module also may be used in cases where the cause is "undetermined after investigation."

The Arson Module also may be used to document juvenile-set fires, whether determined to be intentional or not. This information will permit analysis of juvenile firesetting trends, including intervention strategies and repeated activity.

NOTE-TAKING GUIDE

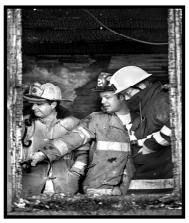
Slide 11-1

UNIT 11:
ARSON AND JUVENILE FIRESETTER MODULE--NFIRS 11

Slide 11-1

Slide 11-2

NFIRS 11--ARSON AND JUVENILE FIRESETTER MODULE



Slide 11-2

Slide 11-3

OBJECTIVES

The students will be able to:

- **Describe when the Arson Module is to be used.**
- **Given the scenario of a hypothetical incident, demonstrate how to complete the Arson Module.**

Slide 11-3

Slide 11-4

USE OF ARSON MODULE

- **The Arson Module may be used whenever the Cause of Ignition in the Fire Module is coded as "intentional" or "under investigation."**
- **No determination must be made as to criminal intent or whether or not a crime has occurred.**

Slide 11-4

Slide 11-5

ADDITIONAL USES OF ARSON MODULE

The Arson Module also may be used

- **When the fire is under investigation, or in cases where the cause is "undetermined after investigation."**
- **To document juvenile-set fires, whether determined to be intentional or not.**

Slide 11-5

Slide 11-6

ARSON DEFINED

"To unlawfully and intentionally damage, or attempt to damage, any real or personal property by fire or incendiary device"

Slide 11-6

Slide 11-7

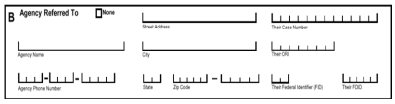
A--HEADER INFORMATION

- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

Slide 11-7

Slide 11-8

B--AGENCY REFERRED TO



Identifies the agency, if any, the incident was referred to for followup investigation

Slide 11-8

Slide 11-9

DEFINITIONS

ORI is the unique identification number assigned to law enforcement agencies participating in the FBI's Uniform Crime Reporting (UCR) system or the National Incident-Based Reporting System (NIBRS).

Slide 11-9

Slide 11-10

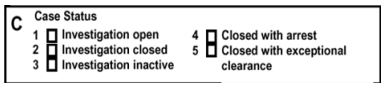
DEFINITIONS (cont'd)

- **FID is a two-character identification number used by departments to submit crime data to UCR/NIBRS gathered by its dependent bureau/agencies.**
- **The ORI plus the FID and the incident number provide the necessary uniqueness to avoid the duplication of reported incidents.**

Slide 11-10

Slide 11-11

C--CASE STATUS

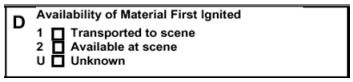


Identifies the status of the investigation at the time the report was filed

Slide 11-11

Slide 11-12

D--AVAILABILITY OF MATERIAL FIRST IGNITED

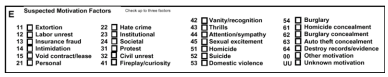


Identifies the availability to the subject of the material first ignited

Slide 11-12

Slide 11-13

E--SUSPECTED MOTIVATION FACTORS



- **Indicates the suspected factors that caused the subject(s) to burn, or attempt to burn**
- **Record up to three factors**

Slide 11-13

Slide 11-14

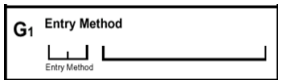
F--APPARENT GROUP INVOLVEMENT

Indicates whether the suspect(s) was motivated to commit the arson act because of involvement in a group or as a means to promote the cause of a group

Slide 11-14

Slide 11-15

G1--ENTRY METHOD

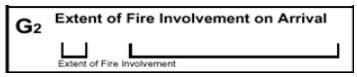


Indicates how the offender(s) gained access to the property

Slide 11-15

Slide 11-16

G2--EXTENT OF FIRE INVOLVEMENT ON ARRIVAL

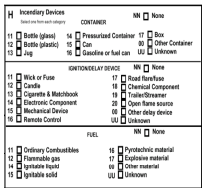


Indicates the fire department's observation of the extent of the fire's involvement upon arrival

Slide 11-16

Slide 11-17

H--INCENDIARY DEVICES

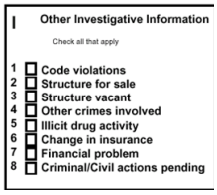


Identifies the components, methods, and/or devices that were used in the incident (if any)

Slide 11-17

Slide 11-18

I--OTHER INVESTIGATIVE INFORMATION

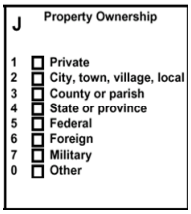


Identifies other investigative information pertinent to the case

Slide 11-18

Slide 11-19

J--PROPERTY OWNERSHIP

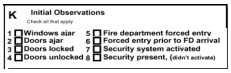


Identifies the ownership of the property involved in the arson

Slide 11-19

Slide 11-20

K--INITIAL OBSERVATIONS

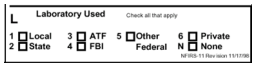


- **Identifies important initial observations made at the incident scene**
- **Provides useful information relating to the property's security status and circumvention of security systems**

Slide 11-20

Slide 11-21

L--LABORATORY USED



- **Identifies the laboratory(ies), if any, that conducted analysis of evidence**
- **Provides the means for the collection and analysis of laboratory data associated with a specific incident**

Slide 11-21

Slide 11-22

NFIRS 11--JUVENILE FIRESETTER MODULE

Blocks M1 to M8 are optional fields to be used if the person(s) involved in the ignition of the fire was a juvenile under the age of 18.

Slide 11-22

Slide 11-23

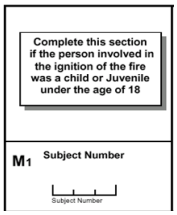
A--HEADER INFORMATION

- **Header information is repeated on all modules.**
- **In an automated system, this information is entered once and imported into all modules.**

Slide 11-23

Slide 11-24

M1--SUBJECT NUMBER

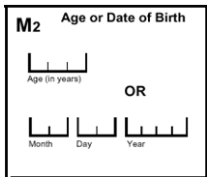


A number assigned to each juvenile subject involved in the fire's ignition

Slide 11-24

Slide 11-25

M2--AGE OR DATE OF BIRTH

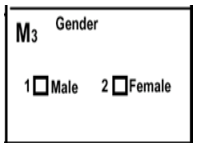


Identifies the age or date of birth of the juvenile identified as being responsible for the fire

Slide 11-25

Slide 11-26

M3--GENDER

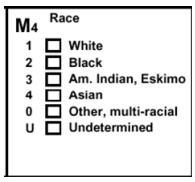


Identifies the gender of the juvenile identified as being responsible for the fire

Slide 11-26

Slide 11-27

M4--RACE

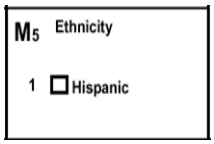


Identifies the juvenile subject as a certain race (based on U.S. Census Bureau categories)

Slide 11-27

Slide 11-28

M5--ETHNICITY

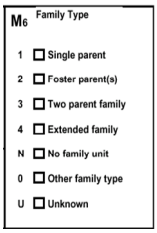


Identifies the ethnicity of the juvenile subject (based on U.S. Census Bureau categories)

Slide 11-28

Slide 11-29

M6--FAMILY TYPE

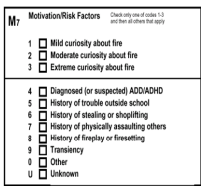


Information on family type will assist researchers in determining those risk factors that may be a predictor of juvenile firesetting.

Slide 11-29

Slide 11-30

M7--MOTIVATION/RISK FACTORS

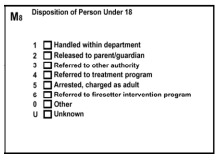


Identifies the stimulus and/or risk factors that were present and constituted a possible motivation for the incident

Slide 11-30

Slide 11-31

M8--DISPOSITION OF PERSON UNDER 18



Permits analysis of how juvenile offenders are handled--is particularly useful in tracking juvenile firesetter trends

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Slide 11-32

SUMMARY

- **The "optional" Arson Module (NFIRS 11) is used whenever the Cause of Ignition is coded as "intentional" or "under investigation."**
- **The Arson Module also may be used**
  - **In cases where the cause is "undetermined after investigation."**
  - **To document juvenile-set fires, whether determined to be intentional or not.**

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Slide 11-33

THE FUTURE

Fire and Explosive Incident Management System

- **New Internet-Based Reporting System**
- **Replaces AIMS/AIMS 2000**
- **Interfaces With NFIRS 5.0 Arson Module**

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Slide 11-34

QUESTIONS?

Slide 11-34

UNIT 12: SUMMARY AND WRAP-UP

OBJECTIVES

The students will be able to:

1. *Describe the benefits provided by Version 5.0 of the National Fire Incident Reporting System (NFIRS).*

2. *Identify and properly describe the use of the modules included in NFIRS 5.0.*

SUMMARY

NFIRS 5.0 is designed to be an all-incident reporting system in order to keep pace with the rapidly changing activities of the fire service. This all-incident system includes reporting for the full range of fire service incident types. Modules are included which capture additional information for fire, emergency medical services (EMS), fire service and civilian fire casualties, haz mat, and wildland incidents.

Data Use

Data can be used by a fire department to document its fire experience. That documentation will include information on dollar loss, injuries, deaths, fire causes, and so forth. The data also can be used to support management decisions such as the need for a new station, more personnel/equipment, or an improvement in response times.

State fire service managers use the data to develop codes and standards, guide legislation, help set training standards, and for a variety of other issues.

At the Federal level, data can be used to identify consumer product failures, support Federal legislation, develop national codes and standards, guide allocation of Federal funds, and so forth.

Ease of Use

NFIRS 5.0 is an open-specification system that is flexible and adaptable. In an automated system, it is intended that a data element be entered one time and automatically populate all fields where that information is required. It will work with a variety of hardware and software systems.

The system is modular in design and requires the completion of only those modules necessary to describe the incident. Data are collected for all incident types in one Basic Module and other modules can be used to further profile the incident. For instance, you can report a small spill without using the HazMat Module or a grass fire without completing the Wildland Module.

Compatibility

System 5.0 includes a data mapping strategy to convert 4.1 to 5.0 and provide for statistical analysis of historical data. **(Not all data are convertible.)**

An individual State or a local fire department, as an option, can add data elements that will provide information for special studies or other needs.

Comprehensiveness

With NFIRS 5.0, precise information about classifications can be made. It can capture specific property information about multiple onsite materials and their use. This will allow identification of nonintended or illegal uses of property such as residential drug houses or laboratories.

Behavioral information also is collected. Data regarding children playing with fire, their age range, what was used to set a fire, and so forth, would provide valuable information to administrators of a juvenile firesetter program.

Preciseness of Reporting

NFIRS 5.0 data fields can capture information beyond simple incident descriptions. Multiple factors contributing to the fire cause--e.g., drinking and smoking--can be collected.

Codes have been expanded in the equipment field. Specific items, such as a hair dryer, can now be coded appropriately instead of coding it as a portable heating device.

NFIRS 5.0 supports an extra level of coding specificity for each coded field in the system.

Usefulness

Information that will assist fire department managers is gathered and classified routinely. For example, information regarding detector presence, power supply, effectiveness, operation, and reason for failure is collected on detectors and automated suppression systems.

The fire service resources--apparatus and personnel--can be collected for each incident. This information could be used for staffing studies not only at the local level, but also statewide and/or nationally.

SYSTEM 5.0 MODULE REVIEW

Module Format

The system is modular and requires completion of only those modules necessary to describe the incident. Each module in the system is designed to collect specific data.

NFIRS 1--Basic Module

This module is required for every incident reported and is the only module necessary for certain incident types--small grass fires, outside trash fires, and confined-to-container-type fires, such as "food on stove" or "chimney fires."

NFIRS 1S--Supplemental Form

This form adds flexibility to any paper-based incident reporting system by expanding the amount of data that can be collected. One section of the form provides a standard means to capture name/address/telephone data regarding several persons/entities involved in an incident. The other section of the form furnishes space for additional remarks or narrative relative to an incident.

NFIRS 2--Fire Module

It is required for any fire that extends beyond a noncombustible container (a building fire, vehicle fire, outside storage fire), and can be used for larger vegetation fires.

The Wildland Fire Module can be used instead of the Fire Module for wildland and outside fires.

NFIRS 3--Structure Fire Module

The Structure Fire Module is used in conjunction with the Fire Module when a structure is involved. It captures information on the structure type, building information, fire origin, materials involved, and presence and operation of detectors and automatic suppression equipment.

NFIRS 4--Civilian Fire Casualty Module

This module is required for civilian (non-fire-service) casualties associated with fire incidents. Data gathered can be used to develop prevention responses.

NFIRS 5--Fire Service Casualty Module

It is completed whenever fire service personnel are injured, killed, or suffer an exposure in connection with an incident (or in cases where an incident is generated as a result of the injury). Risk reduction measures can be designed and implemented by Health and Safety Officers based on this type of casualty information.

