Command and Control of Incident Operations

CCIO-Student Manual

5th Edition, 7th Printing-September 2024

FEMA

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U.S. DEPARTMENT OF HOMELAND SECURITY

UNITED STATES FIRE ADMINISTRATION

NATIONAL FIRE ACADEMY

FOREWORD

The U.S. Fire Administration (USFA), an important component of the Department of Homeland Security (DHS) serves the leadership of this nation as the DHS's fire protection and emergency response expert. The USFA is located at the National Emergency Training Center (NETC) in Emmitsburg, Maryland, and includes the National Fire Academy (NFA), and the National Fire Programs (NFP). The USFA also provides oversight and management of the Noble Training Center in Anniston, Alabama. The mission of the USFA is to save lives and reduce economic losses due to fire and related emergencies through training, research, data collection and analysis, public education, and coordination with other federal agencies and fire protection and emergency service personnel.

The USFA's NFA offers a diverse course delivery system, combining resident courses, off-campus deliveries in cooperation with state training organizations, weekend instruction, and online courses. The USFA maintains a blended learning approach to its course selections and course development. Resident courses are delivered at both the Emmitsburg campus and its Noble facility. Off-campus courses are delivered in cooperation with state and local fire training organizations to ensure this nation's firefighters are prepared for the hazards they face.

"Command and Control of Incident Operations" (CCIO) uses the Incident Command System (ICS) as a basis for managing fire suppression delivery. This one-week course addresses fire and other emergency situations. Designed for the fire officer from small and volunteer departments, CCIO offers an opportunity to practice incident scene management using simulated major emergencies.

This course is a major revision of "Fire Command Operations," which has been offered for many years by NFA. The revisions were made to apply recent work in Naturalistic Decision Making (NDM), and particularly a recognition-primed decision making (RPD) model of how fireground commanders actually make decisions when faced with time pressure and uncertainty. In addition, other materials have been revised, and the simulations have been expanded and enhanced to improve the effectiveness of the training experience.

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TABLE OF CONTENTS

THE INCIDENT COMMAND SYSTEM

Although there are many systems in use for the command and control of resources at emergency incidents, the NFA has adopted the ICS as its base for teaching the concepts of Incident Command.

The ICS is recognized by NFA as a system that is documented and has been used successfully in managing available resources at emergency operations. All procedures will not fit all departments perfectly, nor will the system necessarily need to be implemented fully for all situations the fire service will encounter.

The ICS was developed as a consequence of fires that consumed large portions of wildland, including structures, in southern California in 1970. As a result of those fires, agencies learned to work together toward a common goal in an effective and efficient manner. The material contained in this course was developed by a multiagency task force. The California Department of Forestry and Fire Protection, through the U.S. Forest Service (USFS) and the Federal Emergency Management Agency (FEMA), developed the materials in cooperation with the California State Fire Marshal's Office, the California Office of Emergency Services, and the Fire Resources of California Organized for Potential Emergencies (FIRESCOPE) task force.

The system consists of procedures for controlling personnel, facilities, equipment and communications.

It is designed to begin developing from the time an incident occurs until the requirement for management and operations no longer exists. Incident Commander (IC) is a title which can apply equally to an engine company captain or to the chief of a department, depending upon the situation. The structure of the ICS can be established and expanded depending on the changing conditions of the incident. It is intended to be staffed and operated by qualified personnel from any emergency services agency and may involve personnel from a variety of agencies.

As such, the system can be used for any type or size of emergency, ranging from a minor incident involving a single unit to a major emergency involving several agencies. The ICS allows agencies to communicate using common terminology and operating procedures. It also allows for the timely combining of resources during an emergency.

The ICS is designed to be used in response to emergencies caused by fires, floods, earthquakes, hurricanes, tornadoes, tidal waves, riots, hazardous materials, or other natural or human-caused incidents.

Operating Requirements

The design requirements for the ICS are the following:

- Can provide for the following kinds of operations: (a) single jurisdiction/single agency involvement, (b) single jurisdiction with multiagency involvement, (c) multijurisdiction/multiagency involvement.
- Organizational structure can adapt to any emergency or incident to which fire protection agencies would be expected to respond.
- Can be applicable and acceptable to users throughout the country.
- Should be readily adaptable to new technology.
- Must be able to expand in a logical manner from an initial attack situation.
- Must have basic common elements in organization, terminology and procedures. This allows for the maximum application and use of already developed qualifications and standards and ensures continuation of a total mobility concept.
- Implementation should cause the least possible disruption to existing systems.
- Must be effective in fulfilling all of the above requirements and yet be simple enough to ensure low operational maintenance costs.

Components of the Incident Command System

The ICS has a number of components. These components working together interactively provide the basis for an effective ICS concept of operation:

- common terminology;
- modular organization;
- integrated communications;
- Unified Command (UC) structure;
- consolidated action plans;
- manageable span-of-control;
- predesignated incident facilities; and
- comprehensive resource management.

Organization and Operations

The ICS has five major functional areas:

- Command
- Operations
- Planning
- Logistics
- Finance/Administration

THE INTEGRATED EMERGENCY MANAGEMENT SYSTEM

The Integrated Emergency Management System (IEMS) is a long-term, all-hazard concept for improving the program implementation and development of emergency management capabilities at the state and local levels. It is a process for applying comprehensive emergency management concepts to “real world” emergency plans and capabilities. It formally recognizes the roles of the fire service in responding to the full range of emergencies at the local level.

Specific objectives of IEMS are to:

- save lives and protect property threatened by hazards;
- reduce duplication of efforts and resources;
- increase jurisdictional flexibility in upgrading the capacity to handle potential hazards; and
- integrate FEMA support and objectives with state and local operational requirements.

Viewed in this manner, it becomes clear that existing fire service programs such as the ICS are part of the broader concept of IEMS. The ICS-IEMS identifies the need for “baseline” fireground Command systems to provide for a predictable, coordinated, effective and acceptable response to emergencies of all types by the fire services of this country.

The IEMS approach recognizes that there are certain characteristics and requirements that are common across the full spectrum of emergencies — evacuation, sheltering, provision of food and medical supplies, etc. Each of these functions requires an operational procedure. The ICS is a procedure to ensure all areas of concern are addressed. FEMA’s programs use the IEMS approach to assist state and local officials to build capability in these areas as a basic foundation for planning, response, recovery and mitigation of hazards — whether they are related to natural or technological disasters, resources, resource shortages or war-related national security situations.

The IEMS is being introduced to a nationwide network of emergency management organizations representing thousands of jurisdictions, not all confronted by the same hazards and not all having or requiring the same capabilities. Going through the IEMS process, therefore, will require different levels of effort by each jurisdiction and will result in the identification of different functional areas requiring attention. The process is logical and applicable to all jurisdictions regardless of their size, level of sophistication, potential hazards or current capabilities.

The goal of the system is to develop and maintain a credible emergency management capability nationwide by integrating activities along functional lines at all levels of government and, to the fullest extent possible, across all hazards. It should be kept in mind that the IEMS process is a means of improving capability and is not an end in itself. The various steps in the IEMS process are intended to serve management at each level of government by providing basic information upon which reasonable and justifiable plans can be made and effective action taken to increase emergency management capability nationwide.

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COURSE SCHEDULE

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FIREFIGHTER CODE OF ETHICS

Background

The Fire Service is a noble calling, one which is founded on mutual respect and trust between firefighters and the citizens they serve. To ensure the continuing integrity of the Fire Service, the highest standards of ethical conduct must be maintained at all times.

Developed in response to the publication of the Fire Service Reputation Management White Paper, the purpose of this National Firefighter Code of Ethics is to establish criteria that encourages fire service personnel to promote a culture of ethical integrity and high standards of professionalism in our field. The broad scope of this recommended Code of Ethics is intended to mitigate and negate situations that may result in embarrassment and waning of public support for what has historically been a highly respected profession.

Ethics comes from the Greek word ethos, meaning character. Character is not necessarily defined by how a person behaves when conditions are optimal and life is good. It is easy to take the high road when the path is paved and obstacles are few or non-existent. Character is also defined by decisions made under pressure, when no one is looking, when the road contains land mines, and the way is obscured. As members of the Fire Service, we share a responsibility to project an ethical character of professionalism, integrity, compassion, loyalty and honesty in all that we do, all of the time.

We need to accept this ethics challenge and be truly willing to maintain a culture that is consistent with the expectations outlined in this document. By doing so, we can create a legacy that validates and sustains the distinguished Fire Service institution, and at the same time ensure that we leave the Fire Service in better condition than when we arrived.

FIREFIGHTER CODE OF ETHICS

I understand that I have the responsibility to conduct myself in a manner that reflects proper ethical behavior and integrity. In so doing, I will help foster a continuing positive public perception of the fire service. Therefore, I pledge the following…

- Always conduct myself, on and off duty, in a manner that reflects positively on myself, my department and the fire service in general.
- Accept responsibility for my actions and for the consequences of my actions.
- Support the concept of fairness and the value of diverse thoughts and opinions.
- Avoid situations that would adversely affect the credibility or public perception of the fire service profession.
- Be truthful and honest at all times and report instances of cheating or other dishonest acts that compromise the integrity of the fire service.
- Conduct my personal affairs in a manner that does not improperly influence the performance of my duties, or bring discredit to my organization.
- Be respectful and conscious of each member's safety and welfare.
- Recognize that I serve in a position of public trust that requires stewardship in the honest and efficient use of publicly owned resources, including uniforms, facilities, vehicles and equipment and that these are protected from misuse and theft.
- Exercise professionalism, competence, respect and loyalty in the performance of my duties and use information, confidential or otherwise, gained by virtue of my position, only to benefit those I am entrusted to serve.
- Avoid financial investments, outside employment, outside business interests or activities that conflict with or are enhanced by my official position or have the potential to create the perception of impropriety.
- Never propose or accept personal rewards, special privileges, benefits, advancement, honors or gifts that may create a conflict of interest, or the appearance thereof.
- Never engage in activities involving alcohol or other substance use or abuse that can impair my mental state or the performance of my duties and compromise safety.
- Never discriminate on the basis of race, religion, color, creed, age, marital status, national origin, ancestry, gender, sexual preference, medical condition or handicap.
- Never harass, intimidate or threaten fellow members of the service or the public and stop or report the actions of other firefighters who engage in such behaviors.
- Responsibly use social networking, electronic communications, or other media technology opportunities in a manner that does not discredit, dishonor or embarrass my organization, the fire service and the public. I also understand that failure to resolve or report inappropriate use of this media equates to condoning this behavior.

Developed by the National Society of Executive Fire Officers

A Student Guide to End-of-course Evaluations

Say What You Mean ...

Ten Things You Can Do to Improve the National Fire Academy

The National Fire Academy takes its course evaluations very seriously. Your comments and suggestions enable us to improve your learning experience.

Unfortunately, we often get end-of-course comments like these that are vague and, therefore, not actionable. We know you are trying to keep your answers short, but the more specific you can be, the better we can respond.

Actual quotes from student evaluations:	Examples of specific, actionable comments that would help us improve the course:
1 "Update the materials."	• The (ABC) fire video is out-of-date because of the dangerous tactics it demonstrates. The available (XYZ) video shows current practices. • The student manual references building codes that are 12 years old.
2 "We want an advanced class in (fill in the blank)."	• We would like a class that enables us to calculate energy transfer rates resulting from exposure fires. • We would like a class that provides one-on-one workplace harassment counseling practice exercises.
3 "More activities."	• An activity where students can physically measure the area of sprinkler coverage would improve understanding of the concept. • Not all students were able to fill all ICS positions in the exercises. Add more exercises so all students can participate.
4 "A longer course."	• The class should be increased by one hour per day to enable all students to participate in exercises. • The class should be increased by two days so that all group presentations can be peer evaluated and have written abstracts.
5 "Readable plans."	• The plans should be enlarged to 11 by 17 and provided with an accurate scale. • My plan set was blurry, which caused the dotted lines to be interpreted as solid lines.
6 "Better student guide organization," "manual did not coincide with slides."	• The slide sequence in Unit 4 did not align with the content in the student manual from slides 4-16 through 4-21. • The instructor added slides in Unit 4 that were not in my student manual.
7 "Dry in spots."	• The instructor/activity should have used student group activities rather than lecture to explain Maslow's Hierarchy. • Create a pre-course reading on symbiotic personal relationships rather than trying to lecture on them in class.
8 "More visual aids."	• The text description of V-patterns did not provide three-dimensional views. More photographs or drawings would help me imagine the pattern. • There was a video clip on NBC News (date) that summarized the topic very well.
9 "Re-evaluate pre-course assignments."	• The pre-course assignments were not discussed or referenced in class. Either connect them to the course content or delete them. • The pre-course assignments on ICS could be reduced to a one-page job aid rather than a 25-page reading.
10 "A better understanding of NIMS."	• The instructor did not explain the connection between NIMS and ICS. • The student manual needs an illustrated guide to NIMS.

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UNIT 1: INTRODUCTION

LEARNING OUTCOME

Summarize and explain the requirements for this class aimed at the applied learning accomplished through the integrated use of simulations.

OBJECTIVES

The students will:

1. *Describe the course purpose, content, schedule and requirements.*

2. *Describe the course simulation process and benefits.*

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COURSE OVERVIEW

Course Goal

This course is designed to enhance fire service organizational and decision-making skills necessary for Command and control of emergency incidents of various sizes, types and complexities.

The primary target audience is persons from smaller departments (volunteer, combination or paid) who may find themselves in positions of Command at emergency incidents. Secondary audience members who also may benefit from the training include persons serving as fire officers and other firefighters.

Course Objectives

The students will:

- apply the Incident Command System (ICS) at emergency incident simulations;
- determine strategies and identify appropriate tactical solutions for a variety of incident types;
- use preincident information in incident scene decision-making; and
- manage incident operations to maximize personnel and scene safety.

Course Description

"Command and Control of Incident Operations" (CCIO) is an intensive six-day educational opportunity designed specifically for volunteer and small-department fire service officers. The course is part of the Volunteer Incentive Program (VIP), taught on campus at the National Fire Academy (NFA) and through the Regional Delivery Program off campus. During training, students study the ICS and proper fire Command techniques for control and extinguishment of fires ranging from small residential structures to multioccupancy and commercial complexes. Topics include:

- incident decision-making methods;
- interagency and mutual aid;
- preincident preparation;
- building construction and fire behavior;
- engine and truck operations;
- incident size-up and problem identification;
- operational strategy and tactics; and
- scene management and strategic Command.

In addition to firefighting, the course takes an all-hazard/all-risk approach to training, addressing emergency medical care, rescue, hazardous materials (hazmat) operations and other threats to the community. A variety of instructional methods are used to present and reinforce training, including lecture, discussion, audiovisual aids and student activities. Special emphasis is placed on firefighter safety and the development of incident decision-making skills through the use of classroom simulations.

Unit Descriptions

Unit 1: Introduction

Administrative matters, introductions and an overview of the course precede a discussion on the simulation strategy used in training.

Unit 2: Incident Command System Review

This unit defines and discusses the history of the ICS and the components of a Fire Resources of California Organized for Potential Emergencies (FIRESCOPE) ICS; describes ICS organization at expanded incidents; reviews ICS major functions and Command Staff; provides opportunities for students to apply ICS concepts at simulated incidents; and includes a case study — Homestead Road Gas Explosion.

Unit 3: Decision-making Review

This unit explains incident scene decision-making and the Command sequence; describes size-up, problem identification, and steps to determine strategy and select tactics; reviews the benefits of a systematic approach to incident problems and strategy; discusses incident scene solutions and the action plan; and provides opportunities for students to practice incident decision-making.

Unit 4: Preincident Preparation

This unit provides information on calculating fire flow and resource requirements; presents the elements of an effective preplan; and identifies categories of information critical to incident operations.

Unit 5: Building Construction and Fire Behavior Factors

This unit discusses the various types of construction and the effect of fire on them; flashover, backdraft and other fire behavior factors; and tips for predicting fire and smoke travel.

Unit 6: Interagency and Mutual Aid

This unit stresses the importance of interagency cooperation and ways that needed resources can be obtained; identifies key points about mutual aid and interagency operations; and identifies possible sources of outside assistance.

Unit 7: Tactical Company Operations

This unit discusses the functions and responsibilities of tactical companies at emergency incidents. The principles of truck work, engine work, Emergency Medical Services (EMS) work and squad/rescue work are reviewed.

Simulation Modules

In this section of the course, students develop strategies and a Command organization necessary for each of 10 scenarios. They practice communications, decision-making and Command skills necessary to manage effectively at an emergency incident.

Student Requirements

In order to complete the course successfully, each student must

- complete all reading assignments;
- complete all homework;
- participate in all individual and group activities; and
- participate in all simulations, serving at least once as part of the Command or General Staff.

COURSE SIMULATION STRATEGY

During this course, you will participate in a series of simulations of emergency incidents. Members of the class assume roles, assess different types of emergency situations, and actually make Command decisions under realistic incident conditions.

The simulations are a critical component of this training experience:

- gives students an opportunity to apply the knowledge and practice the skills learned in the classroom in a safe and supportive environment;
- reinforces the lessons learned and helps students make the transition from the classroom to the incident scene; and
- helps individuals compensate for limited actual incident experience.

You are strongly encouraged to take full advantage of this learning opportunity. Take the simulations seriously and participate actively. Don't be afraid to make mistakes — that is what training is for. Remember that it's better to make mistakes now than on the incident scene.

Course Schedule

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
MORNING	Unit 1: Introduction Unit 2: Incident Command System Review	Unit 3: Decision-making Review Unit 4: Preincident Preparation	Unit 6: Interagency and Mutual Aid Unit 7: Tactical Company Operations	Simulation 3 Simulation 4	Simulation 6 Simulation 7	Simulation 9 Simulation 10
	Lunch	**Lunch**	**Lunch**	**Lunch**	**Lunch**	**Lunch**
AFTERNOON	Unit 2: Incident Command System Review (cont'd) Case Study: Homestead Road Gas Explosion	Unit 4: Preincident Preparation (cont'd) Unit 5: Building Construction and Fire Behavior Factors	Introduction to Simulations Simulation 1 Simulation 2	Simulation 4 (cont'd) Simulation 5	Simulation 7 (cont'd) Simulation 8	Simulation 10 (cont'd) Course Summary
	Supper	**Supper**	**Supper**	**Supper**	**Supper**	**Supper**
EVENING	Read Units 3, 4 and 5 Complete Activity 2.1	Read Units 6 and 7 **Simulation Materials/Questions for Day 3**	Read **Simulation Materials/Questions for Day 4**	Read **Simulation Materials/Questions for Day 5**	Read **Simulation Materials/Questions for Day 6**	

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UNIT 2: INCIDENT COMMAND SYSTEM REVIEW

LEARNING OUTCOME

Effectively manage the needs of an expanded and complex incident using the National Incident Management System (NIMS) incident management process, including command structures.

OBJECTIVES

The students will:

1. *Determine an appropriate Incident Command System (ICS) Operations Section organization for a fire situation.*

2. *Determine an appropriate ICS Operations Section organization for a multialarm incident.*

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THE NATIONAL INCIDENT MANAGEMENT SYSTEM

On February 28, 2003, President Bush issued Homeland Security Presidential Directive-5 (HSPD-5). One purpose of HSPD-5 is "to enhance the ability of the United States to manage domestic incidents by establishing a single, comprehensive national incident management system." This excerpt from HSPD-5 outlines the tasking given to the Secretary of Homeland Security:

> (15) The Secretary shall develop, submit for review to the Homeland Security Council, and administer a National Incident Management System (NIMS). This system will provide a consistent nationwide approach for federal, state and local governments to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size or complexity.

On March 1, 2004, after close collaboration with state and local government officials and representatives from across a spectrum of public safety organizations, the Department of Homeland Security (DHS) issued the NIMS. The NIMS integrates existing best practices into a consistent, nationwide approach to domestic incident management that is applicable at all jurisdictional levels and across functional disciplines in an all-hazards context.

Six major components make up this system's approach. A brief summary of topics in these six sections follows.

1. Command and management:

   - Incident Command System (ICS);
   - Multiagency Coordination (MAC) Systems; and
   - public information systems.

2. Preparedness:

   - planning — training — exercises;
   - personnel qualification and certification standards;
   - equipment acquisition and certification standards; and
   - publication management processes and activities.

3. Resource management/Mutual aid:

   - standardized requirements for processes to describe, inventory, mobilize, dispatch, track and recover resources over the life cycle of an incident; and
   - includes resource typing and mutual-aid concerns.

4. Communications and information management:

   - NIMS identifies the requirement for a standardized framework for:

     - communications,

- information management (collection, analysis and dissemination), and
- information sharing at all levels of incident management.

- Includes agencies and jurisdictions responsible for managing or directing domestic incidents, those affected by the incident, and those contributing resources to the incident management effort.

- Helps ensure that crisis decision-making is better informed.

5. Supporting technologies:

   - These include voice and data communications systems, information management systems (i.e., recordkeeping and resource tracking), and data display systems.

   - Supporting interoperability and compatibility.

6. Ongoing management and maintenance:

   - Provide strategic direction for and oversight of the NIMS — supporting both routine review and the continuous refinement of the system and its components over the long term.

   - This is one of the primary responsibilities of the NIMS Integration Center.

Of these components, the concepts and practices for Command and Management and Preparedness are the most fully developed, reflecting their regular use by many jurisdictional levels and agencies responsible for incident management across the country. Resource Management, Communications and Information Management, Supporting Technologies, and Ongoing Management and Maintenance introduce many concepts and requirements that are also integral to the NIMS but that will require further collaborative development and refinement over time. Although technology is relied on heavily to link the components of the NIMS, the success of the NIMS will depend largely on whether state, local and tribal governments also adopt key implementation strategies that accompany the use of new technologies.

Throughout this course, when “ICS” is used, it should be understood that the reference is to the Incident Management System (IMS) described in NIMS, and includes the application of NIMS principles to the specific scenario being discussed.

Many other agencies besides fire agencies — both public and private — will be adopting the NIMS as required by the DHS.

Differences Between Fire Resources of California Organized for Potential Emergencies and National Incident Management System Incident Command System

The ICS established in the NIMS is not a new emergency IMS. It is based on the "Incident Command System Operational System Description" document (ICS 420-1) developed by Fire Resources of California Organized for Potential Emergencies (FIRESCOPE). The two most significant differences between NIMS and FIRESCOPE ICS are

1. The Command Staff Information Officer position is now called the Public Information Officer (PIO).
2. The Intelligence and Investigation function may be organized in one of the following ways:

    - as an Officer within the Command Staff;
    - as a Unit within the Planning Section;
    - as a Branch within the Operations Section; or
    - as a separate General Staff Section.

Intelligence and Investigation Options in the National Incident Management System

The following discussion helps guide the determination for the most effective placement of the Intelligence and Investigation function in the NIMS.

- Officer in the Command Staff.

  This option may be most appropriate in incidents with little need for tactical or classified intelligence and where incident-related intelligence is provided by supporting agency representatives, through real-time reach-back capabilities.

- Unit within the Planning Section.