NFIRS 6--EMS Module

This module is optional unless required by a State or local jurisdiction. It offers a standard means for a local fire department to capture basic information on the emergency medical services that it provides.

NFIRS 7--HazMat Module

Another optional module, it is used whenever the Basic Module indicates "other" when documenting the hazardous materials release. A separate form is completed for each material.

NFIRS 8--Wildland Fire Module

This module is optional and may be used when the incident type is vegetation and other outside fires. These data will describe, in detail, wildland incidents of all sizes.

NFIRS 9--Apparatus/ Resources Module

Another module that can be used as a local option, it will identify the apparatus sent to each incident, time of arrival/clearance, number of people aboard, use, and actions taken.

Note: The Apparatus/Resources Module **or** the Personnel Module may be used, but not both.

NFIRS 10--Personnel Module

The Personnel Module is also a local option module and some of the data may not be forwarded to the State. Personnel identification numbers, names, rank/grade, apparatus assignment, and actions taken can be noted. The Apparatus/Resources and Personnel Modules can provide administrators with data that are useful for management strategy development.

Note: The Personnel Module **or** the Apparatus/Resources Module may be used, but not both.

NFIRS 11--Arson and Juvenile Firesetter Module

The Arson Module can be used as a local option to identify with precision when and where the crime takes place, what form it takes, and the characteristics of its targets and perpetrators.

The Arson Module also may be used to document juvenile-set fires, whether determined to be intentional or not. This information will permit analysis of juvenile firesetting trends, including intervention strategies and repeated activity.

WRAP-UP

This course was designed to provide an introduction to, and experience with, the NFIRS 5.0 all-incident reporting system. The system is intended to provide complete documentation of the ever-increasing activities of the modern fire service.

Data collected will include information on dollar loss, injuries, deaths, fire causes, and so forth. The system allows documenting incidents from fires, structure fires, wildland fires, EMS, to hazardous materials releases/spills. The data gathered can be used to support management decisions, develop codes and standards, guide legislation, help set training standards, identify consumer product failures, and influence a variety of other issues.

Using the appropriate modules of NFIRS 5.0 to correctly and completely document the incidents to which fire departments respond and analyzing the data collected can improve the preparation for, and management of, those responses. Ultimately, prevention efforts can be enhanced, responders can be better prepared and safer, and citizens can be better served.

NOTE-TAKING GUIDE

Slide 12-1

UNIT 12:
SUMMARY AND WRAP-UP

Slide 12-1

Slide 12-2

SUMMARY AND WRAP-UP

Slide 12-2

Slide 12-3

OBJECTIVES

The students will be able to:

- **Describe the benefits provided by Version 5.0 of the National Fire Incident Reporting System (NFIRS).**
- **Identify and properly describe the use of the modules included in NFIRS 5.0.**

Slide 12-3

Slide 12-4

CONCLUSION

- **This course was designed to provide an introduction to, and experience with, the NFIRS 5.0 All-Incident Reporting System.**
- **The system is intended to document more completely the ever-increasing activities of the modern fire service.**

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Slide 12-5

DATA COLLECTION AND USE

Data gathered can be used to:

- **Support management decisions**
- **Develop codes and standards**
- **Guide legislation**
- **Help set training standards**
- **Identify consumer product failures**
- **Affect a variety of other issues**

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Slide 12-6

NFIRS 5.0

- **Is an open specification system, flexible and adaptable.**
- **Is automated--a data element is entered one time and automatically fills in whenever it is needed.**
- **Is modular and requires completion of only those modules necessary to describe the incident.**

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Slide 12-7

BASIC MODULE--NFIRS 1

- **The only module necessary for certain incident types--ones that are handled quickly**
- **Meets the need for a short-form method of incident reporting**

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Slide 12-8

FIRE MODULE--NFIRS 2

- **Used for any fire that extends beyond a non-combustible container**
- **Collects information regarding:**
  - **Property details**
  - **Onsite materials or products**
  - **Cause of and factors contributing to ignition**
  - **Fire suppression factors**
  - **Description of any mobile property involved**
  - **Description of any equipment involved**

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Slide 12-9

STRUCTURE FIRE MODULE--NFIRS 3

- **Used in conjunction with NFIRS 2 to record a more complete picture of structural fires**
- **Notes data about:**
  - **The structure--type, status, height, etc.**
  - **Fire origin and spread**
  - **Material contributing to flame spread**
  - **Presence and operation of detectors and automatic extinguishing systems**

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CIVILIAN FIRE CASUALTY MODULE--NFIRS 4

- **Captures data regarding any civilian (non-fire-service) casualty associated with a fire-related incident.**
- **Civilians include private citizens, non-fire-department EMS responders, and police.**
- **A casualty is a person who dies or is physically injured in such an incident.**

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Slide 12-11

FIRE SERVICE CASUALTY MODULE--NFIRS 5

- **Used to report only firefighter injuries or deaths involved with an incident.**
- **Information is collected about:**
  - **Activity at time of injury.**
  - **Primary symptom and injury severity.**
  - **Cause of injury and factors contributing to it.**
  - **Where the injury occurred.**
- **Data can be used in risk-reduction programs.**

Slide 12-11

Slide 12-12

EMS MODULE--NFIRS 6

- **Is optional and can be completed for all medical incidents to which a department responds**
- **Data can be entered regarding:**
  - **Provider assessment**
  - **Factors contributing to injury**
  - **Body site and injury type**
  - **Cause of illness/injury**
  - **Procedures used**
  - **Cardiac arrest details**

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Slide 12-13

HAZMAT MODULE--NFIRS 7

- **Is designed for documenting reportable haz mat incidents**
- **Collects relevant information concerning:**
  - **– Haz mat identity**
  - **– Container**
  - **– Release amounts and location**
  - **– Actions taken**
  - **– Mitigating factors**

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Slide 12-14

WILDLAND FIRE MODULE--NFIRS 8

- **Used to document reportable wildland fires**
- **Gathers facts about:**
  - **– Number of acres burned**
  - **– Type of materials involved in wildland fires**
  - **– Conditions which contribute to the ignition or spread**
  - **– Resources needed to control and/or extinguish these fires**

Slide 12-14

Slide 12-15

APPARATUS AND PERSONNEL MODULES--NFIRS 9 AND 10

- **Used as a local option**
- **Collect more detailed information regarding apparatus and personnel used in the handling of an incident**

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Slide 12-16

ARSON AND JUVENILE FIRESETTER MODULE--NFIRS 11

- Used as a local option
- Can help identify with precision:
  - When and where the fire takes place
  - What form it takes
  - The characteristics of its targets and perpetrators

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Slide 12-17

SUPPLEMENTAL FORM--NFIRS 1S

- For use only with paper reporting systems
- Provides for extra remarks, additional persons/entities involved, special studies, or any other aspect of an incident

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NFIRS 5.0 PURPOSE

- Collecting and analyzing data can improve the preparation for, and management of, incidents to which departments respond.
- Ultimately,
  - Prevention efforts can be enhanced.
  - Responders can be better prepared and safer.
  - Citizens can be better served.

Slide 12-18

Slide 12-19

CONCLUSION

NFIRS 5.0

. . . a comprehensive, coordinated, flexible, easier-to-use, incident reporting standard that is designed to last and be useful well into the future.

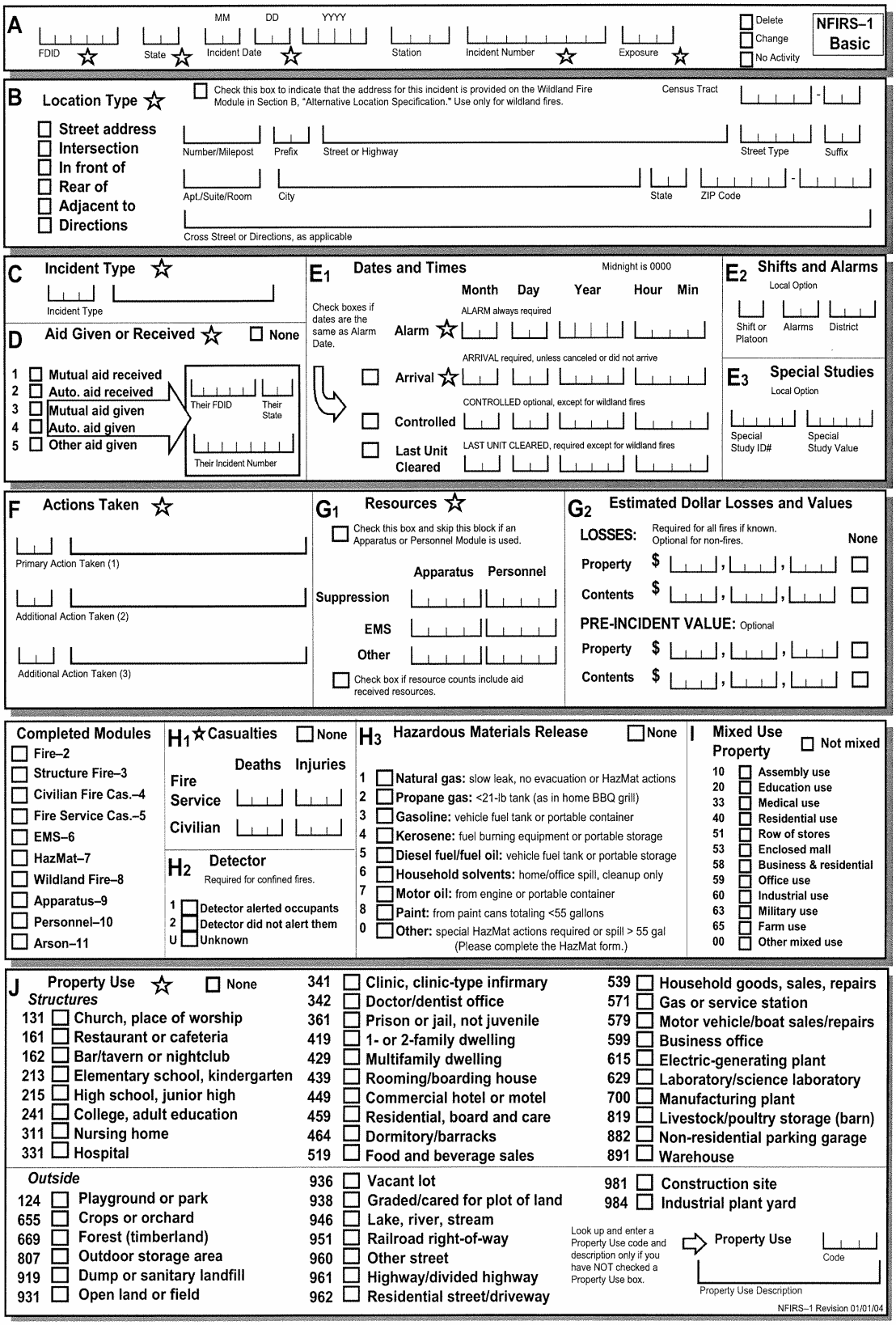
Slide 12-19

Slide 12-20

QUESTIONS ?

Slide 12-20

APPENDIX


A
FDID
State
MM DD YYYY
Incident Date
Station
Incident Number
Exposure
Delete
Change
No Activity
NFIRS–1 Basic
B Location Type
Check this box to indicate that the address for this incident is provided on the Wildland Fire Module in Section B, "Alternative Location Specification." Use only for wildland fires.
Census Tract
Street address
Intersection
In front of
Rear of
Adjacent to
Directions
Number/Milepost
Prefix
Street or Highway
Street Type
Suffix
Apt./Suite/Room
City
State
ZIP Code
Cross Street or Directions, as applicable
C Incident Type
Incident Type
D Aid Given or Received
None
1 Mutual aid received
2 Auto. aid received
3 Mutual aid given
4 Auto. aid given
5 Other aid given
Their FDID
Their State
Their Incident Number
E1 Dates and Times
Midnight is 0000
Month Day Year Hour Min
Check boxes if dates are the same as Alarm Date.
Alarm
ALARM always required
Arrival
ARRIVAL required, unless canceled or did not arrive
Controlled
CONTROLLED optional, except for wildland fires
Last Unit Cleared
LAST UNIT CLEARED, required except for wildland fires
E2 Shifts and Alarms
Local Option
Shift or Platoon
Alarms
District
E3 Special Studies
Local Option
Special Study ID#
Special Study Value
F Actions Taken
Primary Action Taken (1)
Additional Action Taken (2)
Additional Action Taken (3)
G1 Resources
Check this box and skip this block if an Apparatus or Personnel Module is used.
Apparatus Personnel
Suppression
EMS
Other
Check box if resource counts include aid received resources.
G2 Estimated Dollar Losses and Values
LOSSES: Required for all fires if known. Optional for non-fires.
None
Property $
Contents $
PRE-INCIDENT VALUE: Optional
Property $
Contents $
Completed Modules
Fire–2
Structure Fire–3
Civilian Fire Cas.–4
Fire Service Cas.–5
EMS–6
HazMat–7
Wildland Fire–8
Apparatus–9
Personnel–10
Arson–11
H1 Casualties
None
Deaths Injuries
Fire Service
Civilian
H2 Detector
Required for confined fires.
1 Detector alerted occupants
2 Detector did not alert them
U Unknown
H3 Hazardous Materials Release
None
1 Natural gas: slow leak, no evacuation or HazMat actions
2 Propane gas: <21-lb tank (as in home BBQ grill)
3 Gasoline: vehicle fuel tank or portable container
4 Kerosene: fuel burning equipment or portable storage
5 Diesel fuel/fuel oil: vehicle fuel tank or portable storage
6 Household solvents: home/office spill, cleanup only
7 Motor oil: from engine or portable container
8 Paint: from paint cans totaling <55 gallons
0 Other: special HazMat actions required or spill > 55 gal (Please complete the HazMat form.)
I Mixed Use Property
Not mixed
10 Assembly use
20 Education use
33 Medical use
40 Residential use
51 Row of stores
53 Enclosed mall
58 Business & residential
59 Office use
60 Industrial use
63 Military use
65 Farm use
00 Other mixed use
J Property Use
None
Structures
131 Church, place of worship
161 Restaurant or cafeteria
162 Bar/tavern or nightclub
213 Elementary school, kindergarten
215 High school, junior high
241 College, adult education
311 Nursing home
331 Hospital
341 Clinic, clinic-type infirmary
342 Doctor/dentist office
361 Prison or jail, not juvenile
419 1- or 2-family dwelling
429 Multifamily dwelling
439 Rooming/boarding house
449 Commercial hotel or motel
459 Residential, board and care
464 Dormitory/barracks
519 Food and beverage sales
539 Household goods, sales, repairs
571 Gas or service station
579 Motor vehicle/boat sales/repairs
599 Business office
615 Electric-generating plant
629 Laboratory/science laboratory
700 Manufacturing plant
819 Livestock/poultry storage (barn)
882 Non-residential parking garage
891 Warehouse
Outside
124 Playground or park
655 Crops or orchard
669 Forest (timberland)
807 Outdoor storage area
919 Dump or sanitary landfill
931 Open land or field
936 Vacant lot
938 Graded/cared for plot of land
946 Lake, river, stream
951 Railroad right-of-way
960 Other street
961 Highway/divided highway
962 Residential street/driveway
981 Construction site
984 Industrial plant yard
Look up and enter a Property Use code and description only if you have NOT checked a Property Use box.
Property Use
Code
Property Use Description
NFIRS–1 Revision 01/01/04

K1 Person/Entity Involved

Local Option

Business Name (if applicable) | Area Code | Phone Number

☐ Check this box if same address as incident Location (Section B). Then skip the three duplicate address lines.

Mr., Ms., Mrs. | First Name | MI | Last Name | Suffix

Number | Prefix | Street or Highway | Street Type | Suffix

Post Office Box | Apt./Suite/Room | City

State | ZIP Code

☐ **More people involved? Check this box and attach Supplemental Forms (NFIRS–1S) as necessary.**

K2 Owner

Local Option

☐ Same as person involved? Then check this box and skip the rest of this block.

Business Name (if applicable) | Area Code | Phone Number

☐ Check this box if same address as incident Location (Section B). Then skip the three duplicate address lines.

Mr., Ms., Mrs. | First Name | MI | Last Name | Suffix

Number | Prefix | Street or Highway | Street Type | Suffix

Post Office Box | Apt./Suite/Room | City

State | ZIP Code

L Remarks:

Local Option

Fire Module Required?

Check the box that applies and then complete the Fire Module based on Incident Type, as follows:

☐ Buildings 111	Complete Fire & Structure Modules
☐ Special structure 112	Complete Fire Module & Section I, Structure Module
☐ Confined 113–118	Basic Module Only
☐ Mobile property 120–123	Complete Fire & Structure Modules
☐ Vehicle 130–138	Complete Fire Module
☐ Vegetation 140–143	Complete Fire or Wildland Module
☐ Outside rubbish fire 150–155	Basic Module Only
☐ Special outside fire 160	Complete Fire or Wildland Module
☐ Special outside fire 161–163	Complete Fire Module
☐ Crop fire 170–173	Complete Fire or Wildland Module

ITEMS WITH A ☆ MUST **ALWAYS** BE COMPLETED!

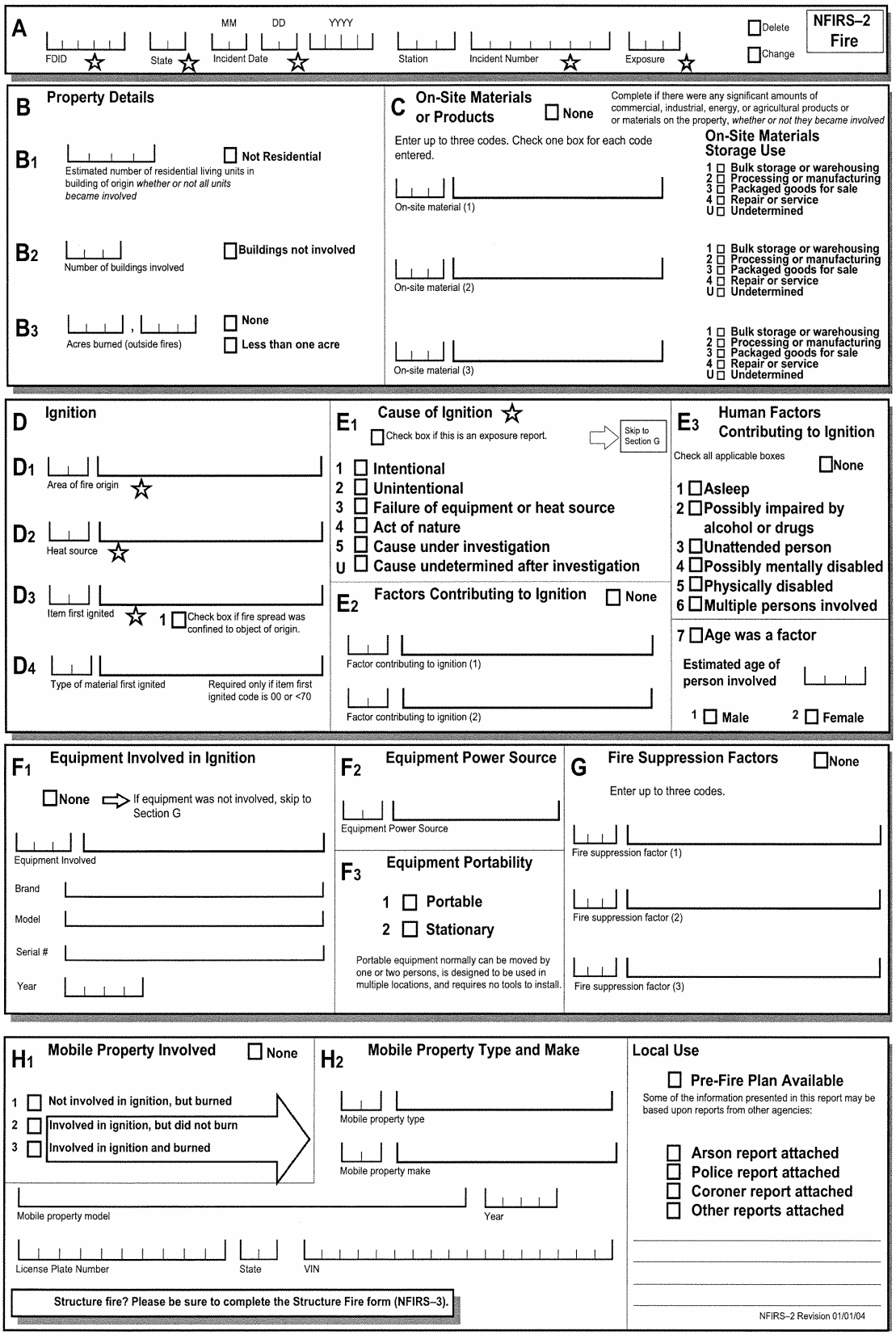
☐ **More remarks? Check this box and attach Supplemental Forms (NFIRS–1S) as necessary.**

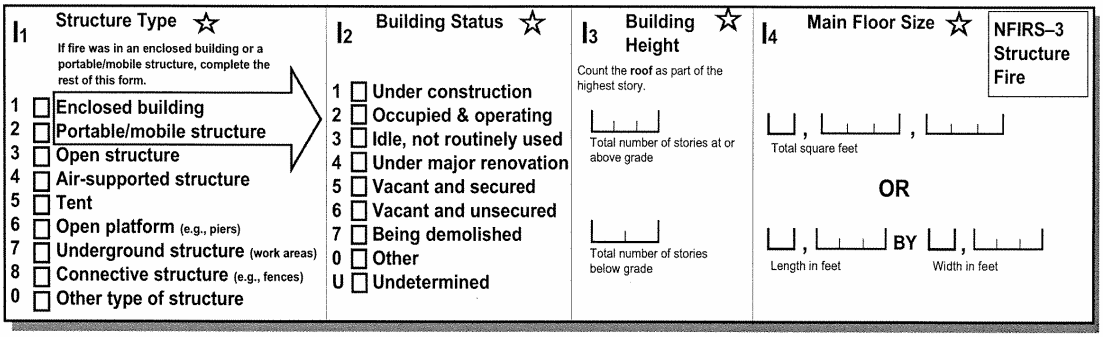
M Authorization

Officer in charge ID | Signature | Position or rank | Assignment | Month | Day | Year

Check box if same as Officer in charge. ⇨ ☐

Member making report ID | Signature | Position or rank | Assignment | Month | Day | Year


A
FDID
State
MM
DD
YYYY
Incident Date
Station
Incident Number
Exposure
Delete
Change
NFIRS–2
Fire
B
Property Details
B1
Not Residential
Estimated number of residential living units in building of origin whether or not all units became involved
B2
Buildings not involved
Number of buildings involved
B3
None
Less than one acre
Acres burned (outside fires)
C
On-Site Materials or Products
None
Complete if there were any significant amounts of commercial, industrial, energy, or agricultural products or or materials on the property, whether or not they became involved
Enter up to three codes. Check one box for each code entered.
On-site material (1)
On-site material (2)
On-site material (3)
On-Site Materials Storage Use
1 Bulk storage or warehousing
2 Processing or manufacturing
3 Packaged goods for sale
4 Repair or service
U Undetermined
D
Ignition
D1
Area of fire origin
D2
Heat source
D3
Item first ignited
1 Check box if fire spread was confined to object of origin.
D4
Type of material first ignited
Required only if item first ignited code is 00 or <70
E1
Cause of Ignition
Check box if this is an exposure report.
Skip to Section G
1 Intentional
2 Unintentional
3 Failure of equipment or heat source
4 Act of nature
5 Cause under investigation
U Cause undetermined after investigation
E2
Factors Contributing to Ignition
None
Factor contributing to ignition (1)
Factor contributing to ignition (2)
E3
Human Factors Contributing to Ignition
Check all applicable boxes
None
1 Asleep
2 Possibly impaired by alcohol or drugs
3 Unattended person
4 Possibly mentally disabled
5 Physically disabled
6 Multiple persons involved
7 Age was a factor
Estimated age of person involved
1 Male
2 Female
F1
Equipment Involved in Ignition
None
If equipment was not involved, skip to Section G
Equipment Involved
Brand
Model
Serial #
Year
F2
Equipment Power Source
Equipment Power Source
F3
Equipment Portability
1 Portable
2 Stationary
Portable equipment normally can be moved by one or two persons, is designed to be used in multiple locations, and requires no tools to install.
G
Fire Suppression Factors
None
Enter up to three codes.
Fire suppression factor (1)
Fire suppression factor (2)
Fire suppression factor (3)
H1
Mobile Property Involved
None
1 Not involved in ignition, but burned
2 Involved in ignition, but did not burn
3 Involved in ignition and burned
H2
Mobile Property Type and Make
Mobile property type
Mobile property make
Mobile property model
Year
License Plate Number
State
VIN
Structure fire? Please be sure to complete the Structure Fire form (NFIRS–3).
Local Use
Pre-Fire Plan Available
Some of the information presented in this report may be based upon reports from other agencies:
Arson report attached
Police report attached
Coroner report attached
Other reports attached
NFIRS–2 Revision 01/01/04



I1 Structure Type ☆

If fire was in an enclosed building or a portable/mobile structure, complete the rest of this form.

1 ☐ Enclosed building
2 ☐ Portable/mobile structure
3 ☐ Open structure
4 ☐ Air-supported structure
5 ☐ Tent
6 ☐ Open platform (e.g., piers)
7 ☐ Underground structure (work areas)
8 ☐ Connective structure (e.g., fences)
0 ☐ Other type of structure

I2 Building Status ☆

1 ☐ Under construction
2 ☐ Occupied & operating
3 ☐ Idle, not routinely used
4 ☐ Under major renovation
5 ☐ Vacant and secured
6 ☐ Vacant and unsecured
7 ☐ Being demolished
0 ☐ Other
U ☐ Undetermined

I3 Building Height ☆

Count the **roof** as part of the highest story.