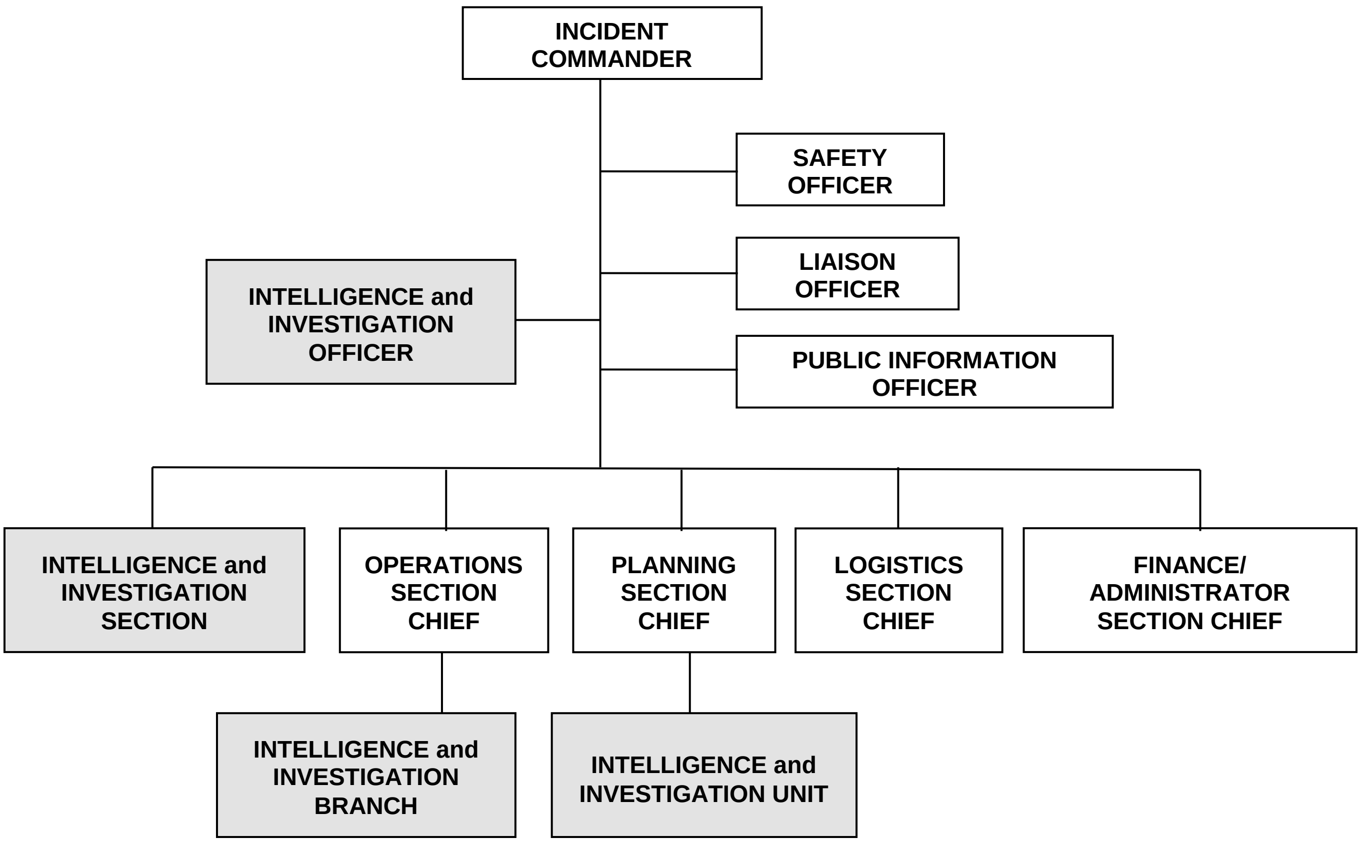
  This option may be most appropriate in an incident with some need for tactical intelligence and when no law enforcement entity is a member of the Unified Command (UC).

- Branch within the Operations Section.

  This option may be most appropriate in incidents with a high need for tactical intelligence (particularly classified intelligence) and when law enforcement is a member of the UC.

- General Staff Section.

  This option may be most appropriate when an incident is influenced heavily by intelligence factors, or when there is a need to manage and/or analyze a large volume of classified or highly sensitive intelligence or information. This option is particularly relevant to a terrorism incident, for which intelligence plays a crucial role throughout the incident life cycle.



The Intelligence and Investigation function also has the responsibility for coordinating information and operational security matters with public awareness activities that fall under the responsibility of the PIO, particularly where such public awareness activities may affect information or operations security.

Regardless of how it is organized, the Intelligence and Investigation function is responsible for developing, conducting and managing information-related security plans and operations as directed by the Incident Commander (IC). This can include information security and operational security activities, as well as the complex task of ensuring that sensitive information of all types (e.g., classified information, sensitive law enforcement information, proprietary and personal information, or export-controlled information) is handled in a way that not only safeguards the information but also ensures that it gets to those who need access to it so that they can conduct their missions effectively and safely.

Additional Information

National Incident Management System

A downloadable portable document file (PDF) version of the NIMS can be found on the NIMS Integration Center website at: http://www.fema.gov/nims/nims.shtm.

An online independent study program for the NIMS can be found on the Emergency Management Institute (EMI) website. The course, IS-700: "National Incident Management System (NIMS), An Introduction," is a Web-based awareness-level course that explains NIMS components, concepts and principles. The course can be accessed at: http://training.fema.gov/EMIweb/IS/is700.asp.

Additional information, requirements and guidelines for fulfilling an organization's NIMS compliance can be found on the NIMS Integration Center's website: http://www.fema.gov/nims/. Of particular interest to fire service organizations is NIMCAST (National Incident Management Compliance Assessment Tool) — a Web-based self-assessment system that will allow evaluation of an organization's preparedness and response capabilities against the requirements of the NIMS.

Need for a Common Incident Management System

There must be a professional approach in each department to managing emergency incidents. The use of an IMS enables us to handle incidents more safely and effectively. A system facilitates the use of resources from other agencies.

In this course, teamwork is required from individuals with diverse backgrounds from a variety of different departments. The FIRESCOPE ICS will be used during this course for purposes of discussion and during simulations and other activities. The focus of this course is on the use of the expanded ICS.

THE NEED FOR A SYSTEM

Incident Command

Just a few years ago, most departments had never heard of incident command; now, it has become a byword, and many departments are actively developing some type of Command system. The majority of our incident-scene problems are not the result of poor tactical operations. Front-line troops generally carry out tactical assignments with a high degree of efficiency. The problems occur at the Command and control level. Unfortunately, many departments view emergency operations as so unique that conventional rules do not apply and new ones must be invented. Or worse, they continue to use those rules established many years ago.

Actually, emergency operations have one requirement that is common to all types of operations: all operations must have organization to be successful. Think about the last incident you had that turned out to be a complete fiasco. Did personnel do exactly what they were supposed to do, and did you have a good handle on what was going on? How about the last incident that went well? How did it compare to the fiasco in terms of overall organization and control?

It is recommended in National Fire Protection Association (NFPA) 1500, *Standard on Fire Department Occupational Safety and Health Program*, that every department have an ICS in place and train on that system. In the case of a hazardous materials (hazmat) response, the Occupational Safety and Health Act requires that responders be trained in and use an ICS. Refer to the **ICS Self-Study** for applicable laws and standards.

Day-to-Day Fire Department Operations

Most fire departments of any size contain Divisions responsible for various areas, such as suppression, Emergency Medical Services (EMS), training, prevention, etc. These are the functional areas.

Generally, these areas come under the Command of a Chief Officer or other appropriate authority. This is delegating functional responsibility. Personnel assigned to these functional areas answer to their superior in that area, thus maintaining clear lines of authority and communication.

Each area is responsible for objectives according to the overall goals of the department. Generally, each area sets its own priorities for accomplishing those objectives. Company Commanders decide what gets done first.

Characteristics of the Incident Command System

All management systems require the establishment of an organizational structure, which provides the hierarchy of responsibility, authority and formal communications. This structure gives all those in the organization an understanding of their authority, power and responsibilities.

Common Operating Procedures

In emergency operations, we must have the ability to move rapidly from a nonincident organization to an incident organization. We must have a standard methodology that allows us to react out of habit and to get into the basic level of our emergency scene organization immediately.

Common Terminology

For effective communication, words must have a single definition, functional areas must have one set of responsibilities, and no two words may have the same definition. If this axiom is changed, confusion is introduced into the conveyance of information, orders, etc.

Personnel Qualifications

ICS is not a rank-oriented system, but a performance-oriented one. The best-qualified person is placed into the appropriate functional level for the situation.

All personnel who are going to be involved anywhere, at any level in the system, must be trained in the use of ICS.

Needs an Incident Commander

The only position (function) in the ICS that must be staffed at all times is the IC. There must always be someone in charge, responsible and accountable. This position must be assumed by the first or ranking member of the fire department to arrive at the scene.

All-risk System

The ICS, while originally designed for wildland fires, has evolved into an all-risk, all-situation emergency management system. ICS is a people management tool. We manage people and not fires, floods, tornadoes, plane crashes, hazmat incidents, mass casualties, etc. ICS has been used on all types of emergency situations as well as nonemergency situations. Many state fire schools have adopted ICS as the management tool for their seasonal fire schools to which hundreds of state firefighters attend.

Jurisdictional Authority

Unless federal, state or local law states otherwise, the ranking officer from the jurisdiction is the IC. He or she cannot be removed from this position unless the law provides otherwise. However, Command may be transferred to another person from another agency or jurisdiction at the IC's discretion.

Span-of-Control

Span-of-control refers to the number of personnel reporting to any given individual. Optimum span-of-control in the ICS is five, with an acceptable spread of two to seven. On a situation that is not yet under control, no one operating under ICS should have more than five personnel reporting to him or her.

Span-of-control ratios can be driven by a number of factors:

- Training/Experience level of subordinates — Poorly trained or less experienced personnel require more direct supervision, thereby lessening the number of subordinates one can manage effectively.

- Complexity of the incident — A hazmat incident may require more mental concentration, thereby leaving less time available to supervise personnel.

- Type or timeframe of the incident — The speed of operations may influence span-of-control. A fast-moving incident may require a tighter span-of-control with fewer divisions/groups in place, whereas, in a slower moving operation such as overhaul, the supervisor is less pressed for time during decision-making and therefore can manage more personnel/divisions/groups.

For span-of-control purposes, these functions are not counted as reporting to a supervisor: Safety Officer, Liaison Officer, PIO, and Staging Area Manager. In ICS, these positions basically are assistants to the IC, or in the case of Staging, to the Operations Section Chief (OSC).

Unity of Command

Unity of command is a management term that means that each person has only one boss, and he or she knows who that boss is. When anyone receives orders from more than one person, the receiver's confusion is the only logical outcome. Confusion causes delays in solving problems, and increases life and property losses for fire departments.

Everyday Application

In order to manage the large incidents that we encounter effectively, we must develop the appropriate habits that get us efficiently into the ICS. The only way to develop a habit is to do the same thing over and over. We must implement ICS on every incident, using only those functions that meet the complexity of the incident and the number of resources on-scene. Practice reinforces learning.

INCIDENT COMMAND SYSTEM ORGANIZATION AT EXPANDED INCIDENTS

Usually, the ICS organization at routine incidents is simple. There are relatively few problems, a limited number of resources, and the IC can handle all management functions.

Expanding Incident Cues Incident Command System Transition

At a complex incident, more problems need solutions. The increased number of resources results in an increase in management concerns. The IC is unable to do all the jobs and to provide all the answers without assistance.

The basic ICS organization must expand with the needs of the incident. As conditions or needs change so must the organizational structure. The modular design of ICS allows the organization to be structured for specific incidents.

Attempting to deal with all management functions may overload the IC. When overload occurs, the IC may overlook important details, and personnel safety may be compromised.

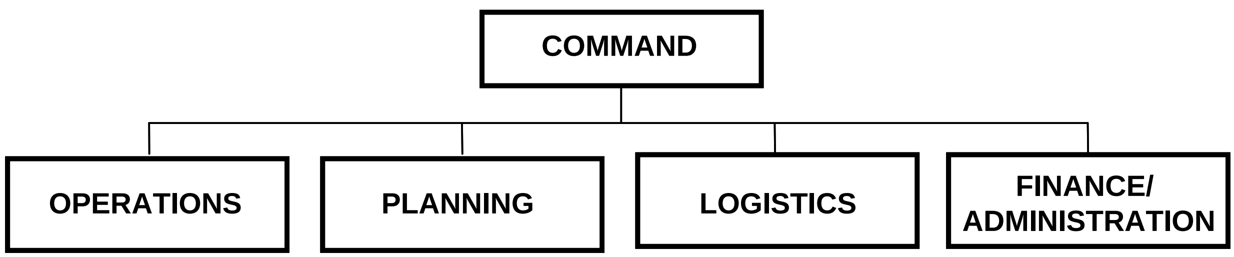
The solution is to use the ICS to delegate specific responsibilities and authority to other personnel. The ICS provides a systems approach to effective incident organization.

Structuring the System Requires Understanding

A Command Officer must understand the functional positions in the ICS, and the responsibilities and roles of each functional position.

INCIDENT COMMAND SYSTEM MAJOR FUNCTIONS: COMMAND STAFF AND GENERAL STAFF

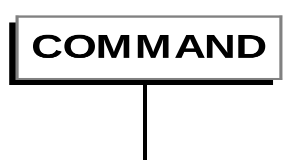
The Five Major Functions



These are the major management functional areas of the ICS.

It is important to remember that the blocks in the ICS are functions or jobs, not positions that **must** be staffed.

Command



The first component of the ICS is Command. No operation can be implemented unless someone is in charge.

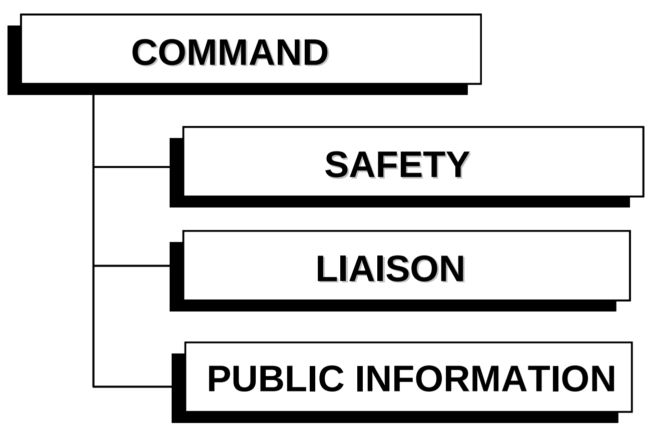
Responsibilities of Command

The responsibilities of Command include:

- assume and announce Command, and establish an effective operating position (Incident Command Post (ICP));
- rapidly evaluate the situation (size-up);
- initiate, maintain and control the communications process;
- establish objectives;
- identify the overall strategy;
- select tactics;
- develop an Incident Action Plan (IAP), and assign companies and personnel consistent with plans and standard operating guidelines (SOGs);
- develop an effective incident command organization;
- manage and coordinate resources and their activities;
- review, evaluate and revise (as needed) the IAP;
- provide for the continuity, transfer and termination of Command;
- release information;
- provide for safety and personnel accountability; and
- coordinate with outside agencies.

The IC is responsible for all these functions. As Command is transferred, so is the responsibility for the functions. The General Staff (five major) functions must be addressed immediately from the initial assumption of Command.

Command Staff



These functions cannot be delegated to other major functional areas and are considered Command Staff functions.

Safety

Safety is responsible for enforcing safety procedures and practices at the emergency scene. Safety also identifies present and potential hazardous or unsafe conditions.

Normally, the Safety Officer position is staffed when Command cannot devote sufficient time to safety analysis. As the number of resources and incident complexity increases, the IC must have someone else to focus on safety.

Safety has the authority to stop unsafe acts when time or conditions prevent using regular lines of authority (imminent danger). Safety must notify Command when such an action is taken.

A Safety Officer cannot be just anyone on the incident scene. The Safety Officer for structural firefighting must be very knowledgeable in fire behavior, building construction and collapse potential, strategy and tactics, and department safety rules and regulations, and have considerable experience in incident response.

Liaison

Liaison is the point of contact with outside agency representatives. Liaison is responsible for the identification and coordination of all outside agencies.

The Liaison Officer position is staffed when Command cannot devote sufficient time to talking to outside agency representatives. The Liaison Officer acts as a buffer between the IC and other agencies.

What agencies belong in Liaison versus the Unified ICP? Those agencies that provide assistance but have no legal responsibility for the outcome usually are placed with Liaison. Agencies that provide significant human resources to incident operations should be at the ICP.

Public Information

This position is responsible for gathering and releasing incident information to the media and other appropriate agencies. All media releases must be approved by Command. The PIO has the responsibility to update Command on media needs, and Command should keep the PIO current on the status of operations.

The PIO function normally is staffed when Command cannot take the time to talk to the media. The PIO establishes a media area away from the ICP and acts as the media point-of-contact.

Single Versus Unified Command

In a Single Command situation, only one agency has legal responsibility. Hazmat incidents, mass casualty incidents, natural disasters or wildland fires, among others, may involve a number of jurisdictions and/or agencies that have a legal or functional need to be involved directly in the decision-making process. The worst thing that can happen is to allow each of these responsible agencies to establish an ICP of its own, separate and distinct from the others. In this instance, it is critical that there be a UC.

What cues the need for a UC?

- More than one agency responsible for decision-making within a single jurisdiction.

  Example: A passenger airline crash within a national forest. Local fire, local medical, federal forestry, and National Transportation Safety Board (NTSB) are all involved.

- More than one jurisdiction is involved. Example: A major flood, hurricane, etc.

  All agencies with responsibility to manage the incident contribute to the Command process. Together they determine overall incident objectives and strategies and plan tactics jointly. This method ensures the maximum use of assigned resources.

- The location of the incident.

  Example: An inland waterway entirely within the boundaries of a single jurisdiction also could involve U.S. Fish and Wildlife Service and the U.S. Coast Guard (USCG).

Who is involved?

- All agencies with responsibility to manage the incident contribute to the Command process. Together they determine overall incident objectives, determine strategies, and plan tactics jointly. This method ensures maximum use of assigned resources.

- One key official from each jurisdiction or responsible agency.

- Representatives from departments in a single jurisdiction.

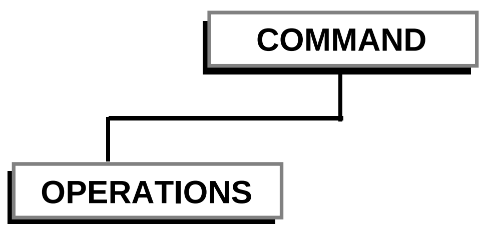
  The IC may be determined by local or state law; California law states that the law enforcement agency is the IC for hazmat incidents on the highways. Where there is no law determining who is in charge, agencies should work together to determine which agency takes the lead for each risk a community faces.

Generally, the agency with the greatest jurisdictional involvement is assigned the Operations function. Depending on the type of incident, someone must determine which agencies actually have responsibility. It is important to recognize prior training and experience when staffing the Unified ICP and Operations function.

Single/Unified Command Differences

- In a Single Command structure, a single IC is solely responsible for developing management strategy of the incident.
- In a Single Command structure, the implementation of strategy and tactics to achieve operational control is the responsibility of one person — the OSC.
- In a UC structure, individuals designated by involved jurisdictions/departments jointly determine objectives, strategy and priorities.
- The determination of which jurisdiction/agency the OSC represents must be made by mutual agreement of the UC.

Operations



Operations is responsible for the management of all operations directly applicable to the primary mission. Its function is to direct the organization's tactical operations to meet the strategic goals developed by Command. Operations allocates and assigns resources to establish control of the incident and participates in the development of the IAP.

Staffing Operations

The Operations Section is responsible for the direct management of all incident tactical activities, tactical priorities, and the safety of personnel working in the Operations Section.

The most common reason for staffing Operations is to relieve the span-of-control problems for the IC. These span-of-control problems occur when the number of Branches, Divisions and Groups, **coupled** with Planning and/or Logistics Section elements, exceeds the IC's ability to manage effectively. The IC then may implement the Operations Section to reduce the span-of-control, transferring the direct management of all tactical activities to the Operations Section. Then the IC is able to focus attention on the overall management of the entire incident as well as interact with the Command Staff and General Staff.

A complex incident, in which the IC needs assistance determining strategic goals and tactical objectives, also may require implementing Operations.

However, Operations should be staffed only to improve the management of the incident. If it is not used to maintain a manageable workload or an effective span-of-control, the IC could end up with a span-of-control of one.

After Operations is implemented, the duties of the IC are modified slightly. Operations will be responsible for all tactical operations, resources and accomplishment of specific activities. The IC will be responsible for the development of the incident strategy and the communication of that strategy to the OSC.

When Operations is staffed, the IC focuses on objectives, and the OSC focuses on strategies and tactics. The IC no longer talks to the operational companies.

OPERATIONS SECTION EXPANDED

Such terms as engine and truck represent personnel who are doing specific tasks at the scene of an incident. If you do not have truck companies, you still need to perform the tasks discussed.

The ICS organizational charts used in this section and those presented in the classroom lecture represent the fire scenes shown on the slides during lectures. These charts are correct, but they are just one way of managing a specific incident using ICS.

Single Resources and Crews

A single resource is an individual company, e.g., engine, truck, rescue, ambulance, etc.

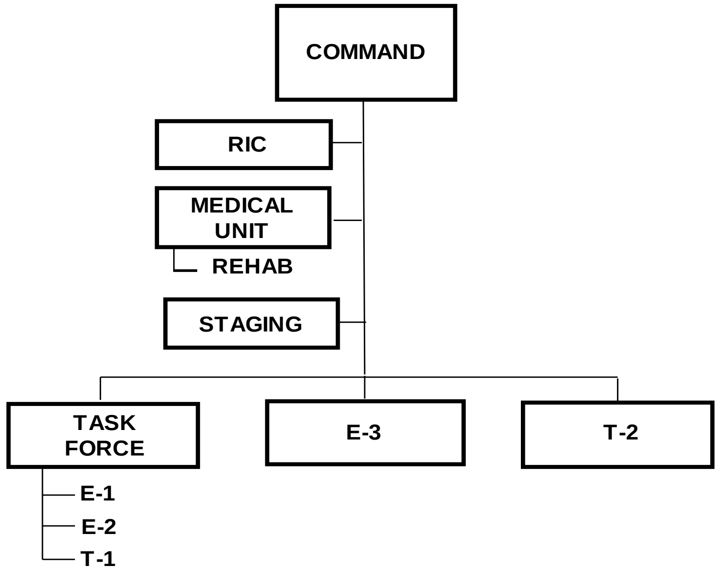
Personnel who arrive at the incident scene on other than a piece of fire apparatus (engine, truck, etc.) are formed into a working unit called a crew, with a crew leader. Crew size should conform to span-of-control guidelines; crews normally are designated by the crew leader’s name, or by function (e.g., Crew Burns, Vent Crew).

Task Force

A Task Force includes from two to five different types of single resources and a leader assembled to accomplish a specific task. A Task Force may be one engine and one truck; two engines and a brush vehicle; two engines and two ambulances; three engines and two trucks, etc. A Task Force operates under the supervision of a Task Force Leader.

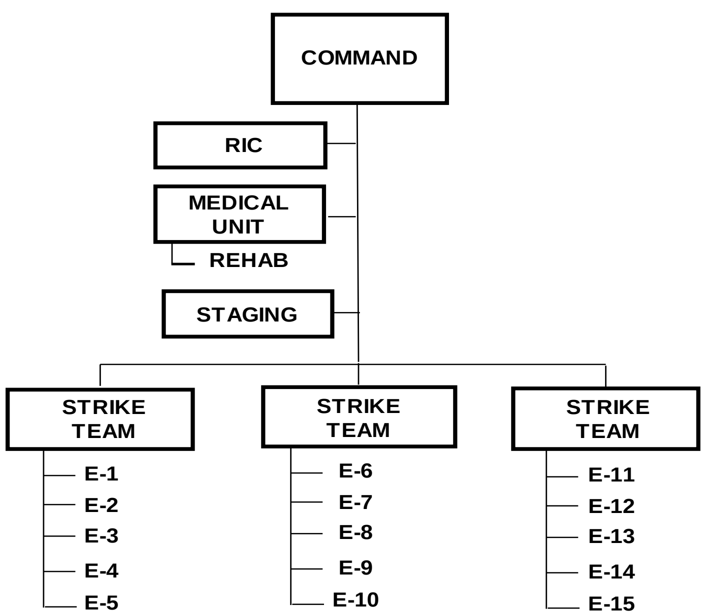
The Task Force may be assembled at the incident scene to provide specialized resources required for a specific job. Task Forces may be assembled before an incident and become part of the department’s dispatch philosophy. For example, Los Angeles City dispatches Task Forces of two engines and one truck. These apparatus arrive on the scene with several officers and personnel, but only one officer is designated as the Task Force Leader. All communications for the Task Force units are directed to the Task Force Leader.

Some departments create Task Forces of one engine and one brush unit for response during brush fire season. The brush unit responds with the engine company wherever it goes.



Strike Team

A Strike Team consists of five of the same type of single resource, with a leader. A Strike Team may be five engines (Engine Strike Team), five trucks (Truck Strike Team), five EMS ambulances (EMS Strike Team), etc. The Strike Team concept is used frequently at wildland fires. A Strike Team operates under the supervision of a Strike Team Leader. Strike Teams generally are comprised of engine companies.

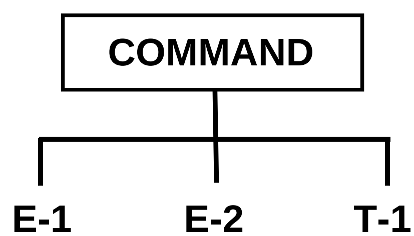


Usually, Strike Teams are assembled for wildland fires. It is the most reasonable way to control 100 to 200 single engine companies, since they would represent only 20 to 40 Strike Teams. Strike Teams may be used at structure fires (just as any ICS function), but this is not the norm.

Strike Teams and, more often, Task Forces may be used by Division and Group Supervisors to correct a poor span-of-control problem.

Incident Command System Example

This organizational chart is for the first alarm for a grocery store fire with three companies/crews and a Chief Officer. There is a 25 percent involvement of the grocery store. This fire is large enough to add resources to show the application of ICS.

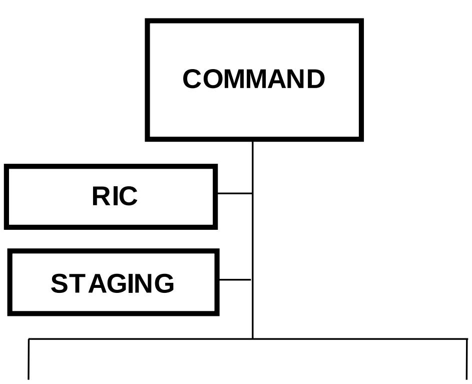


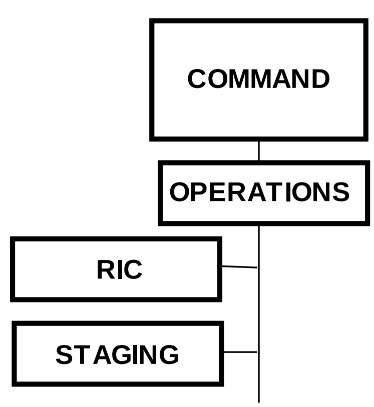
The Chief is Command. Engine/Crew 1 has been assigned to advance a hoseline into the building and begin to attack the fire. Engine/Crew 2 has been assigned to provide a backup line and conduct a primary search. Truck 1/Crew 3 has been assigned ventilation.

Why is this ICS? The radio call sign for the IC is “Command,” it is not “Chief 1.” When assigned a functional responsibility in the ICS, your radio call sign becomes the function name.

This size of ICS organization will handle approximately 90 to 95 percent of your incidents.

Staging





Staging is directly responsible to Operations. If Operations is not staffed, Staging reports to Command. Staging is responsible for the coordination, support and distribution of incoming resources.

Staging is a location where resources ready for immediate assignment into the incident are placed temporarily. There are two levels of Staging.

Level 1 Staging

Level 1 Staging is used to control the first alarm or initially dispatched units.

Have you ever responded with three to six pieces of apparatus to find a pot of food burning on a stove? All apparatus park right in front of the dwelling. Personnel from those units trek through the house, over the white carpet, to see the burned food. What a mess we are creating!

Or, your department has the problem of companies assigning themselves on arrival (freelancing).

Or, you are the IC and all the responding units are calling you for assignments at this working fire. You are not ready to make assignments yet, but they keep calling you every 20 seconds until you give them an assignment or they assign themselves.

You can eliminate all of these problems by establishing within your SOGs a policy of Level 1 Staging.

As determined by department policy, only one or two pieces of apparatus can go directly to the scene (excluding Chief Officers). Any other unit responding must stop one block from the incident in the direction of travel, and report its location. For example, the Engine 2 officer calls Command and states “Engine 2, one block west.” Now Engine 2 can get to the incident scene only on an order from Command.

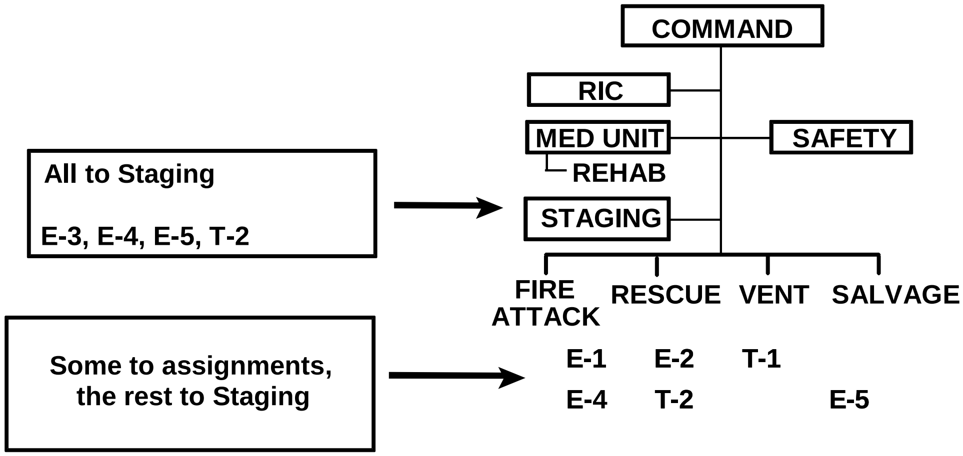
What if you do not get an assignment soon after staging at an obvious working incident? Wait two minutes, then call the IC again, stating “Engine 2, one block west.” If after two additional minutes you do not receive an assignment, walk to the ICP and advise the IC that you are ready for an assignment. After receiving the assignment, call the apparatus by radio and tell them what to do and where to meet you.

Level 2 Staging

Level 2 Staging is a location to which all second or greater alarm or mutual-aid companies report. The Staging location should be announced when the additional resources are dispatched. This is the cue to establish the Staging Area Manager function.

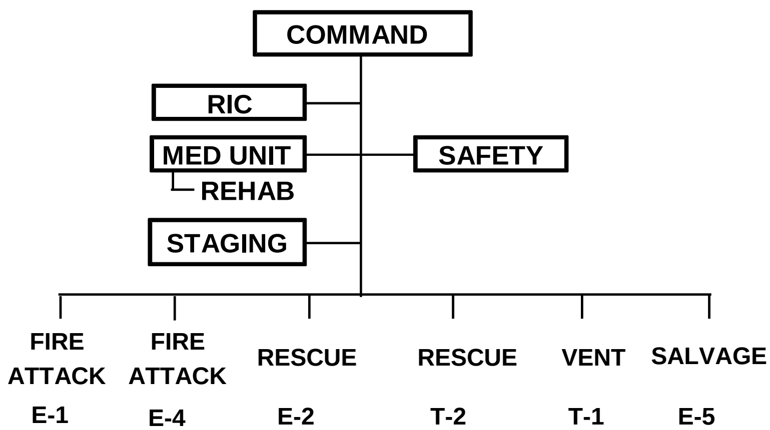
For example, to the grocery store fire discussed earlier, we will add three engines and one truck. How will we distribute these resources as they arrive at the incident scene?

All could be allowed to respond directly to the Staging Area, or some could receive assignments while en route. Those not receiving assignments would go to Staging.



Span-of-Control

Now, we place both alarms on the ICS organizational chart.

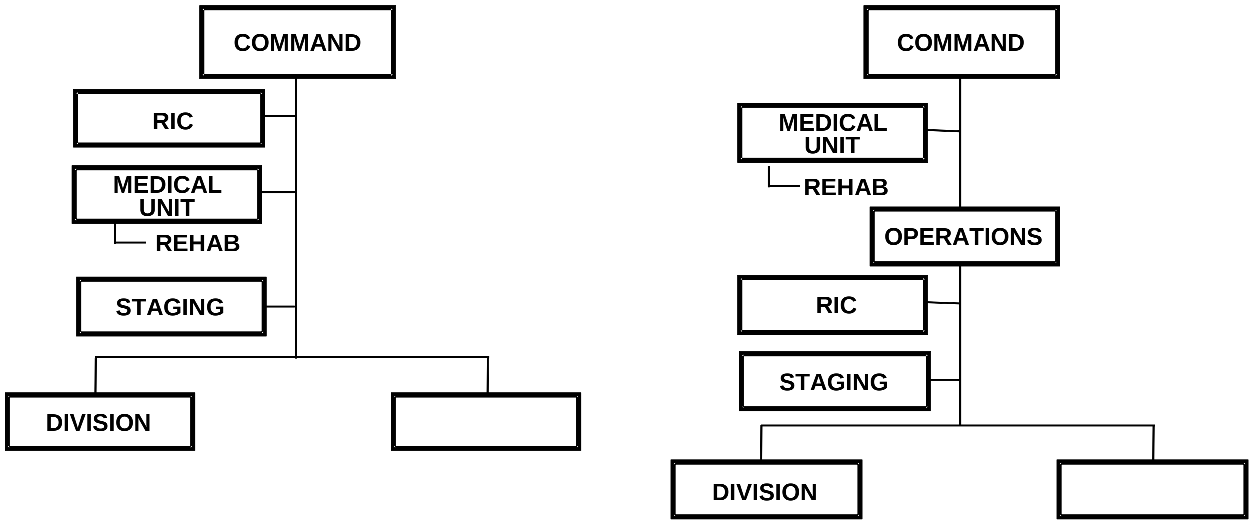


What is wrong with the organization?

Divisions and Groups

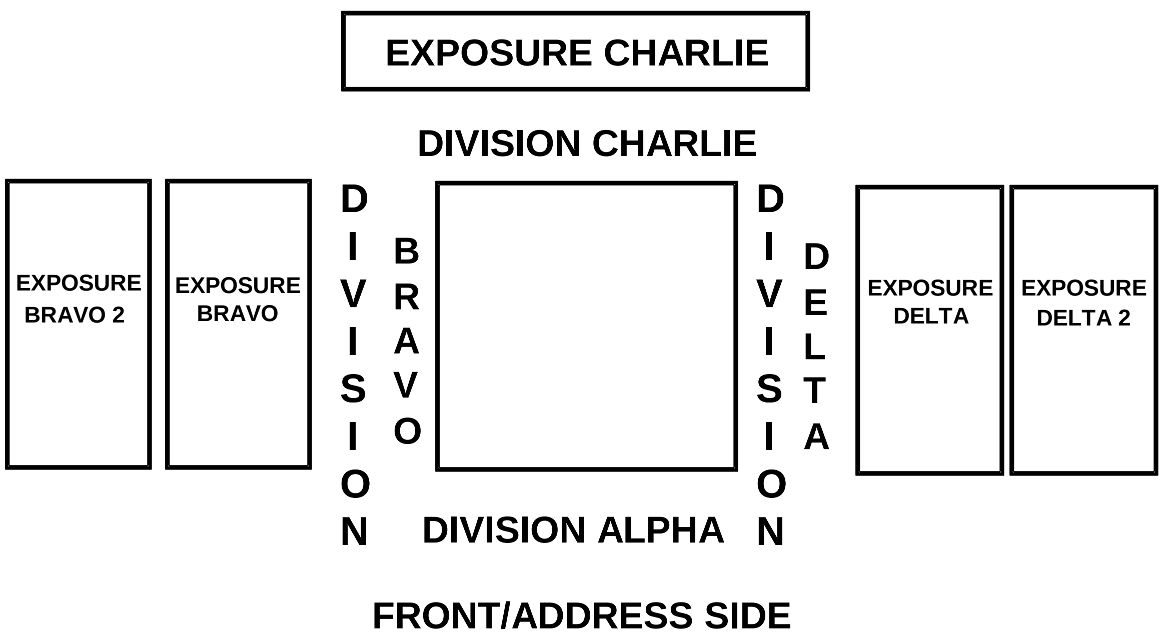
<u>Divisions</u>

A Division is responsible for operations within a defined geographic area. This area may be a floor in a building, the rear of a fire building, or a section of a brush fire. This is the level most often employed during routine fire department emergency operations.



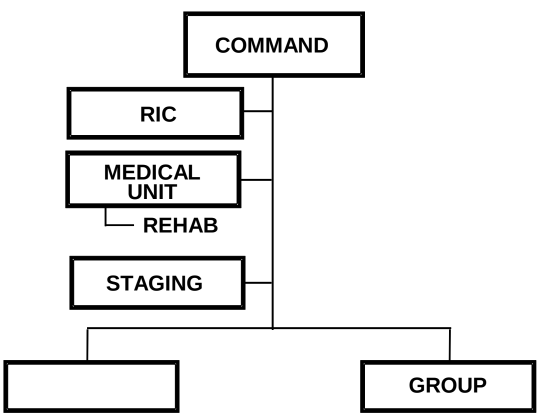
ABCD/Dividing the Incident Scene

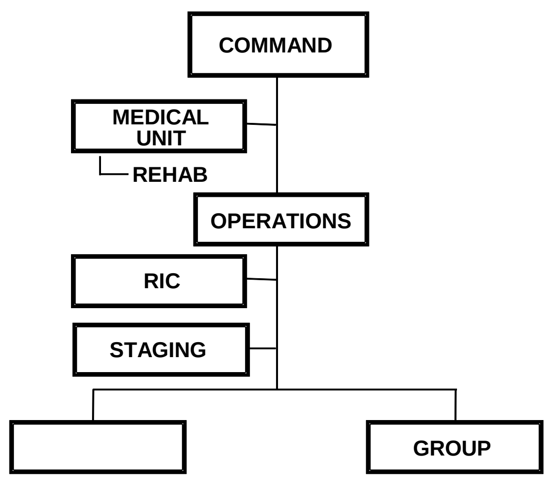
To use Division terminology effectively, a department must use a standard system.



Groups

Groups generally are assigned to a specific function such as ventilation, search and rescue, water supply, etc.





Groups are responsible for an entire job wherever it may be required; therefore, they work across Division lines. This being the case, Group Supervisors **must** coordinate with the Division Supervisors when they enter a Division or perform work that will affect Division personnel, operations and safety. Groups should do nothing in a Division without prior consultation with the Division Supervisor.

Division and Group Supervisors are at the same power level in the ICS. Divisions cannot report to Groups, and Groups cannot report to Divisions.

Application of Division and Groups

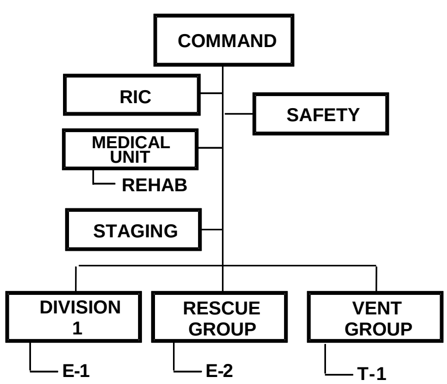
<u>Divisions and Groups</u>

The terms Division and Group are common designators used by the U.S. fire service to define tactical-level management positions in the Command organization. Divisions represent geographic responsibilities such as Division C (the rear of the facility). Groups represent a functional (job) responsibility such as the Ventilation Group.

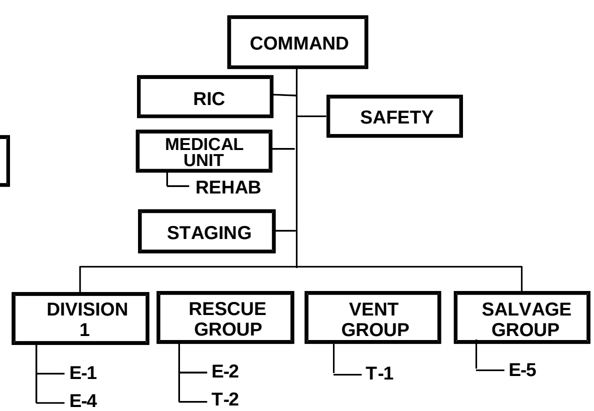
When initial assignments are ordered to incoming resources, the IC should begin assigning Company Officers (COs) to appropriate Division and Group responsibilities. By doing this at all small incidents, the department is preparing itself to manage effectively the resource-intense incidents that occur much more sporadically.

Note: The term sector was used by many departments in the United States. This term is no longer recognized by NIMS. It has been replaced by Divisions or Groups, which are generic and can be used to represent both geographic and functional responsibilities, such as Division C and Ventilation Group. The National Fire Academy (NFA), due to the need for consistency and application during activities and simulations and a prior agreement with FIRESCOPE, will use the terms Division and Group in all its courses.

Remember the grocery store fire? Here is a better way to set up under ICS. This is what we mean by establishing a habit of operation that will set the organizational foundation when you have a more serious situation.



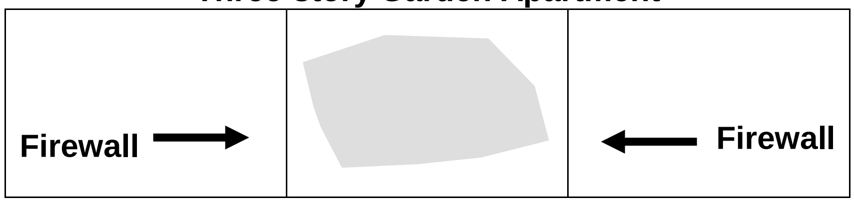
Initial Arrival



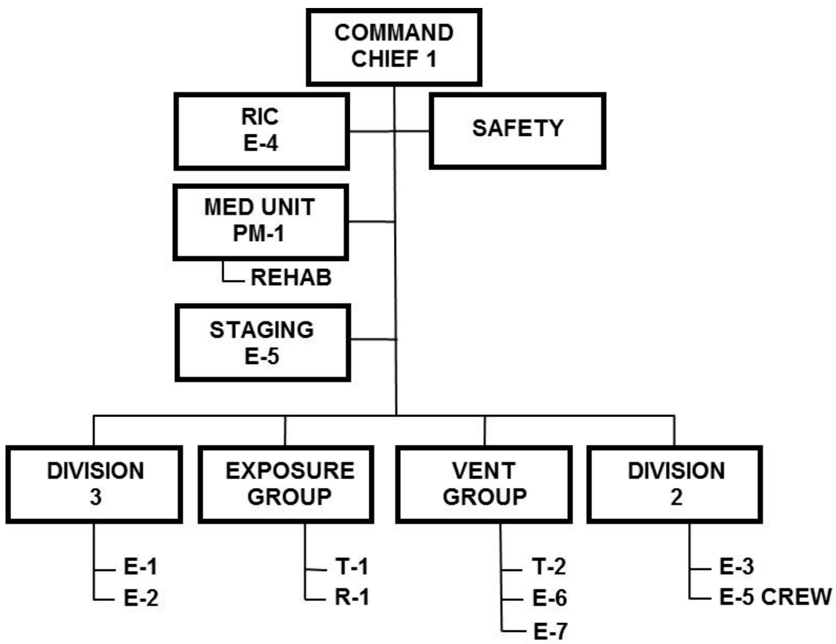
Additional Units

Let's look at a three-story garden apartment fire. The center section of the structure is well involved at the attic and third-floor levels. Seven engines, 2 trucks, and a rescue unit have arrived; approximately 38 personnel, or 10 crews. Other units are responding. Engines carry four people; four on trucks; and two on Rescue Units.

Three-story Garden Apartment



Center section 50 to 75 percent involved
third floor and attic



E-1 arrives. The officer gives a brief initial report and directs the E-1 crew to attack the fire with a 1 3/4-inch hoseline from the third floor and conduct a primary search on that floor. The officer assumes Command. Command requests a second and third alarm.

Safety Officer arrives and assumes safety duties.

E-2 arrives. Command directs the officer of E-2 to assume Division 3. Command assigns E-1 crew to Division 3.

T-1 arrives. Command directs T-1 Officer to assume Exposure Group and stop the fire from spreading past the firewalls on Sides B and D. Exposure Group requests one additional engine and one additional truck.

PM-1 arrives and is assigned to Rehab.

Chief 1 arrives. Chief 1 assumes Command and retains the officer of E-1 to assist at the ICP.

E-3 arrives. Command directs E-3 Officer to assume Division 2 and to complete a primary search and check for downward extension.

E-4 arrives. Command directs E-4 Officer to be Rapid Intervention Crew (RIC).

T-2 arrives. Command directs T-2 Officer to assume Vent Group and perform horizontal ventilation where needed.

E-5 arrives. Command directs E-5 Officer to become the Staging Area Manager and send E-5 crew to report to Division 2.

E-6 arrives. Command directs E-6 to report to Vent Group. Vent Group requests one additional company.

R-1 arrives. Command directs R-1 to report to Exposure Group.

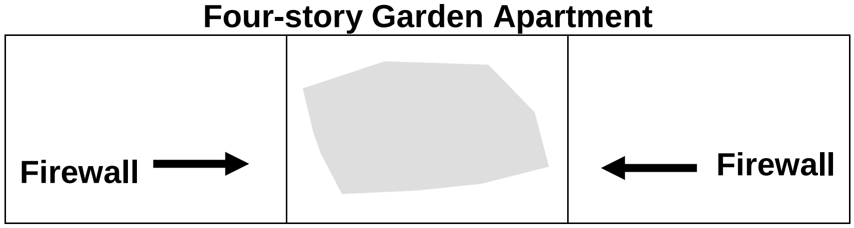
E-7 arrives. Command directs Engine 7 to report to the Vent Group.

Staffing the Operations Section Chief Function

This position is staffed when Command's span-of-control is exceeded or when Command, due to other concerns, cannot focus full attention on tactical operations.

Let's look at a major fire in a four-story garden apartment. The attic and fourth floor are heavily involved. There are additional complexities at this incident. This is a larger building and fire area, and a nighttime situation. There are 48 displaced families, and the complex is served by a dead-end water main resulting in very poor water supply. It is February in a northern state. There is only one access road into the apartment complex. There is no vehicle access to the rear.

Four-story Garden Apartment

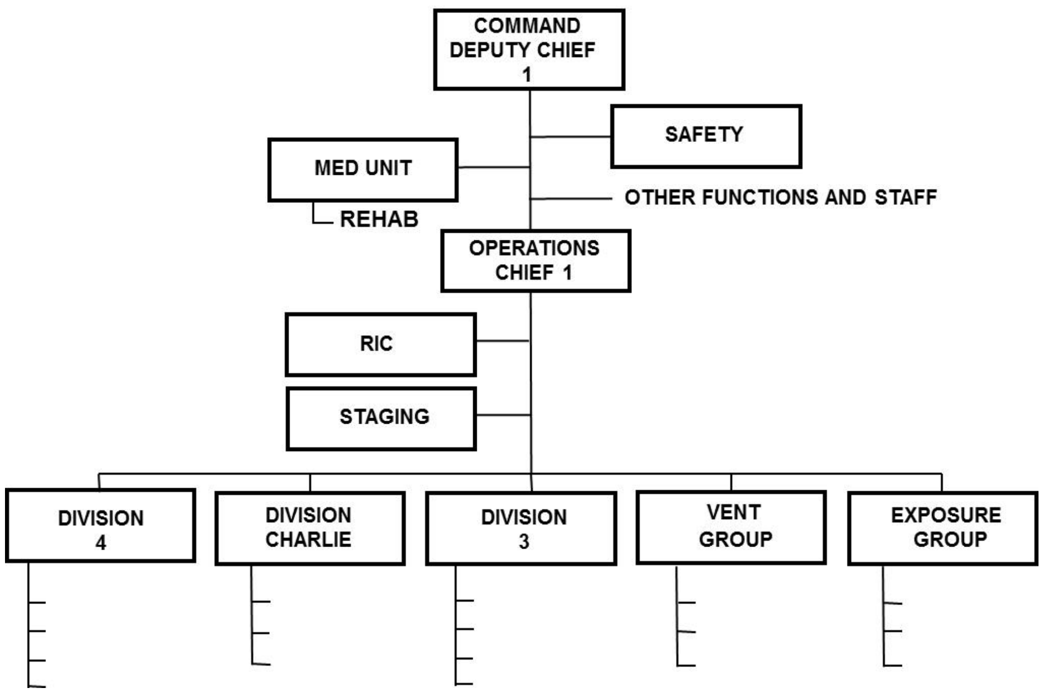


Center section 50 to 75 percent involved
fourth floor and attic

Command is faced with many problems:

- planning;
- relocation of and care for displaced residents;
- liaison with other agencies;
- initial water supply problems;
- logistics for fire and EMS units;
- limited access to complex;
- no vehicle access to rear; and
- nighttime fire.