Total number of stories at or above grade

Total number of stories below grade

I4 Main Floor Size ☆

NFIRS–3 Structure Fire

Total square feet

OR

Length in feet BY Width in feet

J1 Fire Origin ☆

Story of fire origin

☐ Below grade

J2 Fire Spread ☆

If fire spread was confined to object of origin, do not check a box (Ref. Block D3, Fire Module).

2 ☐ Confined to room of origin
3 ☐ Confined to floor of origin
4 ☐ Confined to building of origin
5 ☐ Beyond building of origin

J3 Number of Stories Damaged by Flame

Count the **roof** as part of the highest story.

Number of stories w/minor damage (1 to 24% flame damage)

Number of stories w/significant damage (25 to 49% flame damage)

Number of stories w/heavy damage (50 to 74% flame damage)

Number of stories w/extreme damage (75 to 100% flame damage)

K Type of Material Contributing Most to Flame Spread

☐ Check if no flame spread **OR** if same as Material First Ignited (Block D4, Fire Module) **OR** if unable to determine. → Skip to Section L

K1

Item contributing most to flame spread

K2

Type of material contributing most to flame spread

Required only if item contributing code is 00 or <70.

L1 Presence of Detectors ☆

(In area of the fire)

N ☐ None Present → Skip to Section M
1 ☐ Present
U ☐ Undetermined

L2 Detector Type

1 ☐ Smoke
2 ☐ Heat
3 ☐ Combination smoke and heat
4 ☐ Sprinkler, water flow detection
5 ☐ More than one type present
0 ☐ Other
U ☐ Undetermined

L3 Detector Power Supply

1 ☐ Battery only
2 ☐ Hardwire only
3 ☐ Plug-in
4 ☐ Hardwire with battery
5 ☐ Plug-in with battery
6 ☐ Mechanical
7 ☐ Multiple detectors & power supplies
0 ☐ Other
U ☐ Undetermined

L4 Detector Operation

1 ☐ Fire too small to activate
2 ☐ Operated → Complete Block L5
3 ☐ Failed to operate → Complete Block L6
U ☐ Undetermined

L5 Detector Effectiveness

Required if detector operated.

1 ☐ Alerted occupants, occupants responded
2 ☐ Alerted occupants, occupants failed to respond
3 ☐ There were no occupants
4 ☐ Failed to alert occupants
U ☐ Undetermined

L6 Detector Failure Reason

Required if detector failed to operate

1 ☐ Power failure, shutoff, or disconnect
2 ☐ Improper installation or placement
3 ☐ Defective
4 ☐ Lack of maintenance, includes not cleaning
5 ☐ Battery missing or disconnected
6 ☐ Battery discharged or dead
0 ☐ Other
U ☐ Undetermined

M1 Presence of Automatic Extinguishing System ☆

N ☐ None Present
1 ☐ Present → Complete rest of Section M
U ☐ Undetermined

M2 Type of Automatic Extinguishing System

Required if fire was within designed range of AES

1 ☐ Wet-pipe sprinkler
2 ☐ Dry-pipe sprinkler
3 ☐ Other sprinkler system
4 ☐ Dry chemical system
5 ☐ Foam system
6 ☐ Halogen-type system
7 ☐ Carbon dioxide (CO_2) system
0 ☐ Other special hazard system
U ☐ Undetermined

M3 Operation of Automatic Extinguishing System

Required if fire was within designed range

1 ☐ Operated/effective (go to M4)
2 ☐ Operated/not effective (go to M4)
3 ☐ Fire too small to activate
4 ☐ Failed to operate (go to M5)
0 ☐ Other
U ☐ Undetermined

M4 Number of Sprinkler Heads Operating

Required if system operated

Number of sprinkler heads operating

M5 Reason for Automatic Extinguishing System Failure

Required if system failed or not effective

1 ☐ System shut off
2 ☐ Not enough agent discharged
3 ☐ Agent discharged but did not reach fire
4 ☐ Wrong type of system
5 ☐ Fire not in area protected
6 ☐ System components damaged
7 ☐ Lack of maintenance
8 ☐ Manual intervention
0 ☐ Other
U ☐ Undetermined

NFIRS–3 Revision 01/01/04

A FDID ☆ | State ☆ | Incident Date (MM DD YYYY) ☆ | Station | Incident Number ☆ | Exposure ☆ | ☐ Delete ☐ Change | **NFIRS–4 Civilian Fire Casualty**

B Injured Person — ☆ Gender: 1 ☐ Male 2 ☐ Female
First Name | MI | Last Name | Suffix

C Casualty Number ☆
Casualty Number

D Age or Date of Birth ☆
Age ☐ Months (for infants)
OR
Date of Birth: Month Day Year

E1 Race
1 ☐ White
2 ☐ Black, African American
3 ☐ Am. Indian, Alaska Native
4 ☐ Asian
5 ☐ Native Hawaiian, Other Pacific Islander
0 ☐ Other, multiracial
U ☐ Undetermined

E2 Ethnicity
1 ☐ Hispanic or Latino
0 ☐ Non Hispanic or Latino

F Affiliation
1 ☐ Civilian
2 ☐ EMS, not fire department
3 ☐ Police
0 ☐ Other

G Date and Time of Injury (Midnight is 0000.)
Date of Injury: Month Day Year — Time of Injury: Hour Minute

H Severity ☆
1 ☐ Minor
2 ☐ Moderate
3 ☐ Severe
4 ☐ Life threatening
5 ☐ Death
U ☐ Undetermined

I Cause of Injury
1 ☐ Exposed to fire products including flame heat, smoke, and gas
2 ☐ Exposed to toxic fumes other than smoke
3 ☐ Jumped in escape attempt
4 ☐ Fell, slipped, or tripped
5 ☐ Caught or trapped
6 ☐ Structural collapse
7 ☐ Struck by or contact with object
8 ☐ Overexertion or strain
9 ☐ Multiple causes
0 ☐ Other
U ☐ Undetermined

J Human Factors Contributing to Injury ☐ None
Check all applicable boxes
1 ☐ Asleep
2 ☐ Unconscious
3 ☐ Possibly impaired by alcohol
4 ☐ Possibly impaired by other drug
5 ☐ Possibly mentally disabled
6 ☐ Physically disabled
7 ☐ Physically restrained
8 ☐ Unattended person

K Factors Contributing to Injury ☐ None
Enter up to three contributing factors
Contributing factor (1)
Contributing factor (2)
Contributing factor (3)

L Activity When Injured
1 ☐ Escaping
2 ☐ Rescue attempt
3 ☐ Fire control
4 ☐ Return to fire before control
5 ☐ Return to fire after control
6 ☐ Sleeping
7 ☐ Unable to act
8 ☐ Irrational act
0 ☐ Other
U ☐ Undetermined

M1 Location at Time of Incident
1 ☐ In area of origin and not involved
2 ☐ Not in area of origin and not involved
3 ☐ Not in area of origin, but involved
4 ☐ In area of origin and involved
0 ☐ Other location
U ☐ Undetermined

M2 General Location at Time of Injury
1 ☐ In area of fire origin → Skip to Section N
2 ☐ In building, but not in area
3 ☐ Outside, but not in area → Skip to Block M5
U ☐ Undetermined

M3 Story at Start of Incident
Complete ONLY if injury occurred INSIDE
Story at start of incident ☐ Below grade

M4 Story Where Injury Occurred
Story where injury occurred, if different from M3 ☐ Below grade

M5 Specific Location at Time of Injury
Complete ONLY if casualty NOT in area of origin
Specific location at time of injury

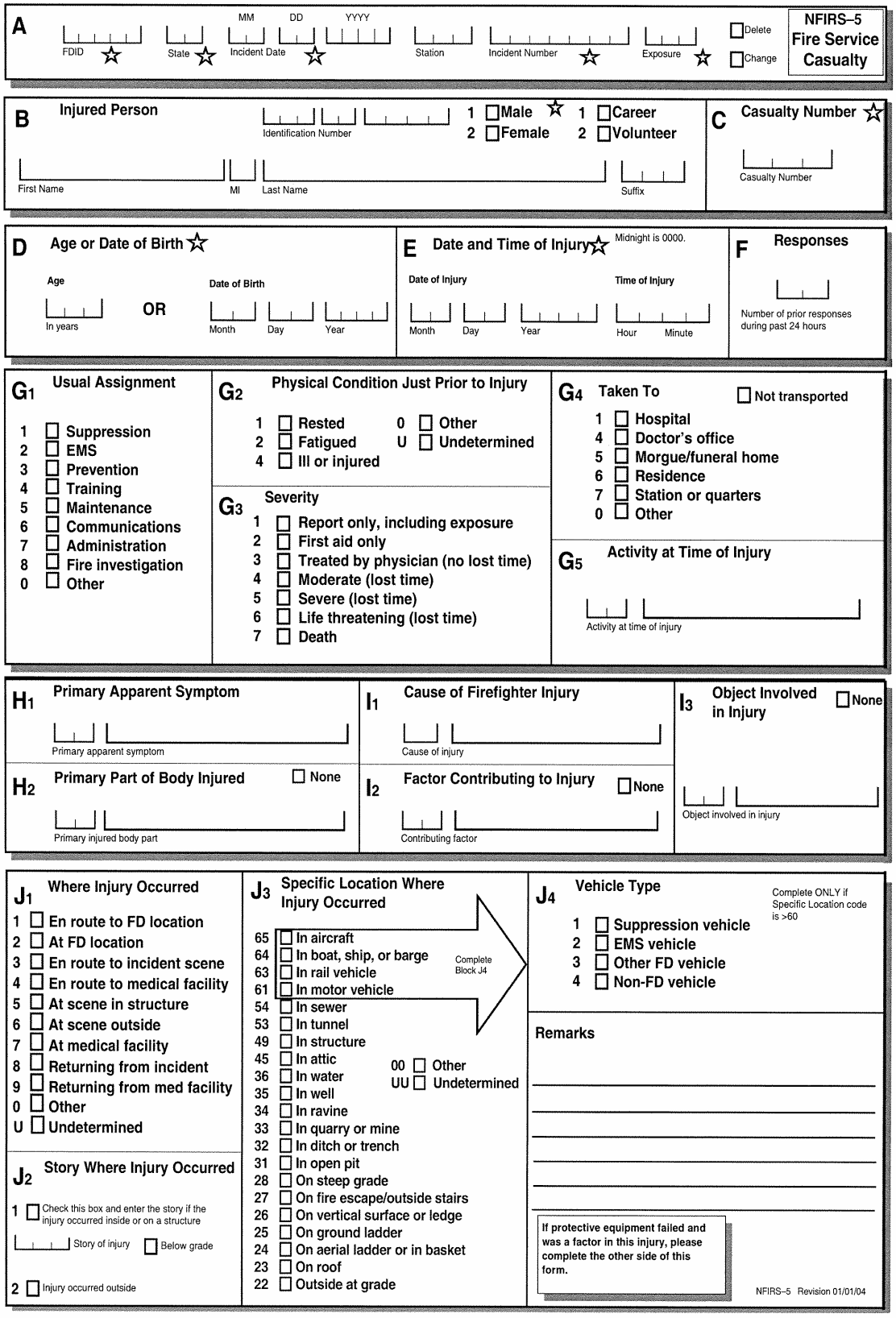
N Primary Apparent Symptom
01 ☐ Smoke only, asphyxiation
11 ☐ Burns and smoke inhalation
12 ☐ Burns only
21 ☐ Cut, laceration
33 ☐ Strain or sprain
96 ☐ Shock
98 ☐ Pain only
Look up a code only if the symptom is NOT found above
Primary apparent symptom

O Primary Area of Body Injured
1 ☐ Head
2 ☐ Neck and shoulder
3 ☐ Thorax
4 ☐ Abdomen
5 ☐ Spine
6 ☐ Upper extremities
7 ☐ Lower extremities
8 ☐ Internal
9 ☐ Multiple body parts