Command chooses to staff the OSC function.



E-1 arrives. The officer gives a brief initial report and directs the E-1 crew to attack the fire with a 1 3/4-inch hoseline from the fourth floor and to do a primary search on that floor. The E-1 Officer assumes Command. Command requests a second and third alarm.

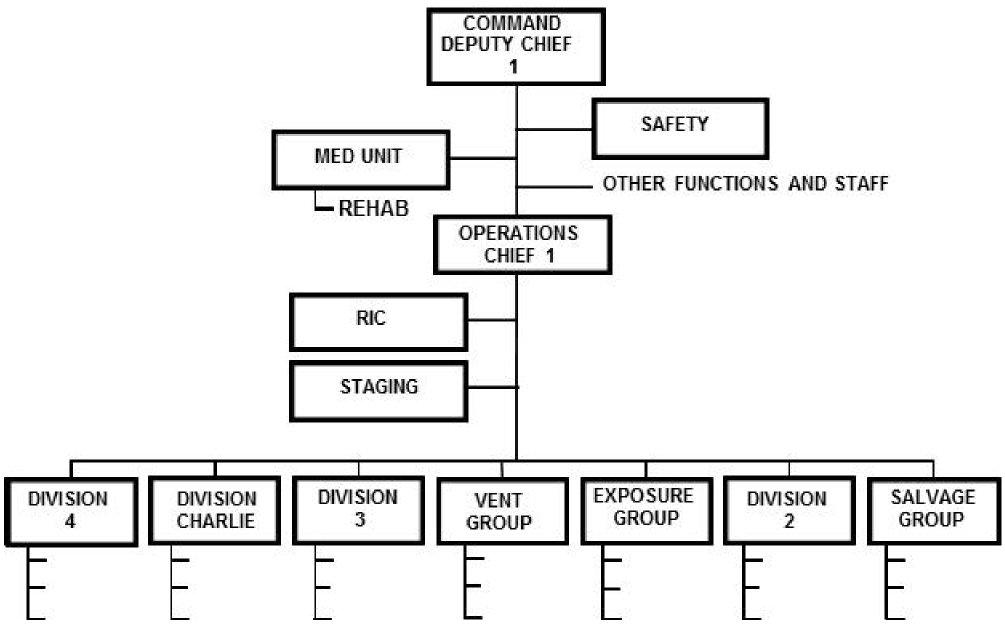
Command initiates Division 4, Division C, Division 3, Vent Group and Exposure Group as the first and second alarm resources arrive.

Chief 1 arrives. Command is transferred and the Chief assigns the E-1 Officer to Operations. With the need to deal with the 48 families, the poor water supply, and access problems, Command cannot continue to be involved with tactics. Command must step back and handle those other problems while Operations handles the tactics.

We could have assigned the E-1 Officer to Planning/Logistics, but our goal here is to show how to establish Operations. Also, another Chief Officer arriving on the scene could have been assigned Operations.

Branch Director

At the four-story apartment fire, Operations wants to add a Division 2 and a Salvage Group.



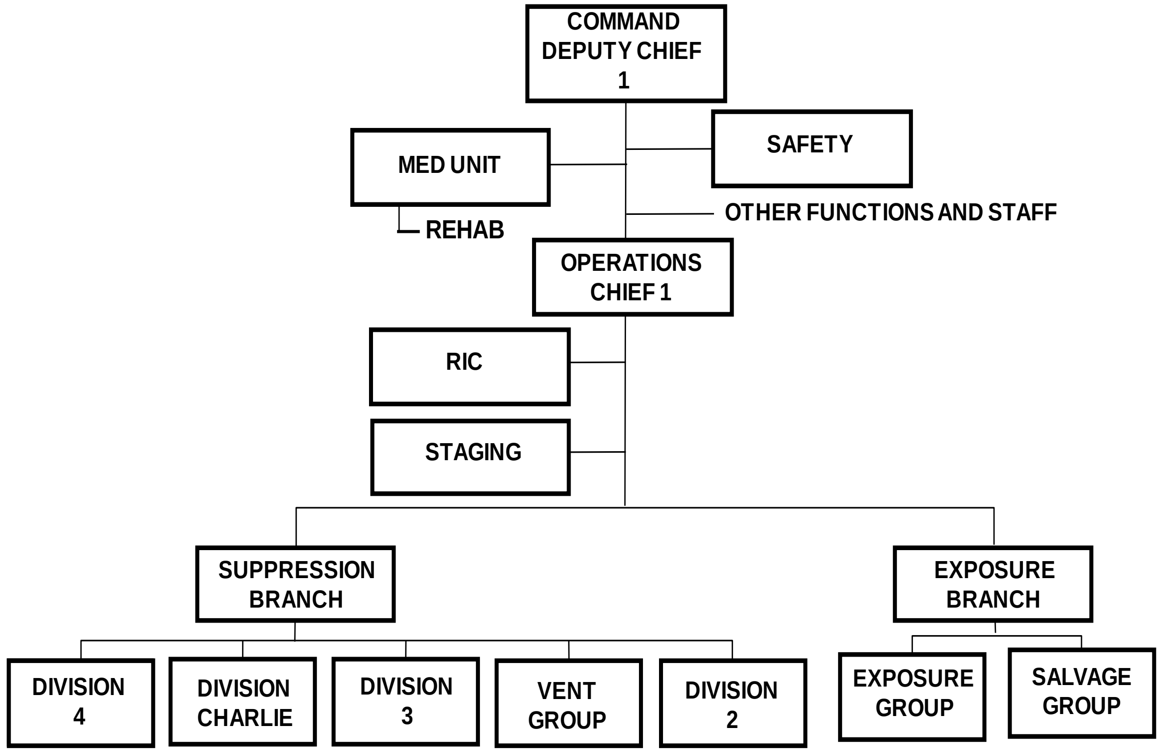
What has happened to the organization? The span-of-control now exceeds the optimal. This cannot be justified before an incident is brought under control.

Command could have experienced the same span-of-control problem if the OSC had not been staffed.

Branches

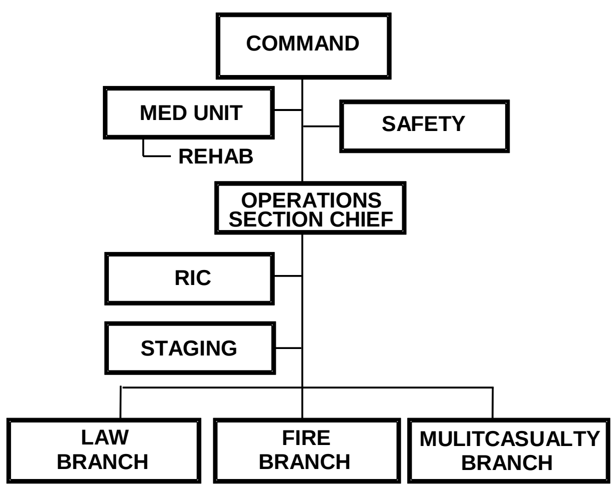
<u>Functional Branch Structure</u>

When the nature of the incident calls for a functional branch structure, e.g., a major aircraft crash within a jurisdiction, three departments within the jurisdiction (police, fire and health service) may be organized into a functional branch structure operating under the direction of a single OSC. In this example, the OSC is from the fire department with branch directors from all three departments. Other alignments could be made depending upon the jurisdiction's plan and type of emergency. Note: Command in this situation could be either Single Command or UC, depending on the jurisdiction.



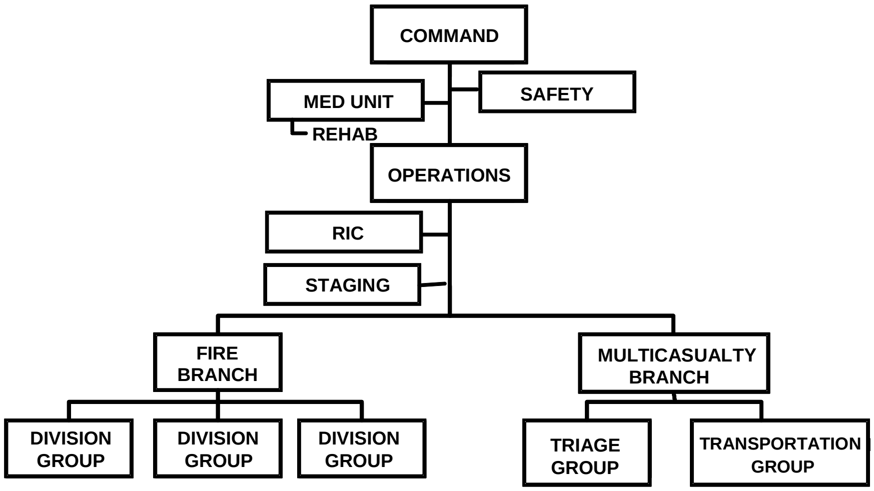
The organizational chart above shows the result of creating Branches on Command's span-of-control. Did the Exposure Branch need to be created for span-of-control reasons?

Functional Branches



Multijurisdictional incidents: When the incident is multijurisdictional, resources are managed best under the agencies which have normal control over their local resources.

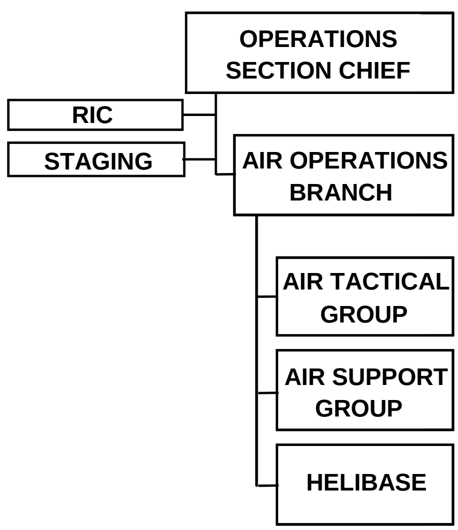
Branches should be used at incidents involving two or more distinctly different major management components (e.g., a large fire with a major evacuation; a large fire with a large number of patients). The IC may elect to assign Branches to forward positions to manage and coordinate activities.



Multibranch

When the incident requires the use of aircraft, such as for the transportation of victims from a multicasualty incident, high-rise rooftop rescue, swift water rescue, or wildland fire, the OSC should establish the Air Operations organization. Its size, organization and use will depend primarily on the nature of the incident and the availability of aircraft.

Air Operations are complex operational elements. Air Operations must be closely coordinated and fully understood by the IC and Operations Section Supervisors.



Note: For more detailed information, review your "Field Operations Guide."

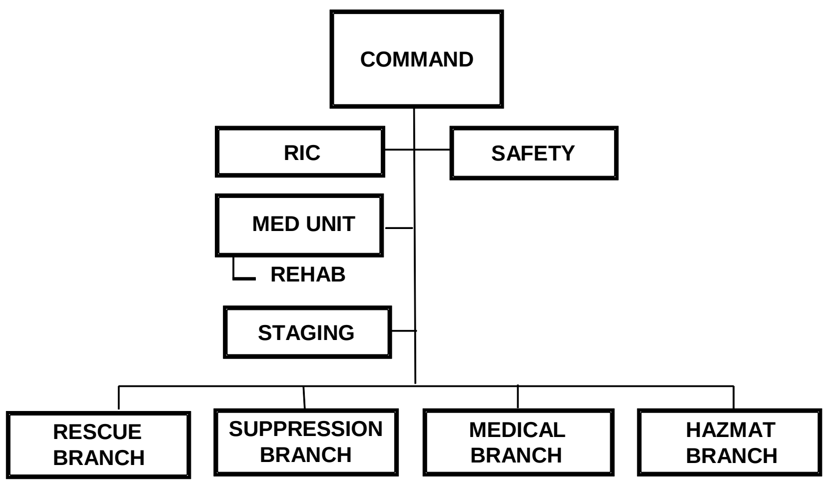
Incident Command System Functions Normally Staffed

Normally, the functions are staffed in the following order:

- Command;
- Division and Groups;
- Operations; and
- Branch.

Complex Incident Branch Organization

When an incident is already complex when first units arrive, and has a probability of having a large ICS organization, the initial IC should start at the Branch level instead of the Division and Group level.



TWO IN/TWO OUT

Occupational Safety and Health Administration (OSHA) requires that a **minimum** of four firefighters be on location and in full turnouts, including self-contained breathing apparatus (SCBA) whenever firefighters are in the Immediately Dangerous to Life and Health (IDLH) area, meaning there are toxins or toxic products of combustion.

This requirement is waived when there is a known rescue situation. This means that there must be a **known** situation where the victim(s) is in the structure. A primary search for possible trapped victims does not fit this exclusion of rule.

The firefighters on the outside must be in full gear and SCBA and be ready to act to enter the structure should something go wrong. These personnel may be doing menial tasks on the outside but must be ready to enter the structure at a moments notice.

RAPID INTERVENTION CREW

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program* requires having specifically designated rescue crews at the incident scene. This requirement is based on the realization that firefighters are exposed to the highest risk of injury or death while operating at the scene of an emergency and that one of the most effective mechanisms for reducing that risk is to have an RIC ready to come to the assistance of emergency personnel should the need arise.

One of our primary concerns should be to reduce the risks that our firefighters are exposed to during emergency operations. It is not realistic, however, to assume that all the risks can be avoided, controlled or eliminated from the firefighter’s environment. We realize that danger is part of our work environment, and the possibility that things can go wrong must always be considered. Recognizing this possibility, we must make some provisions to assist members who find themselves in trouble.

An important aspect of incident management is to identify the risk characteristics of the situation and to evaluate specific risk factors that apply to each activity. A situation involving a high level of risk requires a greater commitment to rapid intervention for the rescue of emergency personnel should something go wrong. An interior fire in a small, single-story building presents a certain level of risk to the firefighters who enter to search for occupants and to extinguish the fire. While a situation may appear to be routine, there are still things that could go wrong and place firefighters in imminent danger. A flashover could envelop them in flames, a structural collapse could trap them, or a faulty SCBA could cause a firefighter to run out of breathable air. In a small, single-story occupancy, the chances are fair that firefighters could extricate themselves from most situations if they are a short distance from an exit that leads directly to the exterior.

The same fire situation in a large building, a basement, an upper floor, in the hold of a ship, or in a high-rise building presents a much greater danger. Simply because, in these areas, the ability of individuals to rescue themselves is reduced by the distance they would have to travel to reach a safe area and the difficulties they might encounter along the way.

The risk also may be increased by the nature of the task in which firefighters are involved. Rescuing an unconscious worker from a confined space that is filled with toxic and flammable vapor is much more dangerous to rescuers than removing an unconscious person from a wrecked automobile on a city street. Both situations involve a degree of risk to the rescuers, but the nature and degree of the risks are very different.

The composition and placement of RICs may be somewhat agency-specific, dictated by individual needs and resource availability. However, it is important that written procedures/

guidelines be developed for the use of these crews, especially when they are performing exterior operations in support of interior crews. These written procedures also should include evacuation signals and guidelines for implementing evacuation and relocation of personnel from the area of danger. In addition, for agencies involved in auto/mutual-aid response, it is important to develop consistency among the participating agencies in the use of RICs.

An RIC should consist of a minimum of two members, fully equipped with appropriate clothing, SCBAs, portable radio and necessary tools to be effective. Also, it should monitor the tactical radio channel to maintain a complete and accurate understanding of operations and changing conditions as well as location of tactical personnel. This information should be documented on a tactical worksheet by a member of the RIC. In the early stages of an incident, RIC personnel may perform other functions, e.g., secure utilities, flake-out hoselines, work in the Command Post (CP). However, they must remain prepared to redeploy to perform rapid intervention functions. As the incident expands in size or complexity, personnel should be assigned as a **dedicated** RIC. Placement of the RIC may depend on the incident; for example, in a high-rise operation, the RIC should be located in Staging. In many other situations, a good location would be near the ICP or close to Operations. It should not be located in a position that would interfere with ICP operations. If the incident covers a large geographic area, more than one RIC may be required.

In a hazmat operation, the Entry Team Leader must ensure that there is an RIC of at least two personnel in the appropriate level of protection before the primary entry team accesses the hot zone. In a hazmat operation, this team is designated as the Backup Team. The personnel of the Backup Team need to have the same level of required technical competency as the Entry Team. This includes the appropriate level of protection required for the material(s) involved.

While there is some flexibility in procedural issues regarding rapid intervention, it is paramount that whenever personnel are operating in positions or performing functions that would subject them to immediate danger, such as equipment failure, or other unexpected occurrences, at least one properly-attired RIC must be available to provide assistance or rescue.

Rapid intervention procedures should not be confused with initial interior structural firefighting operations addressed in NFPA 1500. NFPA 1500 requires the presence of four personnel before beginning interior structural firefighting. Two members operate in the hazardous atmosphere, while the other two members are the rescue team outside the hazardous atmosphere. If there is an immediate life safety situation, rescues may be initiated, but members should carefully evaluate the level of risk that they would be exposed to by taking such actions. If it is determined that the situation warrants such action, incoming companies should be notified so that they will be prepared to provide necessary support and backup upon their arrival. When waiting to be deployed, members of the RIC may be assigned to other tasks, e.g., pump operator or initial IC, as long as these other activities do not interfere with their ability to respond as an RIC.

Example: A Chief Officer with two engines and one truck is operating at a structure fire. A portion of the second floor collapses. This information is transmitted to the IC. At this point, a likely scenario is as follows:

- The IC activates a signal and, by radio, orders all personnel out of the building.

- A Personnel Accountability Report (PAR) is taken, and it is found that one member is missing. That member was last seen working near the collapse area.

- The RIC Team is directed to re-enter the structure, quickly assess its stability, recover the missing firefighter, and remove the member from danger.

SUMMARY

We have examined a model ICS in its entire spectrum. Such a system is useful not only on large operations but also can and should be applied to any incident regardless of size or type.

A close examination of various incidents should reveal that nearly all the functions and duties discussed thus far have been carried out. The key point to remember is that all functions are carried out at every incident. It is the size and/or type of incident that dictates the degree to which each function is addressed. The resources available in terms of personnel will dictate how many functional responsibilities can be delegated.

Another vital consideration is training. Simply delegating a function or responsibility does not guarantee success in carrying out the appropriate responsibilities.

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Activity 2.1

Application of Basic Incident Command System Functions

Purpose

To use components of the ICS to develop an organizational structure for an emergency incident.

Directions

1. In small groups, determine the appropriate ICS organization for the scenario assigned.

2. Analyze the situation, and develop an ICS organization appropriate for the situation and the resources involved. Use whatever number of apparatus/personnel you need to handle these incidents.

3. Each group will prepare an ICS organizational chart on easel pad paper and will have a representative present its work to the class with a brief explanation of why that particular organization was developed.

4. You may use only the following ICS functional positions:

    a. Command.

    b. Command Staff (Safety, Liaison, Public Information).

    c. Staging.

    d. Divisions/Groups.

    e. Resource Units (single resources, Task Forces, Strike Teams, and crews).

Scenario 1

Two-story center corridor boarding house, 35 x 70 feet, ordinary construction — fire on two floors, heavy smoke, trapped occupants. Two-story exposure on Side B (building left of the telephone pole on the slide). No exposures on Side C or Side D. Stair shaft to the second floor comes up just behind the room where the heavy fire is showing. A second stair shaft is at the rear of the building.

Scenario 2

A two-story, end-of-row modern townhouse with a garage fire.

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CASE STUDY: HOMESTEAD ROAD GAS EXPLOSION (JANUARY 29, 1996)

Scenario

On that January evening the winds were blowing east to west at about 5 knots. In the evening, at this time of year, it is typical to get mild winds out of the east. This becomes a factor because the majority of the industrial area is located on the east side of town with the majority of the residential area lying to the west.

There are a significant number of large industrial plants that are associated, in some fashion, with the semiconductor industry. These companies used a variety of chemicals and exotic compounds in their process and in spite of the "scrubbers" and other required filtering equipment, odors are emitted and carried on the winds into the residential side of town.

When this condition exists, it is common for several of the engine companies serving that part of the city to be dispatched to **"odor complaints"** multiple times during the shift. This is a single engine, nonemergency response and most often does not amount to anything.

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UNIT 3:
DECISION-MAKING REVIEW

LEARNING OUTCOME

Identify, analyze and understand incident scene decision-making and apply the appropriate method.

OBJECTIVES

The students will:

1. *Contrast the difference between classical and Naturalistic Decision-making.*

2. *Explain whether classical or Naturalistic Decision-making is the appropriate decision-making model to use at a particular incident.*

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INTRODUCTION

This unit explains the difference between classical and Naturalistic Decision-making. It uses the Command Sequence to teach the classical methodology. The expert way of making incident scene decisions is cue-based. Therefore, this unit presents incident information in the form of cues that should trigger conclusions or actions to take or avoid. Throughout the unit, you will recognize that Naturalistic Decision-making is the most effective for the incident scene.

WHAT IS THE BRIEF INITIAL REPORT?

All departments should have a standard format for the Brief Initial Report (BIR). The standard format helps ensure that critical information is not missed. A good BIR provides necessary and specific information about incident conditions and actions. It provides other responders with sufficient information to allow them to prepare themselves for specific conditions.

The other responders can begin to pre-think tasks that this incident might require. For example, the tactics used by a truck company at a basement fire are significantly different from those used at a first-floor, second-floor or attic fire. Therefore, the responding truck officer has some incident specifics he or she can focus on, such as the fire location, the types of activities, tools and equipment needed, and priorities. This officer is now in a better position to provide immediate action on arrival.

The minimum information required:

- Description of location. The unit number and on which side the apparatus is parked; who you are, and where you are inside a building; facility or area description; what you are sitting in front of.

- A description of incident conditions. Where the smoke and flames are coming from; what is leaking and how much at a hazardous materials incident; or the number and type of vehicles and discernible injuries at an automobile accident.

- The assignment and location of the first-in company. This information gives the location of your people so others do not accidentally do tasks that cause them harm. It provides an insight into what you believe is the most pressing priority at this moment.

- Assume Command or Transfer Command. This institutes the Incident Command System (ICS) immediately.

- Call for additional resources if needed. If you need resources, do not wait. Every minute you delay in calling is another minute's delay in arrival.

- Assign other responding units. No company or crew should be allowed to go to work at the incident without receiving a tactic or task to achieve.

The BIR used in this course has the following format:

Engine _____ arrived at (address), building description, Side _____ of building. Describe incident conditions, e.g., fire and smoke conditions and apparent location. Tell what tactical operation your crew is doing. Assume and identify Command. Call for additional resources, if needed. Assign other responding companies.

Progress Reports

A fire department's communications guidelines should include communications necessary to gather and analyze information to plan, issue orders and supervise operations. For example, a tactical-level officer should communicate the following:

- assignment completed;
- additional resources required;
- unable to complete the assignment;
- special information;
- Personnel Accountability Report (PAR); and
- operational location.

It is important for the Incident Commander (IC) to understand what is happening at an incident scene. Once orders are given to Company Officers (COs), Group/Division Supervisors or Branch Directors, feedback is critical to that understanding. The items listed above allow the IC to understand effectively to what point the various operations have progressed. Through these reports, the IC can track what has been done or completed, what additional resources will be needed for any given assignment, when tactics have to be changed or modified to overcome an impossible task, and what special factors — safety and otherwise — need to be involved in the assignments.

Progress reports are essential to incident management. They allow for effective decision-making and assist in prioritizing the commitment of resources. They also allow for effective refinement and revision of the action plan. To be effective, progress reports need to be timely, complete and concise.

Progress reports should detail briefly where and what actions have been completed and where and what actions are being undertaken. For example, a Vent Group Supervisor directed to do vertical and horizontal ventilation may provide a progress report as follows:

- Vertical ventilation will be completed in about five minutes.

- Horizontal ventilation of the fire floor is completed.

- Ventilation of the floor above is just beginning.

Progress reports will occur with greater frequency in the early stages of an incident — typically every five to 15 minutes — or as major parts of the job are completed. An IC or Operations Section Chief (OSC) must request progress reports from subordinate personnel on a periodic basis when these reports are not given by those personnel. Some departments have the dispatch center announce time on location every 15 minutes to assist the IC with time-tracking and to act as a mind-jogger for the progress reports. It is important to ensure that if time-tracking is done, emergency communication procedures are not overridden by these reports.

In catastrophic events using large numbers of resources and a large ICS organization, it is critical that the progress of operations be conveyed to all General Staff functions on a timely basis. Branch Directors must query their subordinate Group and Division Supervisors frequently as to the state of their operations. This information must be transmitted to the OSC and upward to the IC.

Without the progress report information, the IC as well as Operations and Planning will find their information processing ability lessened. Often they will initiate or recommend actions that are unneeded as well as untimely for the situation.

OVERVIEW OF INCIDENT SCENE DECISION-MAKING

Two primary methods are used by incident scene decision-makers to reach conclusions, determine results and institute actions: the classical method and the Naturalistic Decision-making method.

The Classical Method

The classical method is a time-consuming process where the decision-maker:

- gathers information;
- analyzes the information;
- determines the problems that are present and selects and prioritizes them in order of importance;
- determines and prioritizes the possible solutions;
- selects tactics from one or more possible options; and
- issues directives to have the tactics implemented.

The use of this system, also called the Command Sequence, can develop into a habit. When this happens, the Command Officer will tend to use the technique under unfamiliar emergency conditions, thus structuring the decision-making process and reducing stress. Using the Command Sequence also helps the Command Officer stay proactive.

Decision-makers need the classical method when they are in the training mode. In the training mode, they will be taught to look for cues, draw conclusions, consider results, and take action for an incident type not previously learned, or learned incorrectly. Whether the cues, conclusions, results and actions are learned must be tested in an application format, such as a simulation. This training must be from an expert in the incident type: for example, an urban or city fire officer learning wildland firefighting from a wildland expert.

The classical process is used for evaluating and planning when time is not a factor.

The decision-makers need the classical method when they are evaluating and comparing the critical cues used, conclusions and results determined, and actions taken by other decision-makers. This form of training typically involves case studies. Here the student uses a case study to examine the obvious and subtle cue differences. The examination provides optional conclusions, results and action sets based on those differences. By using a case study and the classical method, students are able to evaluate whether or not the cues match the conclusions and actions of the decision-maker at the actual scene. If they do not, then specific actions to avoid also may be learned.

In addition, the classical method can be used at an actual incident scene where there has been little or no previous experience or training with the specific incident type. There also may be little or no experience or training with the variables that are present at the incident. The decision-maker must formulate a basic plan before directing tactical actions. A process that does not include an evaluation of the incident information, risk-benefit analysis, and appropriate strategies and tactics is not a plan. It is a design for disaster.

Base the plan on incident information (critical cues), real problems, and appropriate broad solutions (strategies). Choose the best solutions (tactics) from several options.

The Naturalistic Method

The Naturalistic Decision-making method is a more rapid and intuitive process in which the decision-maker:

- looks for certain critical cues (visual, verbal, touch, smell);
- relates those cues to previous similar situations (from experience or training);
- recalls the previous conclusions, results and actions that most fit the new situation; and
- issues directives to have the tactics implemented.

It is obvious that basing decisions on the understanding gained from previous experience can produce results much faster than following a step-by-step classical process.

The more experience the fire officer has on similar types of incidents, the greater that person's ability will be to read the subtle differences at the incident, draw refined conclusions, and direct the most appropriate actions to provide a solution.

Use Naturalistic Decision-making when the decision-maker has adequate experience or training of the incident type or the variables within the incident type. The Naturalistic Decision-making method is almost an instant recall of previously learned conclusions, results and actions. It includes the interrelationships of specific information with conclusions, results and actions based on whether or not they worked before. Therefore, it provides a direct, lightning-fast transition from what you see, hear, feel and smell to what you conclude and what you do.

Time-Pressure Nature of Decision-making

Because of the time-pressure nature of emergency-scene decision-making, the choice between Naturalistic Decision-making and classical will not be conscious. The decision-maker's brain will attempt the Naturalistic Decision-making method first. This is the way the brain operates, even though it is not apparent to the person.

The decision-maker must recognize when he or she possesses insufficient information to use this method. Some cues for this recognition:

- It is obvious to the decision-maker that there has been little or no experience or training on the specific incident type.
- The decision-maker recognizes that the incident cues are very unfamiliar and do not immediately result in appropriate action decisions.
- The decision-maker feels lost or overwhelmed, cannot think, or is in a panic. In these cases, the classical method is the appropriate response.

This is an emotional response to the inability of the brain to find an answer or solution. By recognizing these emotional response cues, the decision-maker can recognize that it is time to convert to the classical method. If this conversion is not done, the decision-maker often is left with what has been called "brain-lock," panic, or "wish the chief was here right now."

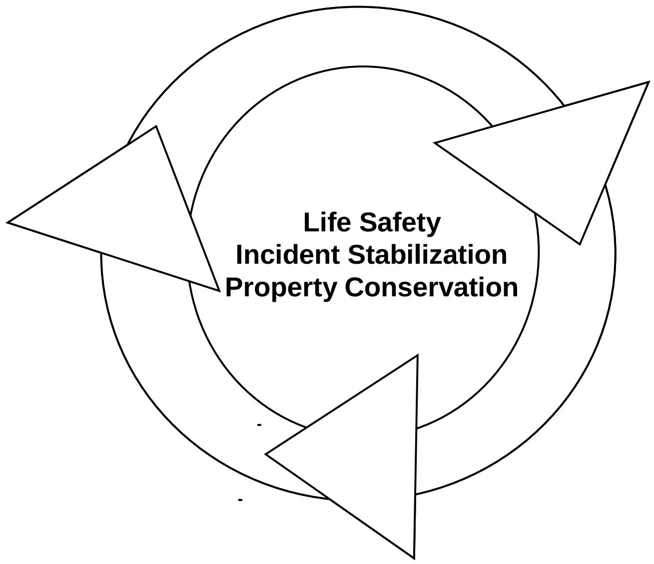
If Naturalistic Decision-making was used on the incident scene, the decision-maker uses the classical method to evaluate actions to ensure that what is being done is achieving the desired result. This is continuing size-up.

Remember that the classical method is primarily for situations where you have little or no experience with the incident type or are in the training mode.

THE CLASSICAL THOUGHT PROCESS — THE COMMAND SEQUENCE

The following discussion of the Command Sequence is an overview. If you need a course with an in-depth explanation and reinforcement in the form of activities, take the 12-hour "Managing Company Tactical Operations: Decisionmaking" course offered by the National Fire Academy (NFA) and available through your state training agency.

The Command Sequence has three action steps, each with a specific result.

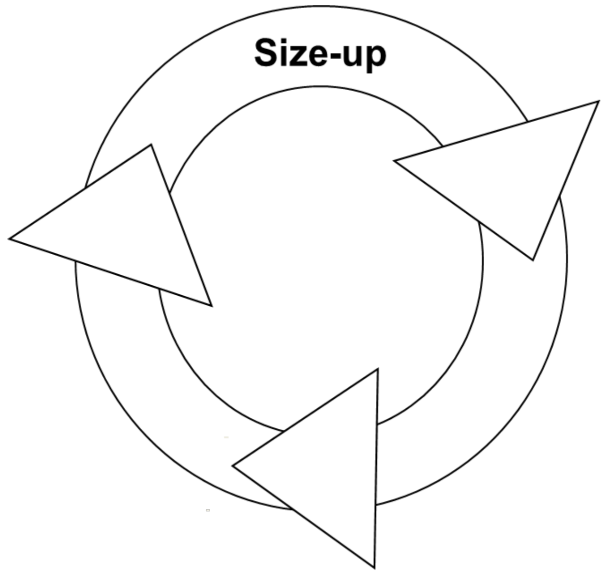


The Command Sequence emanates from the mission of the fire department. Incident priorities are the mission statements. The incident priorities are 1) life safety, 2) incident stabilization, and 3) property conservation. These describe why a fire department exists. Every action taken by the fire department must address one or more of these priorities.

The three action steps and specified results of the Command Sequence are:

Action	**Result**
Size-up	Problem Identification
Objectives, Strategy and Tactics	Action Plan
Implementing the Action Plan	Tasks

Size-up



Size-up is the process of gathering and analyzing incident information that has an impact on decision-making. We call this type of information critical cues. Size-up leads to the identification of the problems at an incident.

Knowing where to look for these critical cues enhances the ability to identify the problems at the incident. The difficulty is gaining the knowledge and experience to know where to look and what to look for.

Size-up Factors to Consider

Various authors use different elements to delineate the factors that affect decision-making. One technique uses 13 points and has the acronym, **WALLACE WAS HOT**:

Water
Area
Life
Location/Extent
Apparatus/Personnel
Construction
Exposures

Weather
Auxiliary appliances*
Special hazards

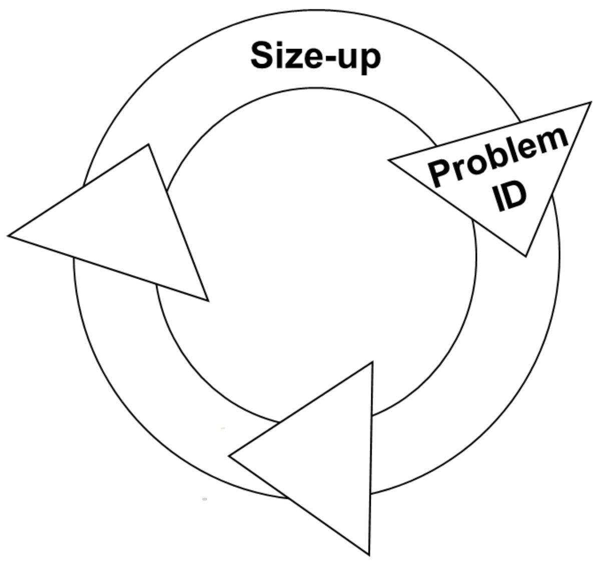
Height
Occupancy
Time

*Standpipes, sprinklers, heat detectors, etc.

These 13 points are specific enough to encompass emergency incident scene factors, yet broad enough to fit almost any type of incident. The acronym, once learned, will help you recall these topics. However, most people find that it is impossible to process this many items while en route to or standing in front of an incident scene. The most appropriate use of **WALLACE WAS HOT** is for training, especially training that involves learning the critical cues for handling a specific incident type, and in prefire planning (with the exception of location and extent, time, and weather).

You must commit these factors to memory. The brain will use this information as you attempt to gather critical cues. Having these factors in long-term memory allows the brain to access the data.

Problem Identification

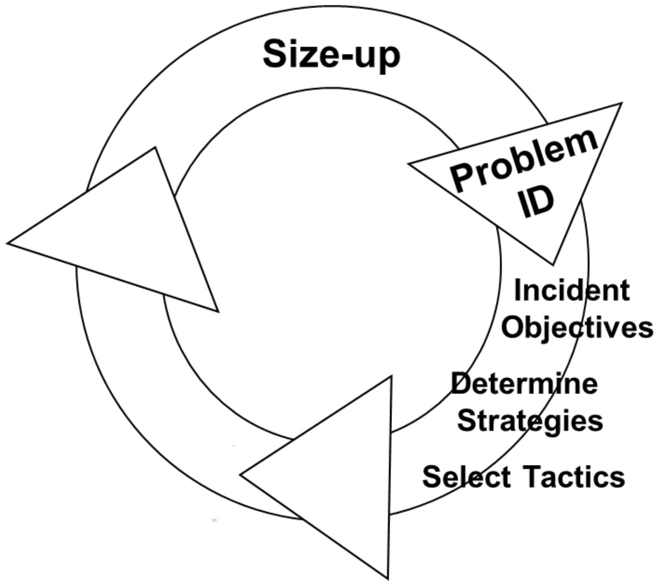


Problem identification is the goal of size-up. Mental analysis and comparison of incident cues is the basis for problem identification.

Once the problems of an incident are identified, the correct solutions may be determined and applied. Now the planning process can begin.

Not all problems are visible to the naked eye. Use your experience to “see” those that are not visible.

Establish Objectives and Determine Strategy



Incident Objectives are statements of guidance and direction necessary for the selection of appropriate strategy(s) and the tactical direction of resources. Incident Objectives are based on realistic expectations of what can be accomplished when all allocated resources have been deployed effectively. Incident Objectives must be specific, measurable, achievable, relevant and time sensitive (SMART).

Incident Objectives for a simple dwelling fire could be:

1. Remove/Protect all occupants from fire, smoke and toxic gases.

2. Keep fire from spreading and put it out.

3. Remove smoke and toxic gases from the structure.

4. Care for any injured civilians or firefighters.

Strategy is the overall plan that will be used to control the incident. Strategy delineates the broad goals, defines "**what**" must be done to provide a solution to the problems, and is the basis for action planning.

Strategy gives direction to get you from where you are to where you want to be. Strategy may have multiple components to gain control of an incident. Strategy evolves directly from the Incident Objectives, and is the beginning of the solution to those problems. Strategy will have several components to gain control of an incident.

Generally, Command Officers use Lloyd Layman's seven factors to provide a basis for the development of strategy for structure fires:

Rescue

Exposure

Confinement

Extinguishment

Overhaul

Ventilation

Salvage

Remember these factors by using the acronym **RECEO VS**. Typically, ventilation supports one or more of the other strategies.

A well-defined strategy gives incident personnel a clear description of the IC's plan and helps accomplish it. The IC must determine strategy before he or she develops an action plan. Having a strategy indicates that critical cues have been gathered and assessed and problems have been identified. The IC also has completed an evaluation of resource requirements and availability and has set priorities. Planning has begun.

Selecting Tactics

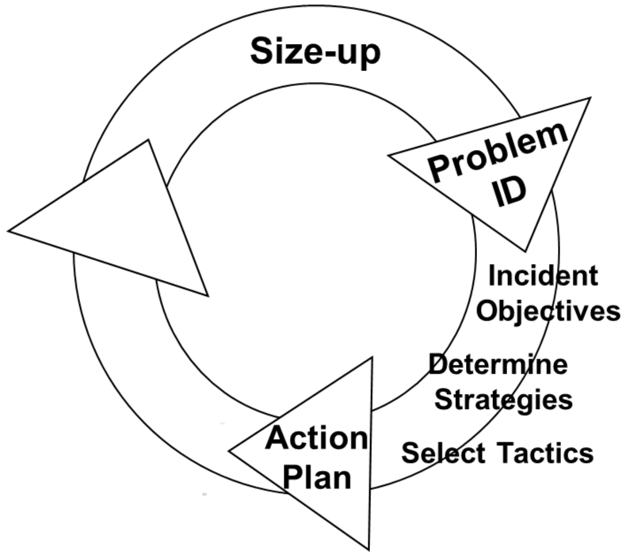
Tactics are the operations that must be completed successfully to accomplish the strategy. Examples of selected tactics:

- confine fire to room of origin (confinement strategy);
- conduct a primary search (rescue strategy);
- protect the stairway (rescue strategy);
- provide horizontal ventilation (rescue and confinement strategies); and
- check for extension (confinement strategy).

Tactics based on the strategies will guide the operational performance required of the companies or crews.

Tactics are the "how" of the solutions to the problems. The IC prioritizes the tactical order of activities. The order is dependent on the priorities of the strategies. Tactics are measurable and specific and can be completed within a designated timeframe.

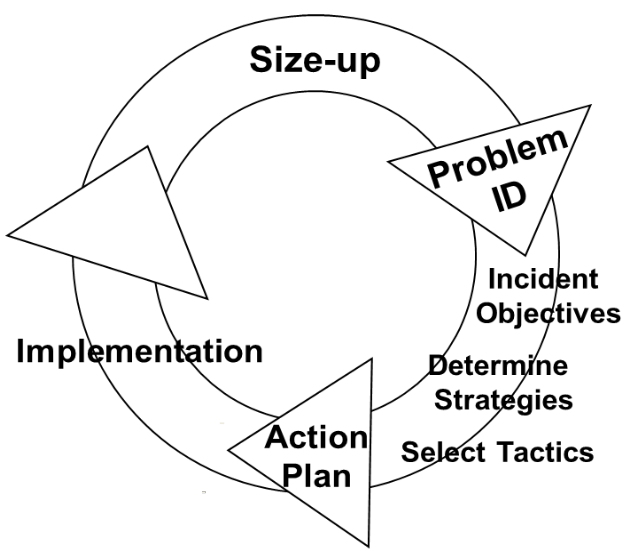
The Incident Action Plan



The determination of strategies and the selection of tactics is the second action step and the first part of the action plan. Strategy describes the "what" of incident solutions. Tactics define "how" the strategies will be achieved.

The action plan, often called an Incident Action Plan (IAP), is the result of having done the strategies and tactics part of the Command Sequence. The IAP delineates the "who, where and when" of the solution.

Implementation



Resources need to know their part of the plan. Directives are issued to the resources delineating their "tactical operation," the "where," and the "when."

IAPs are not necessarily completed before orders are given; however, the IC must be sure that the actions ordered are not "knee-jerk" reactions, but rather part of a good plan.

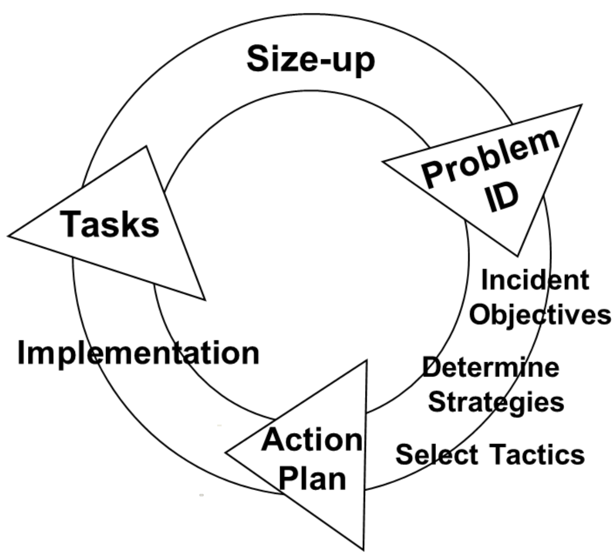
Directives define tactics that must be completed to achieve the IAP strategies.

The IAP also must define the ICS organizational structure for the operating forces. Adequate resources must be assigned for tactics to be successful. A Communication Plan defines the operational channels for the incident. For normal incidents, most departments use a pre-established channel or channel set, and the Communications Plan is a habit. However, when incidents evolve into major situations, the Communication Plan may need modification. A Medical Plan also must be part of the IAP, explaining how emergency medical care will be provided to care for injured response personnel.

Effectiveness of the IAP must be established. Additional information must be gathered and analyzed. Modification or updating may be done to improve the effectiveness of the IAP. Ongoing progress reports from subordinates allow the IC to modify the action IAP effectively. This is part of the continuing size-up.

Tasks

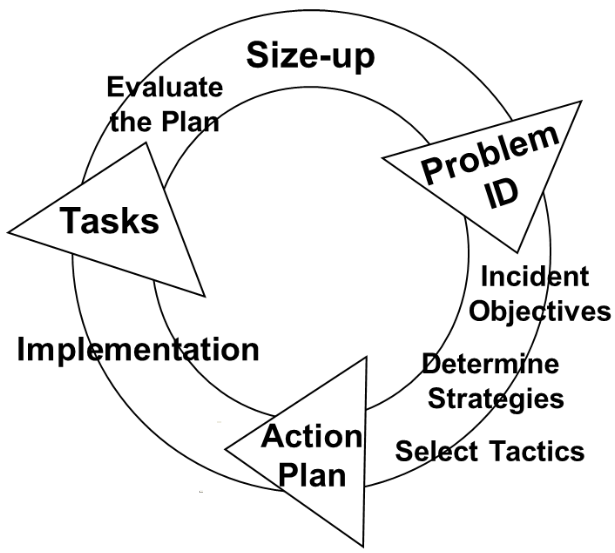
Performing the tasks required for tactical operations is the third outcome. Crews perform specially learned manual tasks that, when completed, achieve or help to achieve a tactic. Performance of tactical operations cycles back into the first action step: size-up.



It is absolutely critical that the IC have a rational plan of initial action before starting tactical operations.

Going through the Command Sequence process helps to ensure that critical areas are not overlooked. The process makes you think before you act. It helps keep the IC in a proactive mode and gets him or her ahead of the time curve. The Command Sequence helps to ensure that critical cues are not overlooked. It can be used at any type of unfamiliar incident because it provides a logical thought process to follow.

The Command Sequence is a continuous process that starts with the first-in resource and doesn't end until the last resource leaves the scene. After the initial size-up to tasks steps have been done by the IC, the process starts over again. However, it now starts with a re-evaluation of what the IC has already implemented to see if any of the incident dynamics have changed. Then, the IC is back to a second time through the Command Sequence starting with size-up.



SUMMARY

Command presence is a vital part of the responsibilities of a Command Officer. The Command Officer must possess effective personal communications skills to be effective at an emergency incident. Unity of Command is a critical concept that, when applied to emergency incidents, helps to prevent confusion. An effective BIR is required to prepare other arriving officers for incident conditions. A Transfer-of-Command methodology is a requirement for incident scene continuity and safety. When the first-in officer is personally involved in a task, he or she should transfer Command.

There are two types of incident scene decision-making — classical and Naturalistic Decision-making. Command Officers must understand when each is the preferred method.

UNIT 4: PREINCIDENT PREPARATION

LEARNING OUTCOME

Specify and incorporate critical preplan information into effective firefighting strategies and tactics. They will clarify resource capabilities and limitations.

OBJECTIVES

The students will:

1. *Given a fire flow calculation form, determine the required fire flow for a structure.*

2. *Assess a department's current resource capability.*

3. *Describe proper methods for incident scene communications.*

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FIRE FLOW

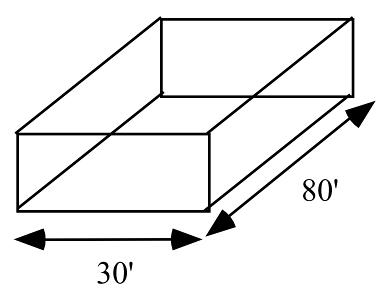
Fire flow is the amount of water in gallons per minute (gpm) needed to fight and extinguish a fire effectively. The Incident Commander (IC) must be able to estimate fire flow quickly in order to evaluate resource requirements properly and make tactical decisions on the fireground.

Fire Flow — Basic Formula

The basic formula should be used as a quick reference and estimator at incident scenes. This method allows the user to do as few calculations as possible under stressful emergency conditions. It also may be used during prefire planning sessions for estimating required fire flow for target structures. The formula is for **aggressive interior fire attack.**

$$\textbf{gpm} = \frac{\textbf{Length x Width}}{\textbf{3}}$$

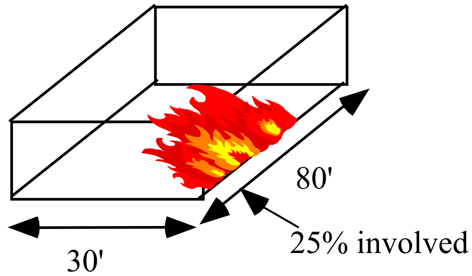
1. Estimate the length and width measurements of the structure, rounding each dimension to the nearest 10 feet.



2. Multiply the length by the width and divide by 3. This is the Needed Fire Flow (NFF) required for 100 percent involvement on one floor.

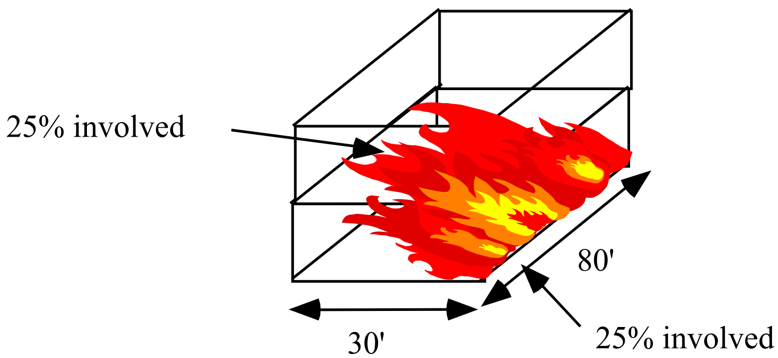
$$\frac{\mathbf{30 \ x \ 80}}{\mathbf{3}} = \mathbf{800\ gpm}$$

3. If there is less than 100 percent involvement on one floor, reduce the NFF proportionally.



gpm = 800 gpm x 0.25 = 200 gpm

4. If more than one floor is well involved, increase the NFF accordingly.



gpm = 200 gpm x 2 = 400 gpm

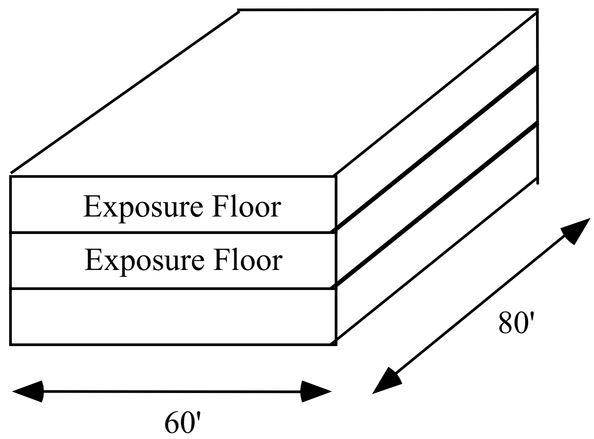
Keep in mind that other variables affect fire flow requirements. These include fire load, concealed spaces, construction, configuration, etc. Experience must play a role in the calculation, regardless of the formula used.