P Disposition
☐ Transported to emergency care facility

Remarks — Local option

NFIRS–4 Revision 01/01/04


A
FDID
State
MM DD YYYY
Incident Date
Station
Incident Number
Exposure
Delete
Change
NFIRS–5
Fire Service
Casualty
B
Injured Person
Identification Number
1 Male
2 Female
1 Career
2 Volunteer
First Name
MI
Last Name
Suffix
C
Casualty Number
Casualty Number
D
Age or Date of Birth
Age
In years
OR
Date of Birth
Month
Day
Year
E
Date and Time of Injury
Midnight is 0000.
Date of Injury
Month
Day
Year
Time of Injury
Hour
Minute
F
Responses
Number of prior responses during past 24 hours
G1
Usual Assignment
1 Suppression
2 EMS
3 Prevention
4 Training
5 Maintenance
6 Communications
7 Administration
8 Fire investigation
0 Other
G2
Physical Condition Just Prior to Injury
1 Rested
2 Fatigued
4 Ill or injured
0 Other
U Undetermined
G3
Severity
1 Report only, including exposure
2 First aid only
3 Treated by physician (no lost time)
4 Moderate (lost time)
5 Severe (lost time)
6 Life threatening (lost time)
7 Death
G4
Taken To
Not transported
1 Hospital
4 Doctor's office
5 Morgue/funeral home
6 Residence
7 Station or quarters
0 Other
G5
Activity at Time of Injury
Activity at time of injury
H1
Primary Apparent Symptom
Primary apparent symptom
H2
Primary Part of Body Injured
None
Primary injured body part
I1
Cause of Firefighter Injury
Cause of injury
I2
Factor Contributing to Injury
None
Contributing factor
I3
Object Involved in Injury
None
Object involved in injury
J1
Where Injury Occurred
1 En route to FD location
2 At FD location
3 En route to incident scene
4 En route to medical facility
5 At scene in structure
6 At scene outside
7 At medical facility
8 Returning from incident
9 Returning from med facility
0 Other
U Undetermined
J2
Story Where Injury Occurred
1 Check this box and enter the story if the injury occurred inside or on a structure
Story of injury
Below grade
2 Injury occurred outside
J3
Specific Location Where Injury Occurred
Complete Block J4
65 In aircraft
64 In boat, ship, or barge
63 In rail vehicle
61 In motor vehicle
54 In sewer
53 In tunnel
49 In structure
45 In attic
36 In water
35 In well
34 In ravine
33 In quarry or mine
32 In ditch or trench
31 In open pit
28 On steep grade
27 On fire escape/outside stairs
26 On vertical surface or ledge
25 On ground ladder
24 On aerial ladder or in basket
23 On roof
22 Outside at grade
00 Other
UU Undetermined
J4
Vehicle Type
Complete ONLY if Specific Location code is >60
1 Suppression vehicle
2 EMS vehicle
3 Other FD vehicle
4 Non-FD vehicle
Remarks
If protective equipment failed and was a factor in this injury, please complete the other side of this form.
NFIRS–5 Revision 01/01/04

K1 Did protective equipment fail and contribute to the injury? Yes Y☐ No N☐

Please complete the remainder of this form ONLY if you answer YES.

Equipment Sequence Number ☐☐

NFIRS–5 Fire Service Casualty

K2 Protective Equipment Item

Head or Face Protection

- 11 ☐ Helmet
- 12 ☐ Full face protector
- 13 ☐ Partial face protector
- 14 ☐ Goggles/eye protection
- 15 ☐ Hood
- 16 ☐ Ear protector
- 17 ☐ Neck protector
- 10 ☐ Other

Coat, Shirt, or Trousers

- 21 ☐ Protective coat
- 22 ☐ Protective trousers
- 23 ☐ Uniform shirt
- 24 ☐ Uniform T-shirt
- 25 ☐ Uniform trousers
- 26 ☐ Uniform coat or jacket
- 27 ☐ Coveralls
- 28 ☐ Apron or gown
- 20 ☐ Other

Boots or Shoes

- 31 ☐ Knee length boots with steel baseplate and steel toes
- 32 ☐ Knee length boots with steel toes only
- 33 ☐ 3/4 length boots with steel baseplate and steel toes
- 34 ☐ 3/4 length boots with steel toes only
- 35 ☐ Boots without steel baseplate and steel toes
- 36 ☐ Safety shoes with steel baseplate and steel toes
- 37 ☐ Safety shoes with steel toes only
- 38 ☐ Non-safety shoes
- 30 ☐ Other

Respiratory Protection

- 41 ☐ SCBA (demand) open circuit
- 42 ☐ SCBA (positive pressure) open circuit
- 43 ☐ SCBA closed circuit
- 44 ☐ Not self-contained
- 45 ☐ Cartridge respirator
- 46 ☐ Dust or particle mask
- 40 ☐ Other

Hand Protection

- 51 ☐ Firefighter gloves with wristlets
- 52 ☐ Firefighter gloves without wristlets
- 53 ☐ Work gloves
- 54 ☐ HazMat gloves
- 55 ☐ Medical gloves
- 50 ☐ Other

Special Equipment

- 61 ☐ Proximity suit for entry
- 62 ☐ Proximity suit for non-entry
- 63 ☐ Totally encapsulated, reusable chemical suit
- 64 ☐ Totally encapsulated, disposable chemical suit
- 65 ☐ Partially encapsulated, reusable chemical suit
- 66 ☐ Partially encapsulated, disposable chemical suit
- 67 ☐ Flash protection suit
- 68 ☐ Flight or jump suit
- 69 ☐ Brush suit
- 71 ☐ Exposure suit
- 72 ☐ Self-contained underwater breathing apparatus (SCUBA)
- 73 ☐ Life preserver
- 74 ☐ Life belt or ladder belt
- 75 ☐ Personal alert safety system (PASS)
- 76 ☐ Radio distress device
- 77 ☐ Personal lighting
- 78 ☐ Fire shelter or tent
- 79 ☐ Vehicle safety belt
- 70 ☐ Special equipment, other
- 00 ☐ Protective equipment, other

Was the failure of more than one item of protective equipment a factor in the injury? If so, complete an additional page of this form for each piece of failed equipment.

K3 Protective Equipment Problem

Check one box to indicate the main problem that occurred.

- 11 ☐ Burned
- 12 ☐ Melted
- 21 ☐ Fractured, cracked or broken
- 22 ☐ Punctured
- 23 ☐ Scratched
- 24 ☐ Knocked off
- 25 ☐ Cut or ripped
- 31 ☐ Trapped steam or hazardous gas
- 32 ☐ Insufficient insulation
- 33 ☐ Object fell in or onto equipment item
- 41 ☐ Failed under impact
- 42 ☐ Face piece or hose detached
- 43 ☐ Exhalation valve inoperative or damaged
- 44 ☐ Harness detached or separated
- 45 ☐ Regulator failed to operate
- 46 ☐ Regulator damaged by contact
- 47 ☐ Problem with admissions valve
- 48 ☐ Alarm failed to operate
- 49 ☐ Alarm damaged by contact
- 51 ☐ Supply cylinder or valve failed to operate
- 52 ☐ Supply cylinder/valve damaged by contact
- 53 ☐ Supply cylinder—insufficient air/oxygen
- 94 ☐ Did not fit properly
- 95 ☐ Not properly serviced or stored prior to use
- 96 ☐ Not used for designed purpose
- 97 ☐ Not used as recommended by manufacturer
- 00 ☐ Other equipment problem
- UU ☐ Undetermined

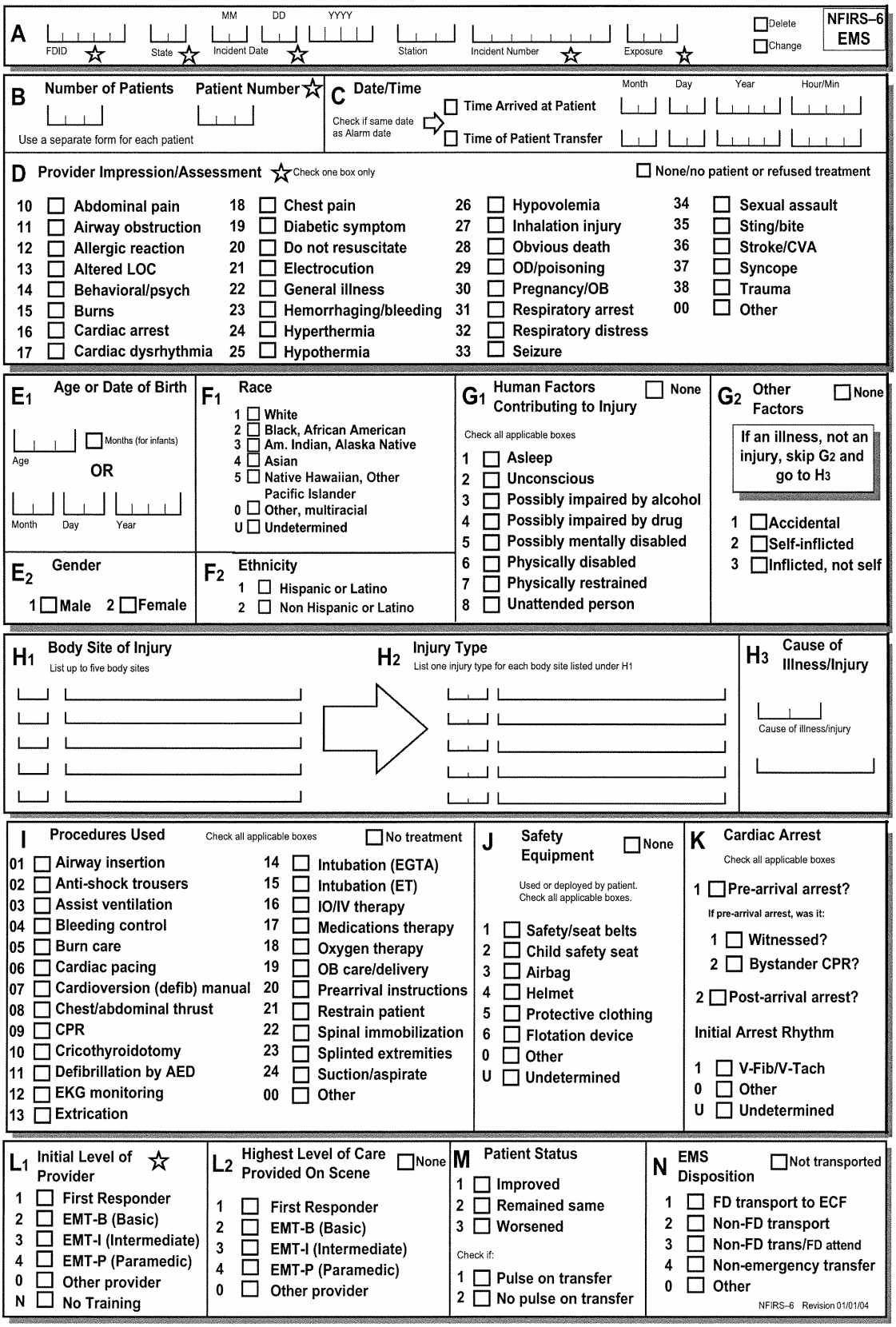
K4 Equipment Manufacturer, Model and Serial Number

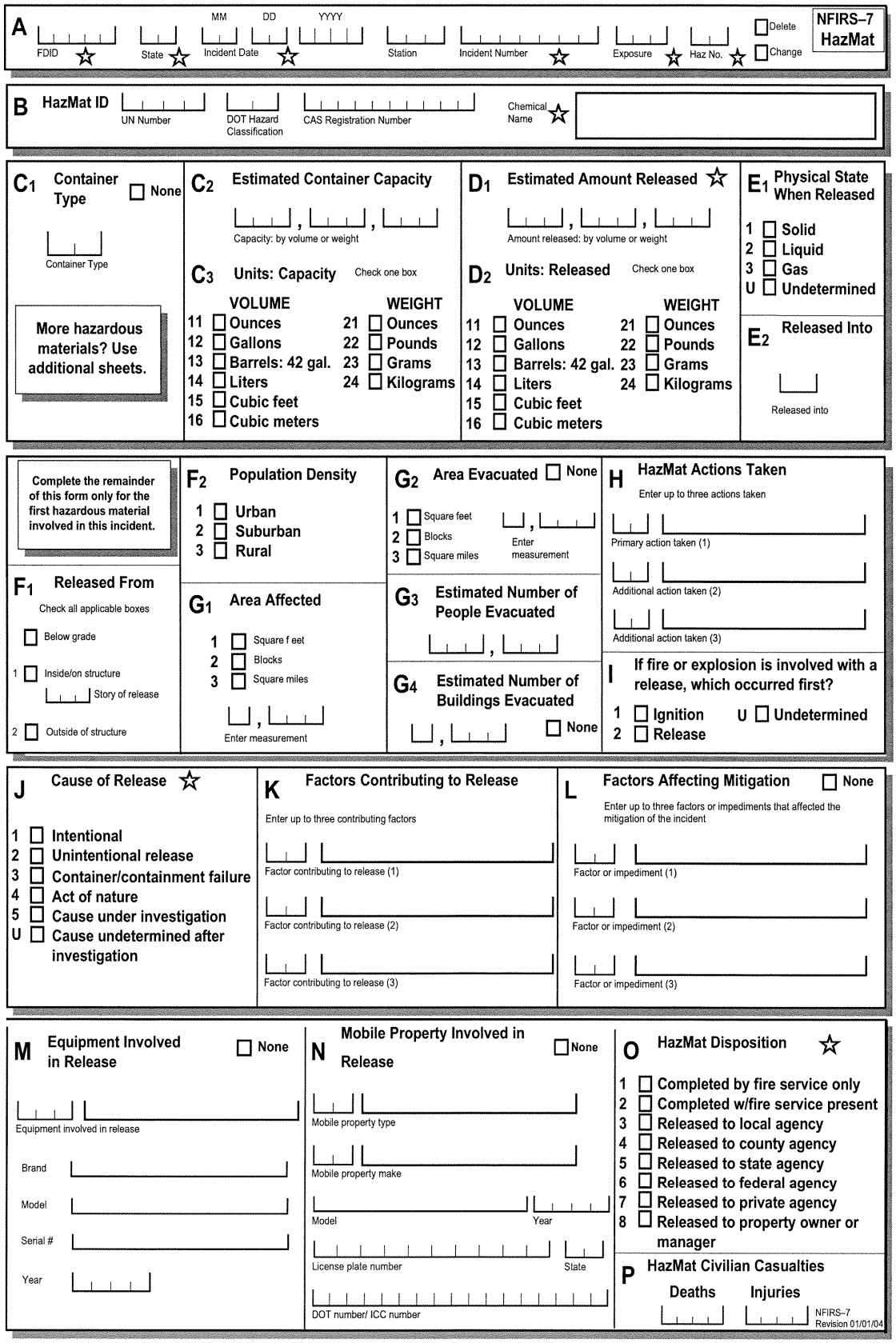
Manufacturer ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