Fire Flow — Prefire Planning Formula

During prefire planning sessions, considerably more time is available to do additional calculations. The following formula is a suggested method for determining the NFF for prefire plans.

$$\textbf{gpm} = \frac{\textbf{L x W}}{\textbf{3}} \textbf{ x \% Involvement + Exposure Charge}$$

1. **Interior exposures** — To calculate the exposure charge, add 25 percent of the 100 percent involvement figure for each floor above the fire floor, but for no more than five floors.



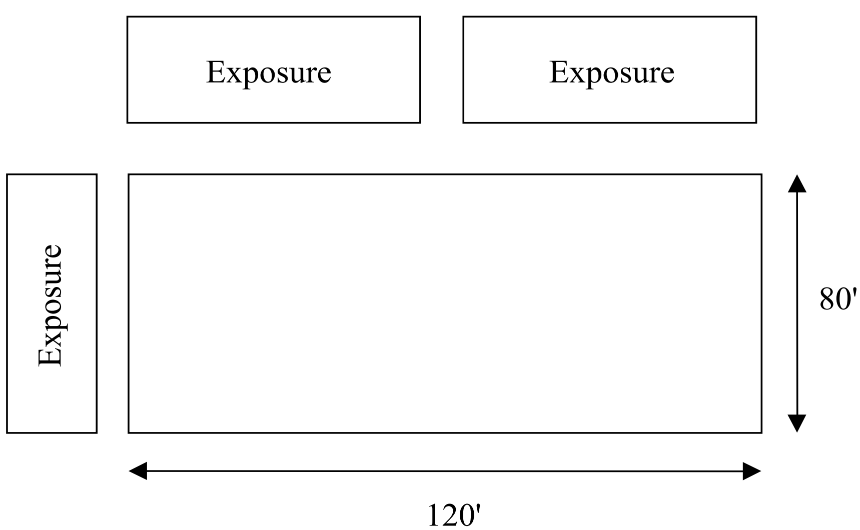
$$\textbf{gpm} = \frac{\mathbf{60 \times 80}}{\mathbf{3}} + \left(\frac{\mathbf{60 \times 80}}{\mathbf{3}} \times \mathbf{0.50}\right)$$

$$\textbf{gpm} = \mathbf{1{,}600 + (1{,}600 \times 0.50)}$$

$$\textbf{gpm} = \mathbf{1{,}600 + 800}$$

$$\textbf{gpm} = \mathbf{2{,}400}\ \textbf{gpm}$$

2. **Exterior exposures** — To calculate the exposure charge, add 25 percent of the 100 percent involvement figure for **each side of the fire building that has an exposure facing it.**



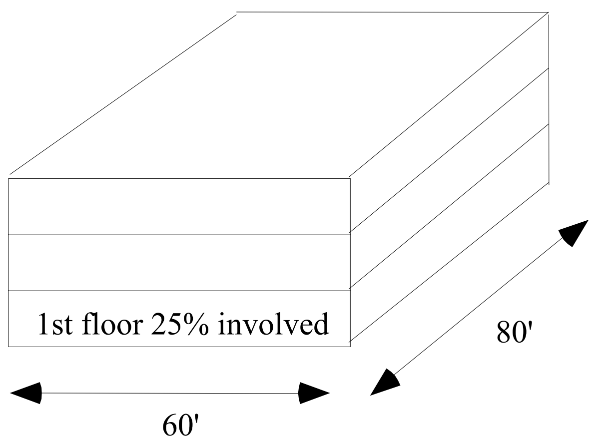
$$\text{gpm} = \frac{60 \times 80}{3} + \left(\frac{60 \times 80}{3} \times 0.50\right)$$

$$\text{gpm} = 3{,}200 + (3{,}200 \times 0.50)$$

$$\text{gpm} = 3{,}200 + 1{,}600$$

$$\text{gpm} = 4{,}800 \text{ gpm}$$

3. **Level of Involvement** — Once on the scene at the fire building when there is actually a fire, estimate the percent involvement of the fire floor, then multiply the prefire calculation for 100 percent fire flow by the appropriate decimal value to determine the flow at the lesser percentage of involvement.



$$\text{gpm} = \frac{60 \times 80}{3} + \left(\frac{60 \times 80}{3} \times 0.50\right)$$

$$\text{gpm} = 1{,}600 + (1{,}600 \times 0.50)$$

$$\text{gpm} = 1{,}600 \text{ gpm} \times 25\% \text{ involvement of one floor} = 400 \text{ gpm}$$

$$\text{gpm} = 400 + 800$$

$$\text{gpm} = 1{,}200 \text{ gpm}$$

It is important to note that the 100 percent involvement figure is purely theoretical, as are the percentage values above 50 percent. The formula supplies approximate flows for aggressive interior fire attack on:

- small and moderate-size buildings; and/or
- large structures with limited involvement.

Interior fire attack normally is not made on structures with high percentages of involvement. Possible exceptions are situations where the probability of civilian casualties is great. Here, the officer should take reasonable risk for the benefit to be gained, without sacrificing firefighters to save obviously lost civilian lives. The officer should place resources in areas of greatest safety while doing such high-risk attack (e.g., stay in unburned areas, operate from doorways or window openings, use hoselines that deliver large amounts of water and have a long reach, and stay away from the probable collapse areas). **Note:** Surround-and-drown tactics require large fire flows that are not addressed by the above formula.

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Activity 4.1

Fire Flow Calculations

Purpose

You will practice calculating fire flows using structures described by the instructor.

Directions

The instructor will describe several structures. For each of these target hazards, use a blank copy of the Fire Flow Worksheet on the following page to estimate the total theoretical fire flow at different levels of involvement.

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Activity 4.1 (cont'd)

Fire Flow Worksheet for Prefire Planning

Theoretical Fire Flow	=	Base Fire Flow	x % Involvement +	Exterior Exposure Charge	+ Interior Exposure Charge

Base Fire Flow Calculation:

$$\frac{\text{Length x Width}}{3} = \text{gpm Base Fire Flow}$$

$$\frac{\_\_\_ \text{ x } \_\_\_}{3} = \_\_\_\_\_\_\_\_\_ \text{ gpm Base Fire Flow}$$

Exterior Exposure Protection Calculation:

Number of sides with exposures x 0.25 = Exterior Exposure Charge
_____ x 0.25 = _____ Exterior Exposure Charge

Exposure Charge x Base Fire Flow = flow required
_____ x _____ gpm = _____ gpm required for exterior exposures

Interior Exposure Protection Calculation:

Number of floors exposed (maximum of 5) x 0.25 = Interior Exposure Charge
_____ x 0.25 = _____ Interior Exposure Charge

Exposure Charge x Base Fire Flow = flow required
_____ x _____ gpm = _____ gpm required for exterior exposures

Total Theoretical Fire Flow Calculation:

Theoretical Fire Flow	=	Base Fire Flow	x % Involvement +	Exterior Exposure Charge	+ Interior Exposure Charge

_____ + _____ + _____ = _____ gpm Theoretical Fire Flow

%				100%
gpm				

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Activity 4.1 (cont'd)

Fire Flow Worksheet for Prefire Planning

Theoretical Fire Flow	=	Base Fire Flow	x % Involvement +	Exterior Exposure Charge	+ Interior Exposure Charge

Base Fire Flow Calculation:

$$\frac{\text{Length x Width}}{3} = \text{gpm Base Fire Flow}$$

$$\frac{\quad x \quad}{3} = \_\_\_\_\_\_\_\_\ \text{gpm Base Fire Flow}$$

Exterior Exposure Protection Calculation:

Number of sides with exposures x 0.25 = Exterior Exposure Charge
_____ x 0.25 = _____ Exterior Exposure Charge

Exposure Charge x Base Fire Flow = flow required
_____ x _____ gpm = _____ gpm required for exterior exposures

Interior Exposure Protection Calculation:

Number of floors exposed (maximum of 5) x 0.25 = Interior Exposure Charge
_____ x 0.25 = _____ Interior Exposure Charge

Exposure Charge x Base Fire Flow = flow required
_____ x _____ gpm = _____ gpm required for exterior exposures

Total Theoretical Fire Flow Calculation:

Theoretical Fire Flow	=	Base Fire Flow	x % Involvement +	Exterior Exposure Charge	+ Interior Exposure Charge

_____ + _____ + _____ = _____ gpm Theoretical Fire Flow

%				100%
gpm				

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RESOURCE CAPABILITY

Hoseline/Personnel Ratio

Hoseline Size	GPM	Personnel Needed
1 1/2	100	2
1 3/4	180	2
1 3/4	240	3
2 1/2	250	4+

PREFIRE PLANNING

Who Does Prefire Planning?

- Fire departments that want to operate in a proactive manner on the fireground.
- Chief Officers who lead professional fire departments (career or volunteer).
- Company Officers (COs) and crew leaders who understand that prefire planning is a mark of the professional fire officer (career or volunteer).

What is Prefire Planning?

Prefire planning involves the gathering and analysis of information about buildings, occupancies, areas, hazards, and built-in fire protection systems. It is used to help develop the action plan for specific structures.

Preincident preparation includes any useful information that may affect decisions or actions taken by fire department personnel during an emergency incident.

Purpose of Preincident Preparation

Prefire planning helps establish effective fireground management. It assists in determining strategy and in selecting proper tactics. It promotes safety and coordination. It is used to evaluate required resources and to determine available resources.

Preincident preparation also helps to determine the mode of operation — offensive/sufficient resources or defensive/insufficient resources. It is used to evaluate the fire load, an indicator of fire intensity. It provides the basis for a structural evaluation, an indicator of fire spread. It contributes to firefighter safety.

What Buildings Require a Prefire Plan?

The primary buildings requiring prefire plans are the community's target hazards. These are buildings or other facilities that have a large casualty risk, as well as buildings or facilities that would cause a large monetary/economic impact if lost in a fire. Include all the unique risks or hazards in your community. Secondary areas of concern are the other structures that should be prioritized by complexity and economic value.

Consider preplanning simple and familiar structures as a last order of business. Preplanning dwellings or other simple structures on an informal basis encourages critical thought regarding resource capability, strategy and tactics.

Who Uses Prefire Plans?

Prefire plans can be used for many different purposes by many different types of personnel:

- First-in COs and Chief Officers who need good information, not guesses, to provide for the safety of personnel.
- Officers who recognize that they need "must-know" information for good decision-making.
- Officers who want to assign their limited initial attack resources more effectively.
- Later arriving Chief Officers who evaluate present strategy and tactics and make decisions on extended attack operations.
- Training Officers during strategy and tactics sessions with department personnel.

Common Categories of Preincident Preparation

Preincident preparation should address many of the same size-up factors you learned under the acronym **WALLACE WAS HOT** in Unit 3: Decision-making Review. In addition, special or unique hazards must be considered.

Water	**W**eather*	**H**eight
Area	**A**uxiliary appliances**	**O**ccupancy
Life	- Sprinklers	**T**ime*
Location/Extent*	- Standpipes, etc.	
Apparatus/Personnel	**S**pecial hazards	
Construction		
Exposures		

*Cannot be addressed until incident occurs.
**Sprinklers, standpipes, etc.

QUICK ACCESS PREFIRE PLAN

A Quick Access Prefire Plan (QAP) quickly provides first-in officers with the data they need to make better decisions at a specific incident scene. Ideally, the QAP is presented on one to two pages that can be read and absorbed in 30 to 60 seconds. Included are incident scene safety data, a plot plan/floor plan, and information about many of the size-up factors discussed previously. A sample format is shown on the following pages.

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Quick Access Prefire Plan

Building Address:

Building Description:

Roof Construction:

Floor Construction:

Occupancy Type:	**Initial Resources Required:**

Hazards to Personnel:

Location of Water Supply:	**Available Flow:**

	Estimated Fire Flow*			
Level of Involvement	*%*	*%*	*%*	*100%*
Estimated Fire Flow				

**Fire flow based on*

Fire Behavior Prediction:

Predicted Strategies:

Problems Anticipated:

❑ **Standpipe:**	❑ **Sprinklers:**	❑ **Fire Detection:**

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Completing the Quick Access Prefire Plan Form

1. Building Address.

2. Building Description.

   a. Dimensions — length and width.

   b. Number of stories.

   c. Construction type.

      You should know the basic terms used for the types of construction in your building codes (for example, fire-resistive, noncombustible, ordinary (masonry/wood joist), heavy timber, and wood frame). In addition, any special features may be noted in this area (common attic/cockloft, escalator, open stairs, open elevator shafts, etc.).

   d. Roof Construction.

      - Lightweight (wood truss, steel bar-joist).

      - Other than lightweight (beam and rafter, pitched ridgepole and rafter, concrete, etc.).

   e. Floor Construction.

      - Lightweight (wood truss, wood I-beam, steel bar-joist).

      - Other than lightweight (wood joist, steel).

3. Occupancy Type.

   Use a classification found in the life safety code, building code, or local terminology that distinguishes the building's use.

4. Initial Resources Required.

   a. Identify the level of resources responding (number and kind).

   b. Indicate special resources assigned.

5. Hazards to Personnel.

   Based on a walk-through of the building, list the out-of-the-ordinary hazards that could injure responders (for example, pesticide storage, early roof collapse — truss construction, transformer room on first floor, etc.).

6. Location of Water Supply.

   a. Type of water supply (hydrant, pond, etc.).

   b. Location and distance from site.

   c. Special features.

7. Available Flow.

   a. In a hydrant area, this information must be obtained by testing the system or from the local water department.

   b. In nonhydrant areas, the officer must estimate both the short-term (initial) and long-term (sustainable) flow rate.

8. Level of Involvement.

   a. The leftmost column is normally 25 percent, but **no** greater. If 25 percent yields a fire flow greater than your normal first-alarm capability as determined by the Resource Capability Matrix, use a percentage of the 100 percent fire flow that is no greater than the first-alarm capability. This method will tell you on arrival at a serious fire whether or not the first-alarm capability is sufficient.

   b. The center columns are normally 50 percent and 75 percent. However, if the leftmost column is 5 percent, 10 percent or 15 percent, the next two columns would be adjusted to suit your needs.

9. Estimated Fire Flow.

   a. The fire flow formula is used to determine the needed fire flow.

   b. Use the last column to the right in the “Level of Involvement” box to record the 100 percent involvement theoretical fire flow.

   c. Calculate the corresponding flow rates using the appropriate percentages for the level of involvement.

10. Fire Behavior Prediction.

Place in this area a brief description of how quickly the fire is expected to extend and in what direction — horizontally or vertically.

11. Predicted Strategies.

    a. The operable strategies are ventilation, rescue, exposure protection, confinement, salvage and extinguishment.

    b. In this area, predict the strategies that the first-in officer must begin to accomplish for this specific occupancy.

12. Problems Anticipated.

    Based on a walk-through of the building, list in this area out-of-the-ordinary problems that must be addressed for a successful outcome. Examples might include no rear access, concrete roof assembly (no vertical venting), poor water supply, and large storage of flammable liquids.

13. Standpipe.

    a. Check if present.

    b. Note characteristics (dry or wet, fire pump, etc.).

    c. Locate fire department connection on the plot plan.

    d. Note outlet size (1 1/2 or 2 1/2-inch) and locate risers on plot plan/floor plan.

14. Sprinklers.

    a. Check if present.

    b. Locate fire department connection on the plot plan.

    c. Note the area of coverage.

15. Fire Detection.

    a. Check if present.

    b. Locate the annunciator on the plot plan/floor plan.

16. Plot plan/Floor plan.

    a. Streets bordering the occupancy.

    b. Location of the building on the lot in relation to the streets and exposures.

c. Important features.

- Access points.
- Ventilation openings.
- Location of fire detection and suppression systems.
- Location of water supplies.

d. Floor plan of the structure.

- Vertical shafts.
- General interior layout.
- Firewalls.

Quick Access Prefire Plan

Completed Example

Building Address:
5517 Mindy Lane

Building Description:
27' x 40'; two-story, platform wood-frame dwelling with basement

Roof Construction:
Ridgepole and rafter; 1" x 6" sheathing, composition shingles

Floor Construction:
Platform 2" x 10" w/1" x 6" sheathing, hardwood floors

Occupancy Type:
Dwelling

Initial Resources Required:
3E, 1 Truck/Tender, 1 Medic, 1 BC

Hazards to Personnel:
No more than usual for a dwelling

Location of Water Supply:
Nonhydrant area
Pond two miles away

Available Flow:
4,250 gal. on first alarm

	Estimated Fire Flow*			
Level of Involvement	*25%*	*50%*	*75%*	*100%*
Estimated Fire Flow	125	250	375	500

**Fire flow calculated using first floor and second floor as an exposure.*

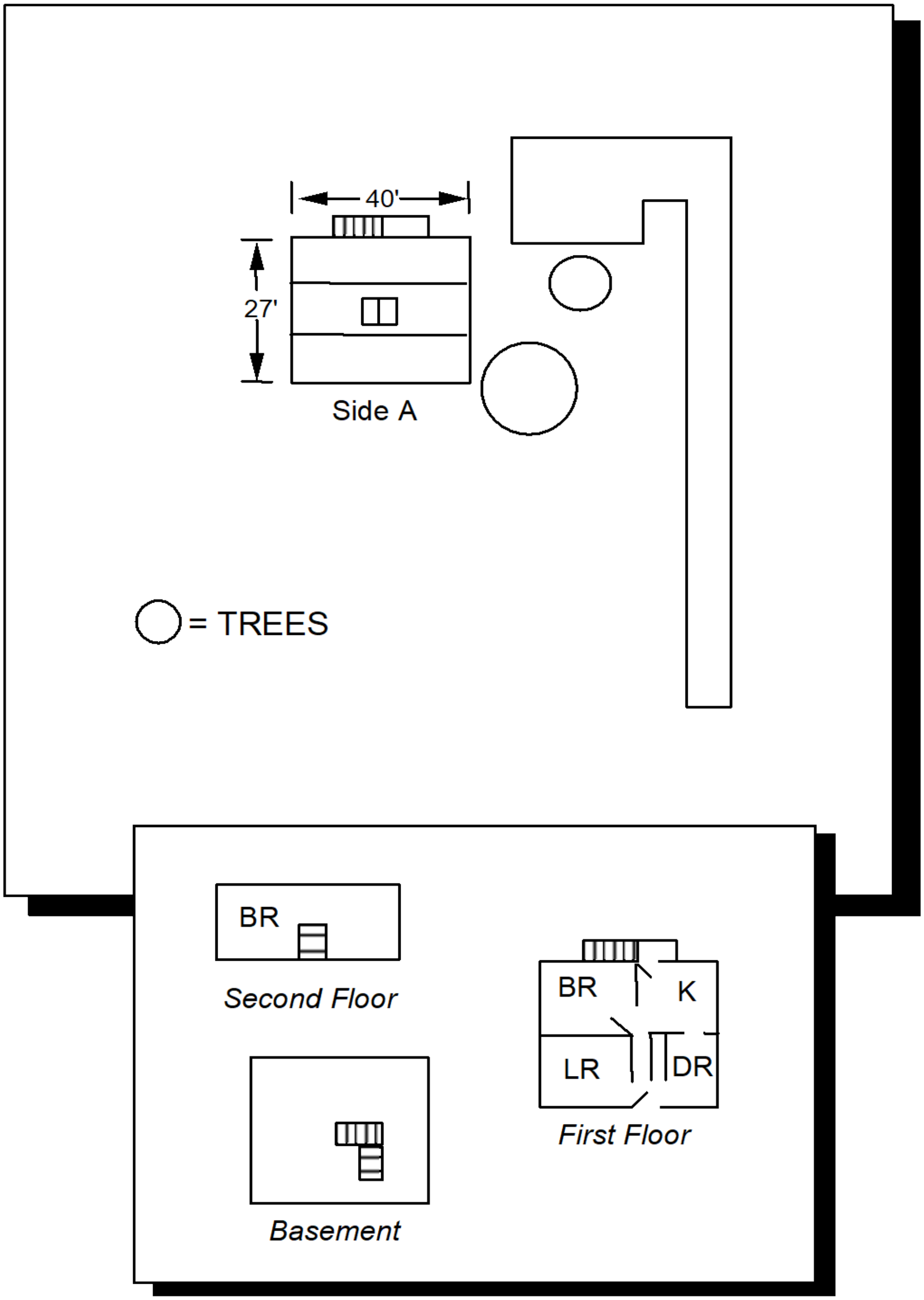
Fire Behavior Prediction:
Fast horizontal and vertical fire spread

Predicted Strategies:
Rescues, confinement, ventilation

Problems Anticipated:
Water supply, access to right side of building

❑ **Standpipe:** *No*	❑ **Sprinklers:** *No*	❑ **Fire Detection:** *No*

Plot Plan/Floor Plan



INCIDENT SCENE COMMUNICATIONS

Brief Initial Report

Proper communications is critical to incident scene management. Although each department has its own systems and protocols, some general principles apply. The following is a sample format for a Brief Initial Report (BIR).

Engine _______ arrived location Side _______ of a (describe building).

Describe the incident conditions, percent involved, and life safety situation.

Describe the action being taken by your crew.

Assume Command.

Assign other units to tactical operations.

Using this format, a completed example is shown below.

Engine 12 arrived location Side A of a 60' x 80', one-story office building.

Have fire and smoke coming from Side C, approximately 25 percent involved, no immediate life hazard.

Engine 12's crew is making an interior attack from Side A and starting primary search.

Captain Engine 12 is Command.

Communications Can Affect the Incident Commander Negatively

The IC must get someone to handle the radio as soon after arrival as possible. The IC must be allowed to concentrate on strategy and tactics — not answer the radio. The portable radio has been a boon to emergency scene communications, but it can spell disaster if the IC is a slave to it.

Tactical Company Officer's Report

When does the CO or other supervisor **need** to be on the radio communicating with his or her boss? There are four times and only four times:

1. When the assignment is completed.

2. When the assignment cannot be completed.

3. When additional resources are required.

4. When an emergency situation must be reported.

Other than these situations, stay off the radio.

Personnel Accountability

Changes in emergency response techniques and advances in the development of protective equipment have changed the way firefighters do their jobs. The expanded scope of firefighting tasks and the increase in the types of emergencies personnel face make it more important than ever to enhance scene safety whenever possible. Flashover and backdraft can trap or injure firefighters; self-contained breathing apparatus (SCBA) can malfunction or run out of air; and firefighters can become disoriented or lost in a maze of rooms or corridors. In these types of situations, firefighters too often die because they are not missed until it is too late.

To address this problem, every fire department must design or adopt an **emergency scene personnel accountability system**. The system can be as simple or as complex as necessary, as long as all personnel are trained in its use and it is implemented at every incident. Without this critical tool, the IC will not know the identity and location of personnel on the incident scene, and it will be impossible to determine the number and identity of trapped or injured firefighters in an emergency.

The need for an accountability procedure has been recognized by the National Fire Protection Association (NFPA). The organization's recommendations can be found in:

1. NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program.*

2. NFPA 1561, *Standard on Emergency Services Incident Management System.*

Once an accountability system is in place, supporting policies must be developed that include how, when and why the system is implemented. The next major step is training. Instruction must be comprehensive and continual; all mutual aid agencies that might be involved should be included. Personnel must be so familiar with the system that it becomes second nature. The system should be used from the start of the incident through demobilization — **on every incident.**

In developing and working with personnel accountability systems, several points should be kept in mind:

- Most importantly, the system must meet jurisdictional needs and reflect local conditions.