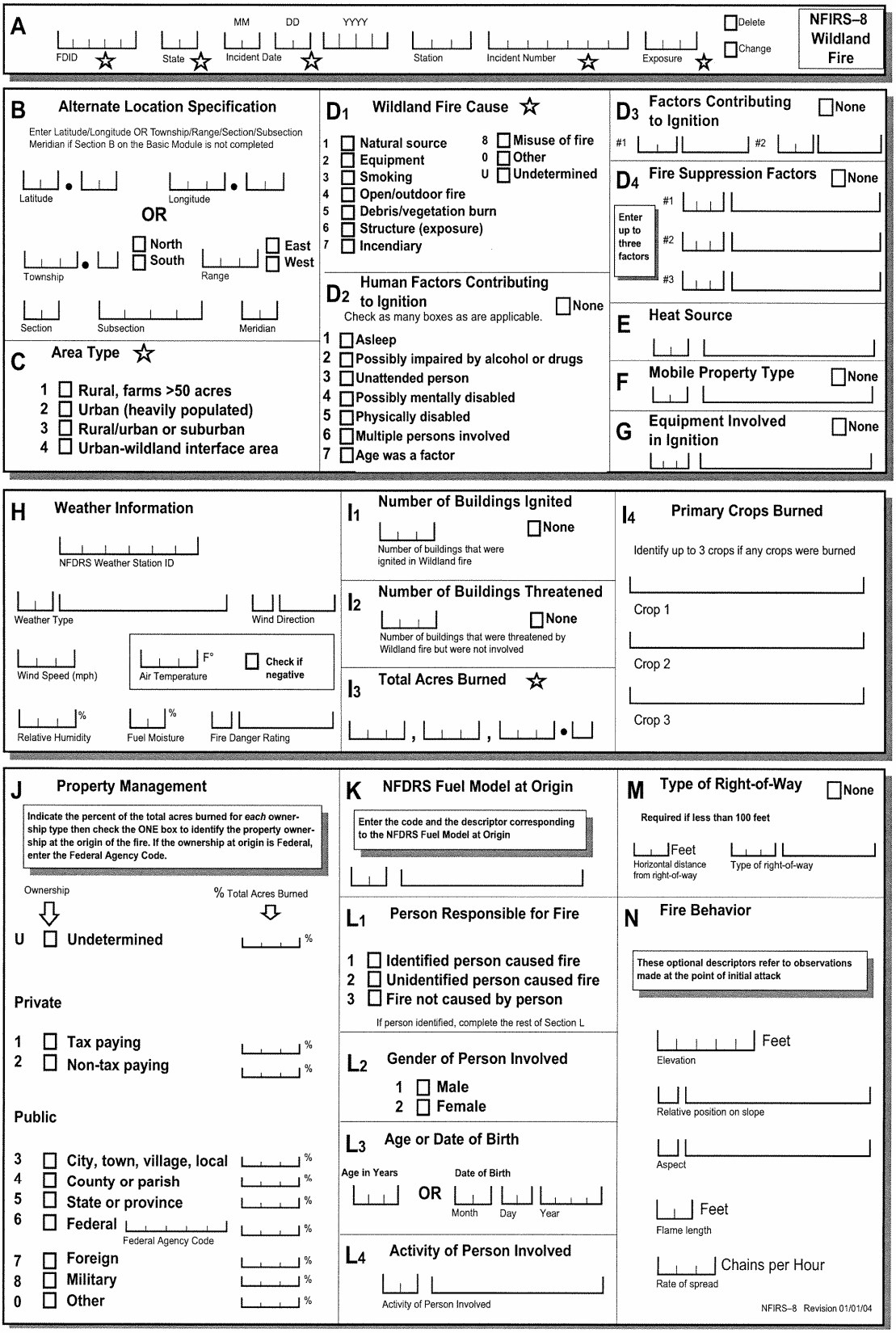
Model ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Serial Number ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

NFIRS–5 Revision 05/01/03


A
FDID
State
MM
DD
YYYY
Incident Date
Station
Incident Number
Exposure
Delete
Change
NFIRS–6
EMS
B
Number of Patients
Patient Number
Use a separate form for each patient
C
Date/Time
Check if same date as Alarm date
Time Arrived at Patient
Time of Patient Transfer
Month
Day
Year
Hour/Min
D
Provider Impression/Assessment
Check one box only
None/no patient or refused treatment
10 Abdominal pain
11 Airway obstruction
12 Allergic reaction
13 Altered LOC
14 Behavioral/psych
15 Burns
16 Cardiac arrest
17 Cardiac dysrhythmia
18 Chest pain
19 Diabetic symptom
20 Do not resuscitate
21 Electrocution
22 General illness
23 Hemorrhaging/bleeding
24 Hyperthermia
25 Hypothermia
26 Hypovolemia
27 Inhalation injury
28 Obvious death
29 OD/poisoning
30 Pregnancy/OB
31 Respiratory arrest
32 Respiratory distress
33 Seizure
34 Sexual assault
35 Sting/bite
36 Stroke/CVA
37 Syncope
38 Trauma
00 Other
E1
Age or Date of Birth
Months (for infants)
Age
OR
Month
Day
Year
F1
Race
1 White
2 Black, African American
3 Am. Indian, Alaska Native
4 Asian
5 Native Hawaiian, Other Pacific Islander
0 Other, multiracial
U Undetermined
E2
Gender
1 Male
2 Female
F2
Ethnicity
1 Hispanic or Latino
2 Non Hispanic or Latino
G1
Human Factors Contributing to Injury
None
Check all applicable boxes
1 Asleep
2 Unconscious
3 Possibly impaired by alcohol
4 Possibly impaired by drug
5 Possibly mentally disabled
6 Physically disabled
7 Physically restrained
8 Unattended person
G2
Other Factors
None
If an illness, not an injury, skip G2 and go to H3
1 Accidental
2 Self-inflicted
3 Inflicted, not self
H1
Body Site of Injury
List up to five body sites
H2
Injury Type
List one injury type for each body site listed under H1
H3
Cause of Illness/Injury
Cause of illness/injury
I
Procedures Used
Check all applicable boxes
No treatment
01 Airway insertion
02 Anti-shock trousers
03 Assist ventilation
04 Bleeding control
05 Burn care
06 Cardiac pacing
07 Cardioversion (defib) manual
08 Chest/abdominal thrust
09 CPR
10 Cricothyroidotomy
11 Defibrillation by AED
12 EKG monitoring
13 Extrication
14 Intubation (EGTA)
15 Intubation (ET)
16 IO/IV therapy
17 Medications therapy
18 Oxygen therapy
19 OB care/delivery
20 Prearrival instructions
21 Restrain patient
22 Spinal immobilization
23 Splinted extremities
24 Suction/aspirate
00 Other
J
Safety Equipment
None
Used or deployed by patient.
Check all applicable boxes.
1 Safety/seat belts
2 Child safety seat
3 Airbag
4 Helmet
5 Protective clothing
6 Flotation device
0 Other
U Undetermined
K
Cardiac Arrest
Check all applicable boxes
1 Pre-arrival arrest?
If pre-arrival arrest, was it:
1 Witnessed?
2 Bystander CPR?
2 Post-arrival arrest?
Initial Arrest Rhythm
1 V-Fib/V-Tach
0 Other
U Undetermined
L1
Initial Level of Provider
1 First Responder
2 EMT-B (Basic)
3 EMT-I (Intermediate)
4 EMT-P (Paramedic)
0 Other provider
N No Training
L2
Highest Level of Care Provided On Scene
None
1 First Responder
2 EMT-B (Basic)
3 EMT-I (Intermediate)
4 EMT-P (Paramedic)
0 Other provider
M
Patient Status
1 Improved
2 Remained same
3 Worsened
Check if:
1 Pulse on transfer
2 No pulse on transfer
N
EMS Disposition
Not transported
1 FD transport to ECF
2 Non-FD transport
3 Non-FD trans/FD attend
4 Non-emergency transfer
0 Other
NFIRS–6 Revision 01/01/04


A
FDID
State
MM
DD
YYYY
Incident Date
Station
Incident Number
Exposure
Haz No.
Delete
Change
NFIRS–7
HazMat
B HazMat ID
UN Number
DOT Hazard Classification
CAS Registration Number
Chemical Name
C1 Container Type
None
Container Type
More hazardous materials? Use additional sheets.
C2 Estimated Container Capacity
Capacity: by volume or weight
C3 Units: Capacity
Check one box
VOLUME
11 Ounces
12 Gallons
13 Barrels: 42 gal.
14 Liters
15 Cubic feet
16 Cubic meters
WEIGHT
21 Ounces
22 Pounds
23 Grams
24 Kilograms
D1 Estimated Amount Released
Amount released: by volume or weight
D2 Units: Released
Check one box
VOLUME
11 Ounces
12 Gallons
13 Barrels: 42 gal.
14 Liters
15 Cubic feet
16 Cubic meters
WEIGHT
21 Ounces
22 Pounds
23 Grams
24 Kilograms
E1 Physical State When Released
1 Solid
2 Liquid
3 Gas
U Undetermined
E2 Released Into
Released into
Complete the remainder of this form only for the first hazardous material involved in this incident.
F1 Released From
Check all applicable boxes
Below grade
1 Inside/on structure
Story of release
2 Outside of structure
F2 Population Density
1 Urban
2 Suburban
3 Rural
G1 Area Affected
1 Square f eet
2 Blocks
3 Square miles
Enter measurement
G2 Area Evacuated
None
1 Square feet
2 Blocks
3 Square miles
Enter measurement
G3 Estimated Number of People Evacuated
G4 Estimated Number of Buildings Evacuated
None
H HazMat Actions Taken
Enter up to three actions taken
Primary action taken (1)
Additional action taken (2)
Additional action taken (3)
I If fire or explosion is involved with a release, which occurred first?
1 Ignition
2 Release
U Undetermined
J Cause of Release
1 Intentional
2 Unintentional release
3 Container/containment failure
4 Act of nature
5 Cause under investigation
U Cause undetermined after investigation
K Factors Contributing to Release
Enter up to three contributing factors
Factor contributing to release (1)
Factor contributing to release (2)
Factor contributing to release (3)
L Factors Affecting Mitigation
None
Enter up to three factors or impediments that affected the mitigation of the incident
Factor or impediment (1)
Factor or impediment (2)
Factor or impediment (3)
M Equipment Involved in Release
None
Equipment involved in release
Brand
Model
Serial #
Year
N Mobile Property Involved in Release
None
Mobile property type
Mobile property make
Model
Year
License plate number
State
DOT number/ ICC number
O HazMat Disposition
1 Completed by fire service only
2 Completed w/fire service present
3 Released to local agency
4 Released to county agency
5 Released to state agency
6 Released to federal agency
7 Released to private agency
8 Released to property owner or manager
P HazMat Civilian Casualties
Deaths
Injuries
NFIRS–7
Revision 01/01/04