- The system must be easy to implement and use under the pressure and confusion of the emergency scene.

- All members must participate and operate under the direction of their supervisors.

- The IC has overall responsibility for personnel safety and must maintain the accountability system throughout the incident.

- Supervisors at all levels are responsible for knowing the location and condition of their personnel at all times.

- The system must work in conjunction with the department's Incident Management System (IMS).

- A procedure must be in place to provide for rapid evacuation of personnel from a hazardous area and for the rescue of personnel.

SUMMARY

Prefire planning is critical for effective emergency operations. Several valuable tools are available to help fire officers gather and calculate prefire planning data:

- **Fire flow formula**, used to estimate water requirements for aggressive interior attack at target buildings;
- **Resource capability**, used to determine the department's delivery capability; and
- **Quick Access Prefire Plan**, used to record and average prefire data for specific structures.

Fire officers should know how to calculate prefire planning data and use this information during emergencies. They also must be comfortable implementing the department's communications systems and protocols at any incident scene.

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APPENDIX

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Water Flow Required in GPM

*Estimate building dimension and correct for percent involvement.

	10	20	30	40	50	60	70	80	90	100
10	33	67	100	133	167	200	233	267	300	333
20	67	133	200	267	333	400	467	533	600	667
30	100	200	300	400	500	600	700	800	900	1,000
40	133	267	400	533	667	800	933	1,067	1,200	1,333
50	167	333	500	667	833	1,000	1,167	1,333	1,500	1,667
60	200	400	600	800	1,000	1,200	1,400	1,600	1,800	2,000
70	233	467	700	933	1,167	1,400	1,633	1,867	2,100	2,333
80	267	533	800	1,067	1,333	1,600	1,867	2,133	2,400	2,667
90	300	600	900	1,200	1,500	1,800	2,100	2,400	2,700	3,000
100	333	667	1,000	1,333	1,667	2,000	2,333	2,667	3,000	3,333
110	367	733	1,100	1,467	1,833	2,200	2,567	2,933	3,300	3,667
120	400	800	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000
130	433	867	1,300	1,733	2,167	2,600	3,033	3,467	3,900	4,333
140	467	933	1,400	1,867	2,333	2,800	3,267	3,733	4,200	4,667
150	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000

Color	1.75" Lines	2.5" Lines	Master Stream	MAX Flow	Engines Capable
	1				120 gpm
	2	1			420 gpm
	3	3			900 gpm
	3	3	1		1,900 gpm
	4	3	2		3,020 gpm
	3	3	4		5,020 gpm

This chart was developed by Assistant Chief Jeffrey Gray, Homer Township Fire Department, Midland, Michigan. This chart has been reprinted in this manual with Chief Gray's permission.

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REDEFINING NEEDED FIRE FLOW

Edward Burns, Assistant Chief (Ret.)
Los Angeles City Fire Department

Burton W. Phelps, Deputy Chief (Ret.)
Anne Arundel County, MD

This article enhances the information provided by Mr. John D. Wiseman, Jr. on *Defining Needed Fire Flow* in the December 1993 issue of *The Voice*. While most of the information in the Wiseman article is accurate, there are specific issues that make the graph and conclusions inaccurate.

The Iowa Formula

This formula was developed by Mr. Keith Royer during World War II at the United States Coast Guard Yard in Baltimore, MD. Mr. Royer was working with Chief Lloyd Layman to develop firefighting techniques for shipboard firefighting for the U.S. Navy. Mr. Royer, after the War, continually proved the accuracy of the formula during his 40-plus years of service at the University of Iowa Fire Extension Services.

To understand fully the concept of (LxWxH)/100; one must explain the operational concepts and how limited water must be delivered to achieve fire control in a short period of time. The concepts are:

- Keeping oxygen from the fire to stabilize and limit BTU production.
- Determine the needed fire flow based on the volume of space in the largest fire area. The water required for the largest space in a structure will be sufficient to handle any of the smaller areas.
- When the space is involved in fire:
    - <u>Do not vent</u> the space that is burning. The formula is based on absorbing the BTUs being produced by converting water to steam, thereby providing an inert, cool atmosphere.
    - Supply the needed fire flow to the incident scene before starting fire attack.
    - Using multiple small lines, choose <u>exterior</u> positions that will allow nozzle patterns to completely cover the involved space.
    - Make <u>small openings</u> for the nozzles, e.g., break a small pane of glass or slightly open a door to keep oxygen input to a minimum.
    - Nozzles are typically placed on a <u>30 degree fog pattern</u> for reach.
    - On a signal, open all nozzles <u>simultaneously</u> for approximately 30 seconds. Then close the nozzles.
    - Vent the space and enter for final extinguishment.

Mr. Royer proved the accuracy of the formula many times over the past 50 years. And we all agree that given the <u>operational concepts,</u> it does work well.

Figure #1 graphically displays the concepts of operation.

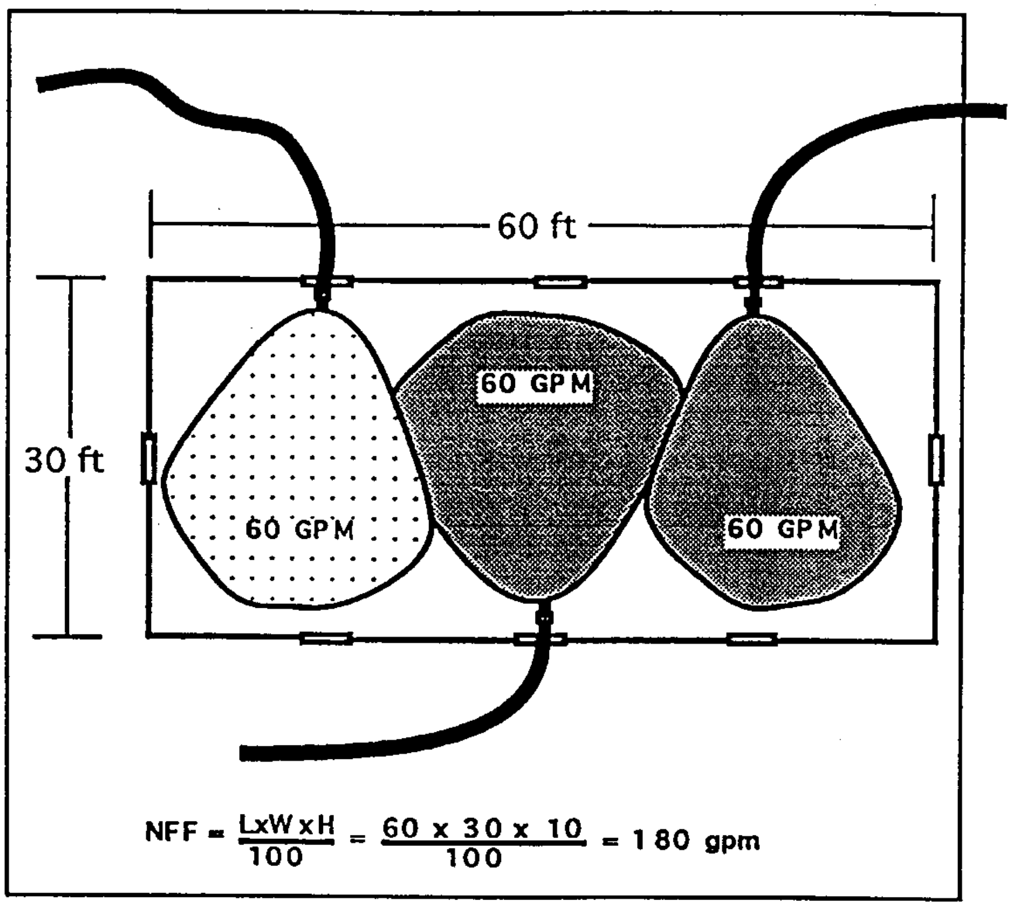


Figure #1

The critical questions that must be answered are:

How many of you fight structure fires this way?

- Do you leave the structure "buttoned-up" until the total Needed Fire Flow is on the fireground?
- Do you use multiple hoselines to deliver a total of 180 GPM and choose two or more distribution points to obtain full, simultaneous coverage of the fire area from the exterior?

If your department fights structure fires this way, then the Iowa formula is made just for you. The conclusion would be to continue to use it. However, for success with the limited fire flow, you must also use the delivery concepts. Any significant openings in the structure, horizontal or vertical, will let steam escape and oxygen to enter thereby increasing BTU production, the fire flow and time required to darken-down the fire.

In addition, a fire area over 10,000 square feet, e.g., 100' x 100' or interior wall configuration, affects our ability to get complete coverage simultaneously. Most fog nozzles on 1-3/4" fire lines have an effective 30 degree fog stream reach of less than 50 feet. Many of us do not have the number of firefighters required to distribute 1,000 GPM to multiple openings through four to six hoselines just after arrival at the scene. Thereby, the 1,000 GPM cap on the effectiveness of the Iowa formula is reasonable.

NFA's Field Formula

In early courses, circa 1979-84, the National Fire Academy used both the ISO Fire Flow Formula and a modification of the Iowa Formula. When the *Preparing for Incident Command (PIC)* course was rewritten, the new NFA Formula was developed.

$$NFF = \frac{L \times W}{3} \times \% \text{ Involvement}$$

The full, or prefire planning, formula is $NFF = \left(\frac{L \times W}{3} + \text{Exposure Charge}\right) \times \% \text{ Involvement}$

The course developers, all experienced incident scene commanders, discussed the practicality of the Iowa formula for normal operations. Normal operations include actions, such as:

- Performing primary search and rescue before people die in heavy smoke conditions. In this instance, often before total extinguishment water is available on-scene, engine company personnel are entering the building with hoselines to push, or keep, the fire away from possible victims. Truck companies are doing horizontal and maybe vertical ventilation to support the primary search effort. The structure's ability to contain steam has been violated. Extinguishment will now take greater fire flows.

- Fire attack is started by the first arriving engine company and is reinforced with additional fire attack and back-up lines as resources arrive on-scene. Personnel are venting as they go, and the roof may be ventilated to remove the smoke and toxic gases to the outside.

Yes, the NFA Formula provides more water than is needed for extinguishment then when we leave the building buttoned-up. However, if we really take multiple 1-1/2" or 1-3/4" hoselines into a building for attack and back-up, then we must supply the water that will allow all of them to flow simultaneously; to do otherwise is courting disaster. The NFA Formula provides a fire flow safety factor when compared to the Iowa Formula. This is very desirable when crews are operating on the interior.

A study of the American Fire Service will show that better than 99% of us do aggressive interior fire attack as discussed above. We are taught not to attack a fire from a window or door position that will push the fire through the structure. We are taught to go inside and push the fire from the unburned back to the burned and out of the structure.

The *PIC* course developers designed several fire scene plot/floor plans showing building size and openings with varying percents of involvement. These were duplicated during one of the development meetings and distributed to a number of the NFA students who were on campus. Each student was directed to show hoseline placement and size on the plot/floor plans indicating how their department would control the fire from a hoseline perspective.

These plot/floor plans were collected and analyzed. For each scenario, when the floor area was divided by the needed fire flows indicated by the students, the result averaged approximately 3. This resulted in the linear equation $NFF = (LxW)/3$.

What were the parameters:

- All the fire scenarios were designed to be aggressive interior firefighting operations. Fire involvement percentages above 50% are not normally interior fire attack situations.

- All operations would be as they are in the real structural firefighting world. We start with a single interior attack line and increase the number of lines as needed and as resources arrive on-scene.

- The necessary primary search and ventilation would be achieved simultaneously with fire flow operations.

The NFA courses are very clear in stating that (1) the formula is designed for use in aggressive interior fire operations, (2) the formula becomes increasingly inaccurate above 50% involvement or when resultant flows are above 1,000 GPM, (3) it is not designed for defensive, masterstream operations, and (4) there are other variables that affect needed fire flow. The formula is based on the largest fire area in a structure, as is the Iowa Formula.

Taking into account the operational concepts and parameters, the NFA Formula is more accurate than the other two for how the American Fire Service delivers water to a real-world structure fire.

Prove it to yourself.

1. Think of a 50' x 60', 1-story, small commercial. The structure is 50% involved.

2. Approximating scale, draw the building on a piece of paper showing a front and back door and some side windows. Example Figure #2.

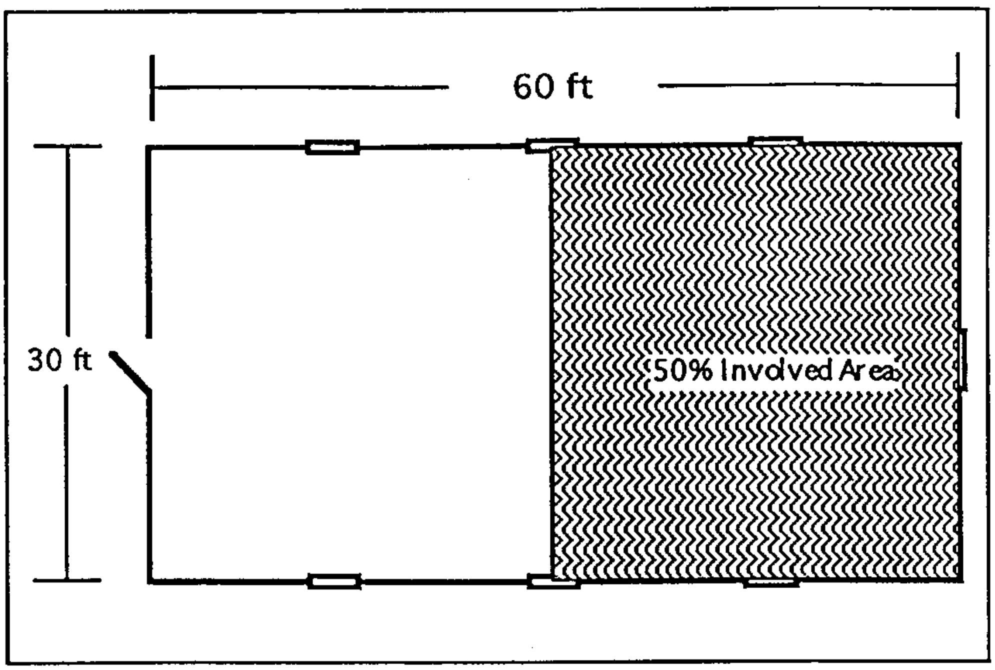


Figure #2

3. Before calculating a fire flow using any formula, determine how many and what size hoselines you would order pulled and charged to attack the fire. The fire just flashed-over and structural integrity is good at this time.

4. Convert the number and size of lines to GPM and add to determine the total fire flow.

5. Now, using both the Iowa Formula and the NFA Formula calculate the needed fire flow.

   Remember, for this example, the percentage of involvement was 50%. Half the involved area translates to half the calculated fire flow from either formula. Which one is closer to the flow that would supply the number of hoselines chosen.

6. Do several more the same way for other fire areas in commercial establishments in your community.

This analysis makes neither formula wrong. It simply states that the formula concepts and parameters must be known to make the correct choice. For our example above, the Iowa formula yields 90 GPM (e.g. 30 GPM through three different nozzles to provide fire area coverage) and the NFA formula yields 300 GPM (two 1-3/4 inch lines or three 1-1/2 inch lines).

The Iowa Formula for our example is correct if you leave the building "buttoned-up", did no search, and applied the water simultaneously for multiple exterior openings that would cover the fire area. However, if you are firefighting the conventional way, the NFA formula is closer to your needs.

In addition, based on the article "*Critical Flow Rate"* by C. Bruce Edwards, Fire Engineering, September 1992, delivering water at a rate greater than the formula minimums extinguishes a fire in much less time. The NFA Formula, by calculating for Fire Department inefficiency, allows greater flow rates and reduced extinguishment time relative to the Iowa Formula.

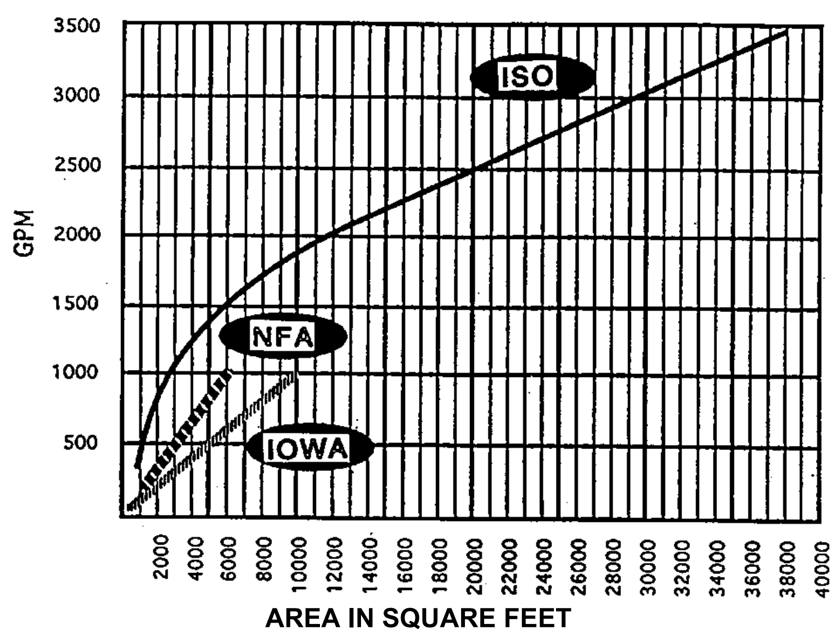
Graph Results

Using Mr. Wiseman's graphical display. We find that the ISO Formula curve remains the same, as does the Iowa Formula curve. Keeping in mind that the ISO and Iowa Formula graphs are not limited by percent of fire involvement.

The NFA Formula curve is changed from the Wiseman example due to the parameter that specifies not greater than a 50% involvement in the fire area. In agreement with Mr. Wiseman, we believe that aggressive interior fire attack has a probable upper limit of 1,000 GPM.

In the graph for the NFA formula, we have plotted the flow based on the maximum 50% involvement for a 6,000 square foot building. However, when a building of 12,000 square feet with 25% involvement is used, the formula will provide a different curve when carried to the maximum of 1,000 GPM. Therefore, the NFA formula may produce an endless number of curves when the two variables percent involvement and/or square foot area are changed.

It is believed that the NFA Formula does provide a reasonable fire flow recommendation for heavy stream attacks when the formula answer is above 1,000 GPM. This belief must be qualified by stating "before too much vertical and horizontal integrity are lost to burn through."



Summary

All three fire flow formulas are correct when used within their individual design parameters.

The ISO Formula was designed for setting insurance rates and rating fire departments. If you are in that business you should use it. It is far too complex to be used at an incident scene and it obviously provides for the greatest fire flows. After all, it is an insurance industry formula.

The Iowa formula was designed for calculating fire flows needed in compartmentalized fires, such as on ships. While the application is transferable to structure fires, it is not the way most of the American Fire Service attacks structure fires. If you attack structure fires by the concepts of the Iowa formula as described earlier, then it is the formula you should use.

The NFA formula was formulated from the experience of the structural incident scene commander. The NFA formula provides for flows that are based on how the far majority of the Fire Service attacks structure fires.

We can conclude that the best all-around formula for the structural fire officer ordering an aggressive interior attack is the NFA Formula. As with all fire flow formulas, the resultant flows may have to be modified based on experience, common sense, and good judgment.

UNIT 5: BUILDING CONSTRUCTION AND FIRE BEHAVIOR FACTORS

LEARNING OUTCOME

Specify and explain building construction principles and apply actions that consider the strengths and weaknesses of the building classification; through recognition and reaction to the threat of structural collapse, flashover and backdraft ensuring the safety of personnel involved in structural firefighting.

OBJECTIVES

The students will:

1. *Estimate the fire behavior characteristics of five building construction classifications.*

2. *Estimate the causes and consequences of rollover, flashover and backdraft.*

3. *Given a specific structure and incident scenario, predict fire, heat and smoke travel.*

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BUILDING CONSTRUCTION CLASSIFICATIONS

Basic knowledge of building construction and how structures react in fire is vitally important to every fire officer. A building on fire is being destroyed physically. The mission of the fire officer is to determine if it is possible to enter the structure and how long the structure can last under fire conditions. To do this, the officer must understand the building's strengths and weaknesses.

Each type of building reacts differently under fire conditions and certain predictions can be made. For example, a wood-frame building with a lightweight roof composed of truss rafters can be expected to lose its structural strength faster than a building with a roof structure of standard ridgepole and rafter design.

Most buildings can be classified into five general construction categories:

- fire resistive;
- noncombustible;
- ordinary construction;
- heavy timber (mill); and
- wood frame.

Fire Resistive

Fire resistive is a method of construction in which all key structural elements can withstand normal fire conditions for a minimum of three hours. The structural elements are generally made of reinforced concrete or steel with a fire-protective covering. In addition, the floors are fire resistive and designed to limit fire spread. The strength of this construction method has been demonstrated repeatedly. Fire-resistive structures can withstand complete devastation of the contents and still remain structurally sound.

While fire-resistive construction is a very positive feature, the fire officer should be aware of some potential weaknesses. For example, fire may spread from floor to floor at the area where the outer wall (curtain wall) of the building attaches to the floor segments. Many designs include a space between the floor and the wall. This area may be closed off with insulation or left totally open. In addition, the windows very often are the vehicle for fire leaping from floor to floor. To manage this problem, some architects stagger the windows or place "eyebrows" over the tops of the windows.

Special fire suppression problems for fire officers might include open floor plans that have large open areas without separations or compartmentation, limited opportunities for ventilating, and high heat levels inside the structure.

Noncombustible

In **noncombustible** construction, the structural components will not burn but may be susceptible to early collapse under fire conditions. The walls are typically steel or masonry with a steel floor and roof structure. This steel is unprotected from heat and the products of combustion and, therefore, may be vulnerable to early failure. Unprotected steel begins to lose strength at 1,100 F (593 C); steel will not support its own weight at 1,500 F (816 C).

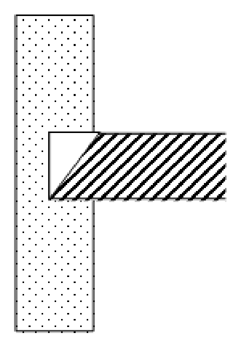
Noncombustible construction is very popular in commercial and industrial facilities. While the structural elements do not contribute to the fuel load, unprotected steel expands as it warms and eventually becomes unable to support itself. As it expands, it has the capacity to push walls or twist and destroy the member itself, causing it to drop any structural members it was supporting.

The strength of this construction method is its load-carrying capacity and the ability to span long areas without support posts. Buildings are constructed easily with large steel beams or trusses put in place with cranes. Steel is attached easily to other components by bolting, riveting or welding, and a frame can be assembled quickly. Weaknesses include the reaction to fire conditions when the steel expands and weakens, with the potential for collapse. This building type is generally considered a candidate for early deterioration in a fire. A fire officer must pay close attention in order to ensure the safety of firefighters.

Ordinary Construction

Ordinary construction (masonry, wood-joist) is a method that has been termed "Main Street USA." This architectural style has masonry exterior walls and wood-joist floors and roofs. The structural members for floor joists and roof rafters are often 3 by 10 inches, typically spanning a distance of 12 to 14 feet. Longer stretches are supported by a post-and-beam arrangement for interior walls. Through the years, these buildings were typically renovated several times with ceilings dropped, new voids created for plumbing fixtures, and walls removed between occupancies in order to expand floor space. This new work often created many additional void spaces.

Since many of the streets on which these buildings were constructed were narrow, an effort was made to limit collapse of the masonry wall. A technique called "fire cut" was used, in which the end of the floor joist or rafter going into a bearing wall is cut on an angle so that the bottom of the rafter or joist is longer than the top. Thus, as the wood member burns off inside the structure, it pulls out of the wall and falls into the building, rather than acting as a lever to lift the masonry wall directly above it and push it into the street.



Fire cut

The strength of ordinary construction lies in the masonry walls and the full-dimension lumber used to build the floor and roof components. In addition, the floor and roof elements were installed with a fire cut so that they would drop out of the walls without bringing the walls into the street.