A
FDID
State
MM
DD
YYYY
Incident Date
Station
Incident Number
Exposure
Delete
Change
NFIRS–8 Wildland Fire
B Alternate Location Specification
Enter Latitude/Longitude OR Township/Range/Section/Subsection Meridian if Section B on the Basic Module is not completed
Latitude
Longitude
OR
North
South
East
West
Township
Range
Section
Subsection
Meridian
C Area Type
1 Rural, farms >50 acres
2 Urban (heavily populated)
3 Rural/urban or suburban
4 Urban-wildland interface area
D1 Wildland Fire Cause
1 Natural source
2 Equipment
3 Smoking
4 Open/outdoor fire
5 Debris/vegetation burn
6 Structure (exposure)
7 Incendiary
8 Misuse of fire
0 Other
U Undetermined
D2 Human Factors Contributing to Ignition
None
Check as many boxes as are applicable.
1 Asleep
2 Possibly impaired by alcohol or drugs
3 Unattended person
4 Possibly mentally disabled
5 Physically disabled
6 Multiple persons involved
7 Age was a factor
D3 Factors Contributing to Ignition
None
#1
#2
D4 Fire Suppression Factors
None
Enter up to three factors
#1
#2
#3
E Heat Source
F Mobile Property Type
None
G Equipment Involved in Ignition
None
H Weather Information
NFDRS Weather Station ID
Weather Type
Wind Direction
Wind Speed (mph)
Air Temperature
F°
Check if negative
Relative Humidity
Fuel Moisture
Fire Danger Rating
I1 Number of Buildings Ignited
None
Number of buildings that were ignited in Wildland fire
I2 Number of Buildings Threatened
None
Number of buildings that were threatened by Wildland fire but were not involved
I3 Total Acres Burned
I4 Primary Crops Burned
Identify up to 3 crops if any crops were burned
Crop 1
Crop 2
Crop 3
J Property Management
Indicate the percent of the total acres burned for each ownership type then check the ONE box to identify the property ownership at the origin of the fire. If the ownership at origin is Federal, enter the Federal Agency Code.
Ownership
% Total Acres Burned
U Undetermined
Private
1 Tax paying
2 Non-tax paying
Public
3 City, town, village, local
4 County or parish
5 State or province
6 Federal
Federal Agency Code
7 Foreign
8 Military
0 Other
K NFDRS Fuel Model at Origin
Enter the code and the descriptor corresponding to the NFDRS Fuel Model at Origin
L1 Person Responsible for Fire
1 Identified person caused fire
2 Unidentified person caused fire
3 Fire not caused by person
If person identified, complete the rest of Section L
L2 Gender of Person Involved
1 Male
2 Female
L3 Age or Date of Birth
Age in Years
OR
Date of Birth
Month
Day
Year
L4 Activity of Person Involved
Activity of Person Involved
M Type of Right-of-Way
None
Required if less than 100 feet
Feet
Horizontal distance from right-of-way
Type of right-of-way
N Fire Behavior
These optional descriptors refer to observations made at the point of initial attack
Feet
Elevation
Relative position on slope
Aspect
Feet
Flame length
Chains per Hour
Rate of spread
NFIRS–8 Revision 01/01/04

A FDID ☆ | State ☆ | Incident Date (MM DD YYYY) ☆ | Station | Incident Number ☆ | Exposure ☆ | ☐ Delete ☐ Change | **NFIRS–9 Apparatus or Resources**

B Apparatus or Resources (Use codes listed below)	Dates and Times (Midnight is 0000; Check if same date as Alarm date on the Basic Module (Block E1))	Sent [X]	Number of ☆ People	Apparatus Use ☆ (Check ONE box for each apparatus to indicate its main use at the incident.)	Actions Taken (List up to 4 actions for each apparatus.)
1 ID ☆ Type	Dispatch ☐ Month Day Year Hour/Min Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	
2 ID ☆ Type	Dispatch ☐ Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	
3 ID ☆ Type	Dispatch ☐ Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	
4 ID ☆ Type	Dispatch ☐ Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	
5 ID ☆ Type	Dispatch ☐ Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	
6 ID ☆ Type	Dispatch ☐ Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	
7 ID ☆ Type	Dispatch ☐ Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	
8 ID ☆ Type	Dispatch ☐ Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	
9 ID ☆ Type	Dispatch ☐ Arrival ☐ Clear ☐	☐		☐ Suppression ☐ EMS ☐ Other	

Apparatus or Resource Type

Ground Fire Suppression

11 Engine
12 Truck or aerial
13 Quint
14 Tanker and pumper combination
16 Brush truck
17 ARFF (aircraft rescue and firefighting)
10 Ground fire suppression, other

Heavy Ground Equipment

21 Dozer or plow
22 Tractor
24 Tanker or tender
20 Heavy ground equipment, other

Aircraft

41 Aircraft: fixed-wing tanker
42 Helitanker
43 Helicopter
40 Aircraft, other

Marine Equipment

51 Fire boat with pump
52 Boat, no pump
50 Marine equipment, other

Support Equipment

61 Breathing apparatus support
62 Light and air unit
60 Support apparatus, other

Medical and Rescue

71 Rescue unit
72 Urban search and rescue unit
73 High-angle rescue unit
75 BLS unit
76 ALS unit
70 Medical and rescue unit, other

Other

91 Mobile command post
92 Chief officer car
93 HazMat unit
94 Type I hand crew
95 Type II hand crew
99 Privately owned vehicle
00 Other apparatus/resources

More apparatus? Use additional sheets.

NN None
UU Undetermined

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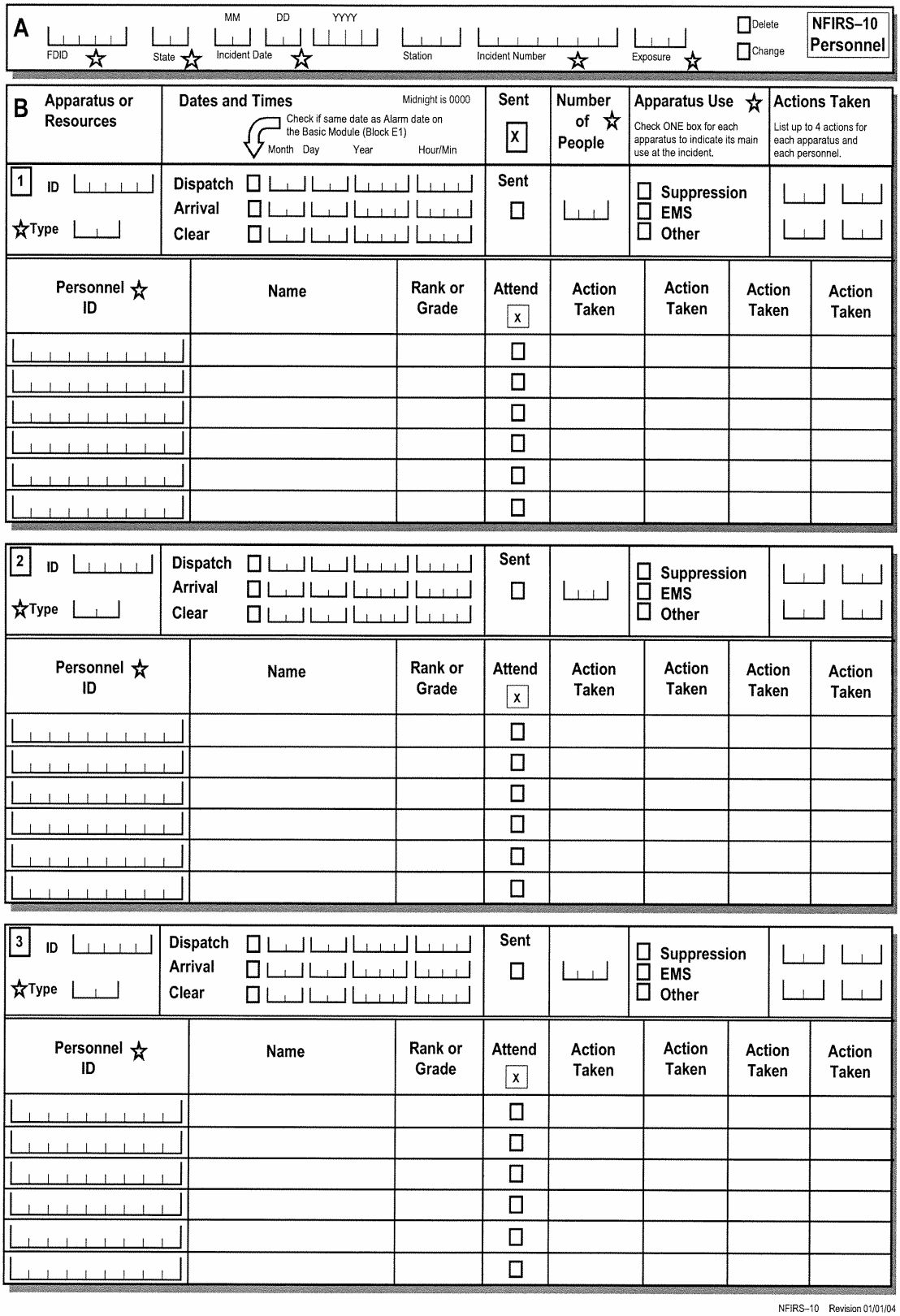

A — FDID ☆ | State ☆ | Incident Date (MM DD YYYY) ☆ | Station | Incident Number ☆ | Exposure ☆ | ☐ Delete ☐ Change | NFIRS–10 Personnel

B Apparatus or Resources	Dates and Times (Midnight is 0000; Check if same date as Alarm date on the Basic Module (Block E1); Month Day Year Hour/Min)	Sent [X]	Number of People ☆	Apparatus Use ☆ (Check ONE box for each apparatus to indicate its main use at the incident.)	Actions Taken (List up to 4 actions for each apparatus and each personnel.)
1 ID ☆Type	Dispatch ☐ Arrival ☐ Clear ☐	Sent ☐		☐ Suppression ☐ EMS ☐ Other	

Personnel ID ☆	Name	Rank or Grade	Attend [X]	Action Taken	Action Taken	Action Taken	Action Taken
			☐				
			☐				
			☐				
			☐				
			☐				
			☐				

2 ID ☆Type	Dispatch ☐ Arrival ☐ Clear ☐	Sent ☐		☐ Suppression ☐ EMS ☐ Other	

Personnel ID ☆	Name	Rank or Grade	Attend [X]	Action Taken	Action Taken	Action Taken	Action Taken
			☐				
			☐				
			☐				
			☐				
			☐				
			☐				

3 ID ☆Type	Dispatch ☐ Arrival ☐ Clear ☐	Sent ☐		☐ Suppression ☐ EMS ☐ Other	

Personnel ID ☆	Name	Rank or Grade	Attend [X]	Action Taken	Action Taken	Action Taken	Action Taken
			☐				
			☐				
			☐				
			☐				
			☐				
			☐				

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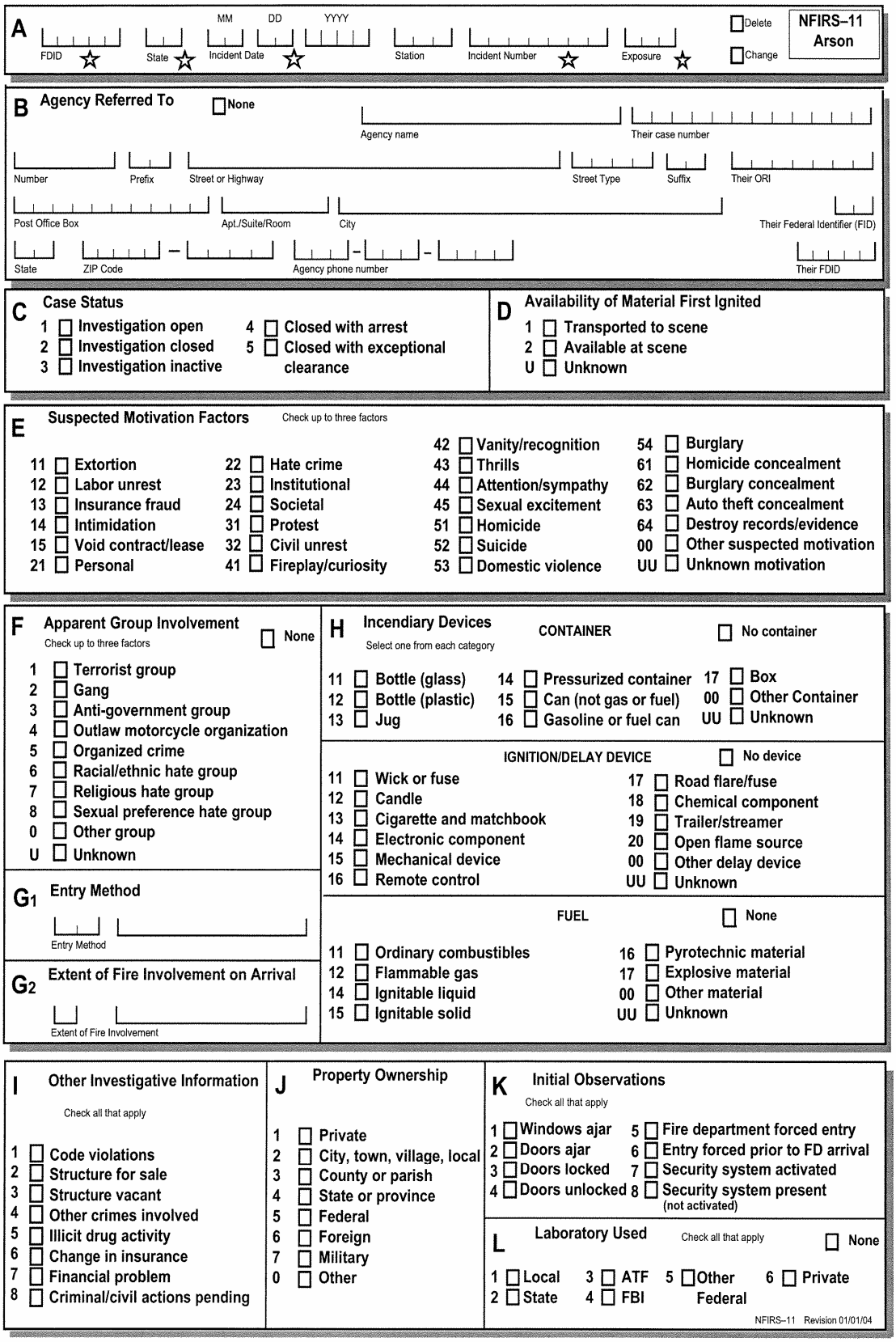

A FDID ☆ | State ☆ | Incident Date (MM DD YYYY) ☆ | Station | Incident Number ☆ | Exposure ☆ | ☐ Delete ☐ Change | NFIRS–11 Arson

B Agency Referred To ☐ None
Agency name | Their case number
Number | Prefix | Street or Highway | Street Type | Suffix | Their ORI
Post Office Box | Apt./Suite/Room | City | Their Federal Identifier (FID)
State | ZIP Code | Agency phone number | Their FDID

C Case Status
1 ☐ Investigation open
2 ☐ Investigation closed
3 ☐ Investigation inactive
4 ☐ Closed with arrest
5 ☐ Closed with exceptional clearance

D Availability of Material First Ignited
1 ☐ Transported to scene
2 ☐ Available at scene
U ☐ Unknown

E Suspected Motivation Factors Check up to three factors

11 ☐ Extortion	22 ☐ Hate crime	42 ☐ Vanity/recognition	54 ☐ Burglary
12 ☐ Labor unrest	23 ☐ Institutional	43 ☐ Thrills	61 ☐ Homicide concealment
13 ☐ Insurance fraud	24 ☐ Societal	44 ☐ Attention/sympathy	62 ☐ Burglary concealment
14 ☐ Intimidation	31 ☐ Protest	45 ☐ Sexual excitement	63 ☐ Auto theft concealment
15 ☐ Void contract/lease	32 ☐ Civil unrest	51 ☐ Homicide	64 ☐ Destroy records/evidence
21 ☐ Personal	41 ☐ Fireplay/curiosity	52 ☐ Suicide	00 ☐ Other suspected motivation
		53 ☐ Domestic violence	UU ☐ Unknown motivation

F Apparent Group Involvement Check up to three factors ☐ None
1 ☐ Terrorist group
2 ☐ Gang
3 ☐ Anti-government group
4 ☐ Outlaw motorcycle organization
5 ☐ Organized crime
6 ☐ Racial/ethnic hate group
7 ☐ Religious hate group
8 ☐ Sexual preference hate group
0 ☐ Other group
U ☐ Unknown

G1 Entry Method
Entry Method

G2 Extent of Fire Involvement on Arrival
Extent of Fire Involvement

H Incendiary Devices Select one from each category

CONTAINER ☐ No container

11 ☐ Bottle (glass)	14 ☐ Pressurized container	17 ☐ Box
12 ☐ Bottle (plastic)	15 ☐ Can (not gas or fuel)	00 ☐ Other Container
13 ☐ Jug	16 ☐ Gasoline or fuel can	UU ☐ Unknown

IGNITION/DELAY DEVICE ☐ No device

11 ☐ Wick or fuse	17 ☐ Road flare/fuse
12 ☐ Candle	18 ☐ Chemical component
13 ☐ Cigarette and matchbook	19 ☐ Trailer/streamer
14 ☐ Electronic component	20 ☐ Open flame source
15 ☐ Mechanical device	00 ☐ Other delay device
16 ☐ Remote control	UU ☐ Unknown

FUEL ☐ None

11 ☐ Ordinary combustibles	16 ☐ Pyrotechnic material
12 ☐ Flammable gas	17 ☐ Explosive material
14 ☐ Ignitable liquid	00 ☐ Other material
15 ☐ Ignitable solid	UU ☐ Unknown

I Other Investigative Information Check all that apply
1 ☐ Code violations
2 ☐ Structure for sale
3 ☐ Structure vacant
4 ☐ Other crimes involved
5 ☐ Illicit drug activity
6 ☐ Change in insurance
7 ☐ Financial problem
8 ☐ Criminal/civil actions pending

J Property Ownership
1 ☐ Private
2 ☐ City, town, village, local
3 ☐ County or parish
4 ☐ State or province
5 ☐ Federal
6 ☐ Foreign
7 ☐ Military
0 ☐ Other

K Initial Observations Check all that apply

1 ☐ Windows ajar	5 ☐ Fire department forced entry
2 ☐ Doors ajar	6 ☐ Entry forced prior to FD arrival
3 ☐ Doors locked	7 ☐ Security system activated
4 ☐ Doors unlocked	8 ☐ Security system present (not activated)

L Laboratory Used Check all that apply ☐ None

1 ☐ Local	3 ☐ ATF	5 ☐ Other Federal	6 ☐ Private
2 ☐ State	4 ☐ FBI		

NFIRS–11 Revision 01/01/04

A FDID ☆ | State ☆ | Incident Date (MM DD YYYY) ☆ | Station | Incident Number ☆ | Exposure ☆ | ☐ Delete ☐ Change | **NFIRS–11 Juvenile Firesetter**

Complete this section if the person involved in the ignition of the fire was a child or Juvenile under the age of 18

M1 Subject Number
Complete a separate Section M form for each juvenile
Subject Number

M2 Age or Date of Birth
Age (in years)
OR
Month Day Year

M3 Gender
1 ☐ Male 2 ☐ Female

M4 Race
1 ☐ White
2 ☐ Black, African American
3 ☐ American Indian, Alaska Native
4 ☐ Asian
5 ☐ Native Hawaiian, Other Pacific Islander
0 ☐ Other, multiracial
U ☐ Undetermined

M5 Ethnicity
1 ☐ Hispanic or Latino
0 ☐ Non Hispanic or Latino

M6 Family Type
1 ☐ Single parent
2 ☐ Foster parent(s)
3 ☐ Two-parent family
4 ☐ Extended family
N ☐ No family unit
0 ☐ Other family type
U ☐ Unknown

M7 Motivation/Risk Factors Check only one of codes 1–3 and then all others (4–9) that apply

1 ☐ Mild curiosity about fire
2 ☐ Moderate curiosity about fire
3 ☐ Extreme curiosity about fire
4 ☐ Diagnosed (or suspected) ADD/ADHD
5 ☐ History of trouble outside school
6 ☐ History of stealing or shoplifting
7 ☐ History of physically assaulting others
8 ☐ History of fireplay or firesetting
9 ☐ Transiency
0 ☐ Other
U ☐ Unknown

M8 Disposition of Person Under 18

1 ☐ Handled within department
2 ☐ Released to parent/guardian
3 ☐ Referred to other authority
4 ☐ Referred to treatment/counseling program
5 ☐ Arrested, charged as adult
6 ☐ Referred to firesetter intervention program
0 ☐ Other
U ☐ Unknown

N Remarks (local use)

A FDID ☆ State ☆ MM DD YYYY Incident Date ☆ Station Incident Number ☆ Exposure ☆ ☐ Delete ☐ Change

NFIRS–1S Supplemental

K1 Person/Entity Involved
Local Option

Business Name (if applicable) Area Code – Phone Number

☐ Check this box if same address as incident location. Then skip these three duplicate address lines.

Mr., Ms., Mrs. First Name MI Last Name Suffix

Number Prefix Street or Highway Street Type Suffix

Post Office Box Apt./Suite/Room City

State ZIP Code –

K1 Person/Entity Involved
Local Option

Business Name (if applicable) Area Code – Phone Number

☐ Check this box if same address as incident location. Then skip these these duplicate address lines.

Mr., Ms., Mrs. First Name MI Last Name Suffix

Number Prefix Street or Highway Street Type Suffix

Post Office Box Apt./Suite/Room City

State ZIP Code –

K1 Person/Entity Involved
Local Option

Business Name (if applicable) Area Code – Phone Number

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Mr., Ms., Mrs. First Name MI Last Name Suffix

Number Prefix Street or Highway Street Type Suffix

Post Office Box Apt./Suite/Room City

State ZIP Code –

K1 Person/Entity Involved
Local Option

Business Name (if applicable) Area Code – Phone Number

☐ Check this box if same address as incident location. Then skip these three duplicate address lines.

Mr., Ms., Mrs. First Name MI Last Name Suffix

Number Prefix Street or Highway Street Type Suffix

Post Office Box Apt./Suite/Room City

State ZIP Code –

K1 Person/Entity Involved
Local Option

Business Name (if applicable) Area Code – Phone Number

☐ Check this box if same address as incident location. Then skip these three duplicate address lines.

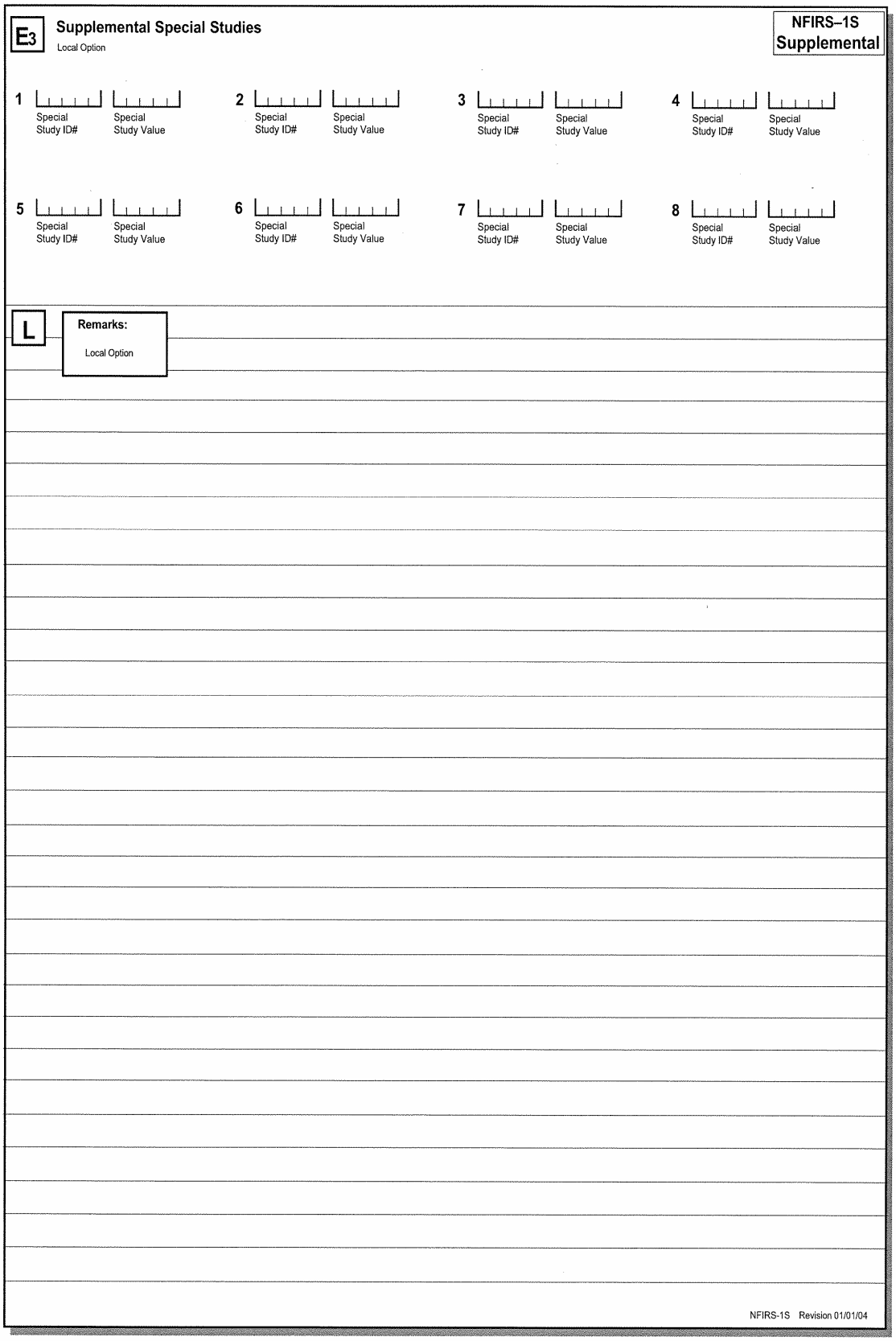
Mr., Ms., Mrs. First Name MI Last Name Suffix

Number Prefix Street or Highway Street Type Suffix

Post Office Box Apt./Suite/Room City

State ZIP Code –

NFIRS–1S Revision 01/01/04



E3 **Supplemental Special Studies**
Local Option

NFIRS–1S
Supplemental

1 Special Study ID#	Special Study Value	2 Special Study ID#	Special Study Value	3 Special Study ID#	Special Study Value	4 Special Study ID#	Special Study Value
5 Special Study ID#	Special Study Value	6 Special Study ID#	Special Study Value	7 Special Study ID#	Special Study Value	8 Special Study ID#	Special Study Value

L **Remarks:**
Local Option

NFIRS-1S Revision 01/01/04