Weaknesses include the number of renovations that older buildings have undergone, often causing unexpected fire travel and multiple-floor involvement; the fuel load of the structural elements; and the “balloon-frame” construction methods often used for walls and floors. New buildings may have lightweight roof and floor assemblies that are not as strong as their older counterparts.

Heavy Timber (Mill)

Heavy timber is a method of construction that uses substantial wood structural elements for floor and roof supports along with masonry exterior walls. This method was heavily used in the northeastern United States to construct mills. Often, the mills were built near natural sources of water power, at heights up to six stories. The exterior masonry walls would be thicker at the bottom than the top; walls generally would be smaller for each floor that they carried. In many structures, the walls at the ground floor were up to 36-inches thick. The structural timbers, a minimum of 6 by 4 inches, were spaced according to the load they supported. In many of these structures, the floors were several inches thick to support heavy machinery and goods. To minimize water damage to floors below, the floors often were equipped with scuppers.

The strength of this type of building is the size of the wooden structural members that hold the floor and roof in place, in addition to the masonry walls. Under fire conditions, the floors and support timbers burn slowly and remain strong for a long time. In general, this classification includes strong buildings to work in under fire conditions but ones in which fire can quickly surpass suppression capabilities.

A major weakness of heavy-timber construction is that structures provide a large amount of fuel to the fire. Buildings contain many combustible void spaces and openings in the floor where conveyors, lifts, etc. pass through. While these structures often had firewalls with fire doors, they also had large open areas with heavy fire loads, oil-soaked floors, and large quantities of combustible stock.

Today, many of these facilities are being renovated and turned into restaurants, apartments, condominiums and vertical malls. The number of combustible voids often increases dramatically during renovation. Buildings may occupy a full city block, thereby creating an impossible mission when a large fire erupts near the center of the building.

Wood Frame

In **wood-frame** buildings, the structural components are made out of wood. The use of combustible structural elements poses a special concern, since they lose their load-carrying capacity as they burn. Eventually gravity takes over, pulling whatever was supported to the ground.

Post-and-beam construction is a method typically used in barn construction. A modern version is called "pole barn" construction, wherein large pressure-treated poles are set into the ground and the framework of the building is hung from these supports. The poles themselves will last considerably longer under fire conditions than the materials used for the roof or walls.

Balloon frame is a method of wood-frame construction that was popular when long structural materials were available. The common characteristic of these buildings is the use of wall studs extending from the foundation to the roof. To attach the second floor, floor joists were simply nailed to the wall studs. This practice created an open channel the entire height of the wall's studs and across floors to the opposite side of the building. If fire got into the walls, ceiling or floor space, it was free to travel wherever it pleased. Firefighters inside the basements of these buildings often tell of shining a light at the foundation that could be seen by fellow firefighters in the attic. The interior walls generally were constructed of wood lath over wood studs with plaster attached. The lath resembled kindling and was arranged in a manner that facilitated rapid fire extension up through a stud channel.

Balloon-frame buildings typically used full-dimension lumber and had close spacing of structural elements. If a fire officer does not correctly read the building, he or she can quickly become fooled as the fire works the building in all directions. Extension must be checked aggressively in this type of structure.

Platform is an open method of construction that has been popular since the late 1940s. This type of structure is built one floor or story at a time. Each floor has a floor deck, sill plate, wall studs and a plate at the top of the wall. For fire to travel from one floor to another through the walls, it has to burn through a great deal of material. More often, a fire finds another route of extension, e.g., ventilation shafts for dryer, bathroom and kitchen vents, and areas around plumbing pipes or heating ducts. Generally, the interior wall construction uses drywall material, which is inherently fire resistive and provides for compartmentation of a fire. The weakest components are often the floor or roof.

Lightweight Construction

Lightweight construction methods have recently become popular in several of the building types described above. This method uses trusses or "sandwich beams" for floor or roof support. Generally, wooden trusses are made of smaller dimension lumber held together with metal gusset plate fasteners. Under fire conditions, the plates may loosen and the structural integrity of the entire component is lost.

Another technique in use today involves ripping a groove into a 2 by 4 (or worse a 2 by 3) and then inserting a piece of 3/8-inch or 1/2-inch plywood into the notch (plywood I-beam). The size of the plywood depends upon the area to be spanned. These elements, commonly found in floor joists or as rafters on a flat or limited pitch roof, are even becoming popular in some strip mall construction.

The strength of lightweight building methods is the floor-by-floor process of construction. Weaknesses include the lightweight floor or roof design. Lightweight steel bar joists have been known to fail after just nine minutes of fire exposure. Wooden pitched-truss, parallel wood-chord and plywood I-beam elements have been known to fail in just five minutes.

It is critical that fire officers have prefire plans available that indicate the type of wall, roof and floor construction. When an officer simply tries to guess the type of construction, personnel may be put at great risk.

Trusses

There are two types of wood-truss construction: lightweight and timber truss. The parts of both of these trusses consist of a top and bottom chord and intervening members, referred to as “web members.” Trusses are distinguished by the size of the framing members, the top and the bottom chord. To be a timber truss, the minimum size of these members must be 4 by 6 inches. Trusses with smaller dimensions are considered lightweight trusses.

The benefits of both the lightweight and timber trusses are similar. Since less material is used, the overall cost of the structure is less. Through the use of geometry and triangle principles, smaller pieces of lumber properly constructed can support heavy loads and span large, wide areas. Today, over 90 percent of all housing units use some form of lightweight construction, with the preferred components including the triangular and parallel chord truss, wooden I-beams and steel bar joist.

The weakest points in any truss system are the connection points. These connecting points are the main reason for truss failure. Not only will fire attach the wood members, but any steel portions, gusset plates, etc. will allow for greater distribution of the heat and provide for potential failure of the truss system.

The roof of a structure is the most important factor in determining whether trusses come in various designs, from triangular, scissor, parallel chord, bowstring and arch, to name a few.

Triangular trusses are the most common trusses used in single-family dwellings. Triangular trusses provide a peaked roof. Lightweight construction is typically with 2- by 3-inch or 2- by 4-inch wood trusses held by metal gusset plates. The strength of the triangle truss is, under normal conditions, the interconnecting pieces that support each other. A hazard of the lightweight construction is that it equates to a short burning time and the potential of early failure and collapse. This type of truss can create a steep pitch roof.

Scissor trusses are common in construction with cathedral ceilings. They are often found in churches since their construction feature can provide a large open area.

Parallel chord trusses provide a flat roof or floor. The top and bottom chords are parallel. They are commonly used in single-family dwellings, rowhouses, apartment buildings and smaller office buildings. Parallel chord trusses create a “truss void space or truss loft.” These spaces can be interconnected and can contain a sufficient amount of air to sustain a fire.

Bowstring trusses get their name from the curved shape of the top chord. Parapet walls may hide the curved roofline on large commercial buildings.

Bridge trusses are found on various types and sizes of commercial buildings. These buildings were typically constructed during the 1930s and 1940s. Bridge-truss roofs have wooden truss members (2 by 12 inch), metal tie rods used vertically, rafters, sheathing (1 by 6 inch) and composition roofing material, easily identified by its characteristic sloping ends. Strengths of a bridge-truss roof are that they are well constructed and early collapse of main structural members should not be a primary concern. Their hazards are that they may fail predictably in sections because their strength is dependent on the size of lumber used and the span of trusses. Typically, the underside of this roof is usually exposed in warehouse-type structures.

Arch trusses are similar to the bridge-truss roof. They were constructed mainly during the ’30s, ’40s and ’50s on both small and large commercial structures. Their strengths are that they are well constructed, similar to a bridge truss, and do not use plywood for deck coverings.

Francis L. Brannigan on trusses: “The bottom chord of a truss is under tension. It’s like you are hanging on a rope. If the rope gets cut, you will fall. So it is with a truss.” “Failure of one element of a truss may cause the entire truss to fail; failure of one truss can cause other trusses to fail.”

Other Construction Materials

Structural insulated panels (SIPs) are another interesting composite material. They are comprised of expanded polystyrene sandwiched between two sheets of oriented strand board (OSB). SIPs typically range in thickness from 4 to 12 inches and can be up to 24 feet long. Roof spans are typically between 12 and 14 feet and floor spans typically range between 8 and 16 feet. Panels may be generic without penetrations and openings for windows, and doors can be cut on the jobsite. SIPs can also be ordered as a packaged system that typically arrive at the site precut with all window and door openings installed. Electrical chases may be preformed at the factory or cut in the field.

Two structural skins give panels the necessary strength to withstand axial, bending, and racking and shear loads. Manufacturers state that SIPs can be designed to withstand winds in excess of 160 mph and meet seismic Zone 4 requirements. SIPs have excellent thermal performance; manufacturers state that buyers report energy-saving in excess of 50 percent.

The resulting sandwich panel product acts like an engineered I-beam, resisting both compressive forces from above and buckling forces from the side. Engineering tests show that, depending on the type of structural test being administered, SIPs range between two and seven times stronger than traditional framing. In some SIPs, integral studs used as splines for joining panels together also help carry the structural load.

Insulated concrete forms (ICF) are forms or molds that have built-in insulation for accepting reinforced concrete. The first patent application for an ICF was registered in the late 1960s.

Since then, and particularly in the last five years, ICFs have been fast-becoming the mainstream preferred building product worldwide for all of the right reasons. These large, hollow blocks are stacked right off of the truck and filled with reinforcing bar and concrete. The end result leaves you with a high-performing wall that is structurally sound, insulated, strapped, has a vapor barrier, and is ready to accept final exterior and interior finishes.

Firefighter Safety Concerns

Wall Spreaders, or stars, diamonds, triangles, circles, etc., are typically connected by cables to another spreader on the opposite side of the building to increase structural stability. Failure of any portion of this system will cause failure of the walls the system was supporting.

Incident in Baltimore County

Alert Fire Box 14-7

E-321 arrived with heavy smoke showing from the structure. Seven minutes after arrival, a Mayday was announced with two firefighters down. The truss joist I-beams (TGI) in the floor had burned through and collapsed, but the floor tile had remained in place, so the floor **appeared** to be sound as the firefighters had made their way into the structure prior to falling into the basement. The TGI beams that were used in the lightweight construction had burned through and allowed the supporting structure to fall through with the firefighter’s weight. Luckily, there was minimal fire in the basement, and the firefighters were rescued without additional injuries.

Francis L. Brannigan on collapses: In response to those who claim a building has collapsed without warning during a fire: “The warning is the brain, in your ability to understand buildings and anticipate how they will react to a fire.”

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Activity 5.1

Building Construction Case Study

Purpose

To examine an actual fire incident and determine which construction features contributed to the impact of the fire and the success (or lack thereof) of firefighting operations.

Firefighters can, in part, compensate for limited opportunities to learn through direct experience by critically examining the experiences of others. This activity demonstrates how case studies can be used by individuals, companies or departments to enhance knowledge and skills as a part of Command Officer training and development.

Directions

1. Study the scenario described on the following pages. Working in small groups, answer the following questions:

   a. What construction type was involved?

   ____

   ____

   ____

   b. Did the construction type affect fire spread, and if so, how?

   ____

   ____

   ____

   c. Did the stability of the structure under fire conditions affect firefighting operations, and if so, how?

   ____

   ____

   ____

d. Based on the case study, what effect should this type of construction have on firefighting operations?

____

____

____

2. Each group will appoint a representative to report its findings. The report should include an overview of the incident and the answers to the preceding questions.

Activity 5.1 (cont'd)

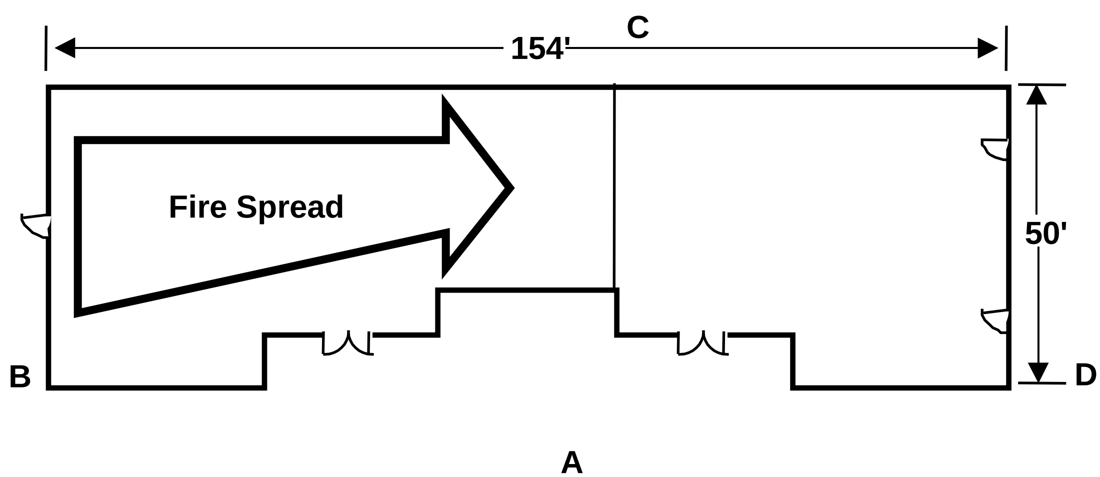
Building Construction Case Study

Sunrise Gifts

The Building

This structure contains concrete block walls and a wood-truss roof assembly. The dimensions of the building were 154 by 50 feet (7,700 sq. ft.). The block walls were 12 feet in height. The truss roof assembly provided a 14-foot-high void area above the ceiling. The trusses were pre-engineered wood, constructed of 2- by 6-inch chords with 2- by 4-inch webbing, attached by sheet metal surface fasteners. The trusses were covered by 5/8-inch plywood, roofing felt, and precast clay tiles.

The floor area was divided into two occupancies: a 3,000-square-foot restaurant and a 4,000-square-foot mercantile occupancy. The truss space was divided into approximately 3,700-square-foot sections. However, the separation of the truss area was compromised by poke-throughs for building services.



Fire Behavior

The fire was believed to have originated in the truss space on Side B. Based on analysis by investigators, it was estimated that ignition occurred at approximately 1530 hours, with a free-burning fire developing within three to five minutes. Driven by a 22-mph wind from Side B, the fire extended toward Side D.

During the early stages of the fire, the air supply provided by attic vents was sufficient to sustain fire growth. As fire volume increased, air supply became insufficient to support fire development. Bystanders reported that the fire was showing and then pulling back into the louvers in the dormer prior to the arrival of firefighting personnel.

At the time of collapse, the entire roof from Side D to the center of the building was involved in fire. At the time interior operations were initiated, backdraft conditions may have been present in the truss area.

Firefighting Operations

Initial operations involved deployment of a 1 3/4-inch handline to the interior of the store. Little or no heat and smoke were encountered. The handline was relocated to the exterior and operated into the dormer over the store on Side A. The operation of the stream had no affect on the fire. The line again was extended into the mercantile occupancy and positioned approximately 15 feet inside the structure. Firefighters pulled the ceiling and operated the handline intermittently into the truss area. When a heavy body of fire was observed in the space above them, the Company Officer (CO) ordered the crew to retreat from the building. At this point, the crew heard a “popping” noise and the ceiling assembly collapsed, the first floor area became enveloped by extending fire, and the roof assembly collapsed.

Two firefighters died in this building.

FIRE BEHAVIOR FACTORS

An important part of your job is the ability to make accurate fire behavior predictions. Understanding **fire behavior factors** will assist you in determining what is happening and what is likely to happen. These factors have an impact on safety, strategy, tactics and the use of resources. They include:

- heat release;
- thermal stratification;
- rollover;
- flashover; and
- backdraft.

Heat Release

Heat is described in several ways, which are all related. In order to better understand the concept of heat, the following definitions are necessary:

- **British thermal unit** (Btu): One Btu is the amount of heat required to raise the temperature of 1 pound of water 1 degree Fahrenheit (F) (when the measurement is performed at 60 F (15.6 C)).

- **Heat of combustion:** The amount of heat that will be released by a substance when it is completely consumed by fire.

Knowledge of the types of materials present in a given fire situation and their heat values can assist you in determining the amount of water to apply, as well as the behavior of other materials within the environment. A number of variables influence the heat output from burning materials:

- The surface area of solid combustibles exposed to heat and oxygen (the state of subdivision).

- The free surface area of liquids (in the case of flammable substances to give off vapor pressure).

- The conductivity of solids (wood, plaster, etc.), which influences the amount of heat given off when materials burn.

Even though the heat values (in Btus) of various materials are not precise, they provide necessary information for examining “fire loading” and the heat absorption qualities of water. Examples of the heat of combustion values for various materials are shown in the following table.

Materials	Btu/lb
Asphalt	17,150
Cotton batting	7,000
Gasoline	19,250
Paper	7,900
Polystyrene	18,000
Polyvinyl chloride	7,500 to 9,500
Wood	7,500 to 9,500

Thermal Stratification

Thermal stratification is the layering of heat in a given enclosed area. The ceiling or upper area will be a higher temperature than lower levels. Thus, floor covering materials are potentially less hazardous than ceiling or wall surfaces.

In a prefire inspection, do not ignore the degree of combustibility of materials used throughout the occupancy. In the MGM Grand Hotel fire, the use of plastic materials in ceiling areas dramatically affected fire behavior.

The introduction of water through a hose nozzle rapidly changes the thermal stratification of enclosed areas. In most cases, a thermal balance occurs following the introduction of water, causing the temperature in the room to equalize.

If the thermal balance is disturbed, temperatures can rise beyond the point where victims trapped inside have a chance of surviving. Wide fog patterns applied into a room can turn the water into superheated steam, endangering both potential victims and firefighters. Full protective clothing and self-contained breathing apparatus (SCBA) must be worn by all firefighters.

Rollover

The term rollover is used to describe the fire or flame front that is often observed “rolling along” in front of the materials that are actually burning. The combustible gas produced and liberated from combustible materials must mix with air (oxygen) in order to burn. Since the burning material consumes tremendous amounts of oxygen, an inadequate supply of oxygen may exist in the upper levels of the room to support combustion of all the fuel being produced. This fuel-rich atmosphere may be pushed in front of the fire by the thermal column of heat. It may not come within flammable limits until it is several feet from the main body of the fire, especially in confined areas such as hallways. Often fire seems to be rolling along at ceiling level a distance 10 to 20 feet ahead of the main fire. In actuality, a fuel-rich mixture is being pushed well ahead of the fire; when it comes into its flammable limits (mixture of air and fuel gas), it burns.

Flashover

A very basic definition of flashover is the ignition of all combustibles in an area heated by convection, radiation or a combination of the two. The combustible substances in a room are heated to their ignition point and almost simultaneous combustion of the material occurs. In other words, the entire area is preheated to its ignition temperature, becoming fully involved in fire in a matter of seconds.

Some of the warning signs of imminent flashover are intense heat, free-burning fire, unburned materials starting to smoke, and fog streams turning to steam a short distance from the nozzle. To reduce the chance of flashover, temperatures should be lowered quickly by ventilation and water application.

Backdraft

As a fire develops, the combustion process can create an atmosphere that is deficient in oxygen. The result may be **backdraft**, also referred to as a smoke explosion. The difference between flashover and backdraft is the amount of oxygen present. In flashover, adequate oxygen is available for combustion and the fire is free-burning. In backdraft, oxygen is insufficient for active burning and the fire is smoldering. It is an oxygen-deficient atmosphere.

Normally, sufficient oxygen is present during fires so the danger of backdraft is minimized. However, when oxygen is depleted and the fire begins to smolder, an oxygen-deficient atmosphere is created in the fire area. Gases such as carbon monoxide and carbonaceous-particle smoke or suspensions capable of reacting with oxygen are produced.

This process poses a threat if oxygen is improperly allowed to enter the structure. The accumulated gases ignite readily, spreading fire or causing a violent explosion. Due to high temperatures in the room, the fuel evolves into ignitable vapors at or above their ignition temperature. If backdraft occurs, the resultant explosion can destroy the building and kill or injure any firefighters in the vicinity.

Backdraft can occur at the incipient fire stage or the smoldering fire stage. The potential exists in buildings, rooms, attics or any other confined space. Ventilation must precede fire attack under potential backdraft conditions.

FIRE TRAVEL PREDICTIONS

Fire, Heat and Smoke Travel

Checking fire extension requires an understanding of how fire spreads, along with knowledge of building construction features and the effects of concealed vertical and horizontal spaces. Whenever and wherever openings are made, hoselines should be ready. While every effort should be made to minimize damage to the building and its contents, openings have to be large enough for inspection, hose manipulation, and ventilation.

Until determined otherwise, always assume that a working fire inside a building has entered concealed vertical and horizontal channels. Personnel should constantly look for indicators such as blisters and discolorations on walls, smoke patterns at moldings, walls hot to the touch, or smoke (or fire) showing around roof features, such as vent pipes. If any indicators are present, checking for vertical fire extension is critical.

The tendency for most fire to travel vertically does not preclude horizontal spread. Fire will follow any path available: void spaces between ceilings and floors, over false or hanging ceilings, around utility conduits, etc. Extension occurs not only within the structure but also from building to building. Here again, hoselines must be in place prior to opening up suspect areas. The signs of fire in these areas may be difficult to read, but look for some of the indicators present in vertical spread. **Heavy metal areas should not be overlooked**; fire spread in these areas has been responsible for fatalities, as well as for fires getting out of control.

Tactical operations in large and complex occupancies have to be coordinated carefully in order to accomplish a reduction or change in heat and smoke travel. Ventilation is a key tactical operation affecting how, when, and where heat and smoke spread through a structure.

In your prefire inspections and plans, look at all the possibilities of heat and smoke travel in a specific occupancy. A fire emergency is not the time to study heat and smoke probabilities.

Predicting Fire Behavior

Based on fire behavior factors and resource capabilities, you must make a fire behavior prediction, which answers the following questions:

- Where is the fire at this time?
- In what direction is it likely to spread?
- Is flashover imminent?
- Is backdraft imminent?
- Is collapse likely to occur within the time required for offensive operations?

Once you can answer these questions, you have identified the problems and have a much clearer idea of resource needs.

Predicting fire travel in structures must be based upon a good understanding of building construction and fire behavior. Fire, smoke and heat travel are dependent upon many factors such as void areas within the structure, the effect of the wind, and the positioning of hoselines.

The building layout and design can be an advantage or a disadvantage to fire confinement and suppression efforts. Fires in large open areas generally are more difficult to confine than fires in a compartmented area. Items such as fire load and built-in fire protection features — firewalls, fire doors, and automatic sprinkler systems — can play a major role in the amount of resources needed and the effort it will take.

Fires generally spread from room to room via open doorways or through lightweight doors that do not last more than a few minutes under fire conditions. Fires generally spread from floor to floor via open stairways or open shafts and voids.

Fires also extend through radiant heat. A number of variables affecting the transfer of radiant heat energy must be considered in determining what constitutes an exposed property, exposure protection, operating distances for fire suppression personnel, reach of hose streams, fire flow needed, etc. Some of these factors relate to the nature of the heat source.

Point Source Fire: Examples of a point source fire include a small bonfire or fire issuing from a single window in a wall. The radiant heat felt from this type of source at 10 feet is reduced to one-fourth the amount at 20 feet, one-ninth the amount at 30 feet, one-sixteenth the amount at 40 feet and so on. The formula for calculating this reduction is called the **ratio of the distances squared,** which says the percentage of heat felt at the second distance is equal to the square of the ratio of the two distances — (Distance 1/Distance 2)^2. Sample calculations for the above distances are as follows:

$(10/20)^2 = (1/2)^2 = 1/4$ $(10/30)^2 = (1/3)^2 = 1/9$ $(10/40)^2 = (1/4)^2 = 1/16$

Line Source Fire: A line source fire can be considered as coming from an infinite number of points. Examples might include a running flammable liquid fire or a grass/brush fire. In this situation, the radiant heat felt at 10 feet will be reduced to only one-half the amount at 20 feet, one-third the amount at 30 feet and one-fourth the amount at 40 feet. The formula for this reduction is simply called the **ratio of the distances**, meaning that the percentage of the heat felt at the second distance is equal to the ratio of the two distances — (Distance 1/Distance 2). Sample calculations for the above distances are as follows:

10/20 = 1/2 10/30 = 1/3 10/40 = 1/4

Area Source Fire: An area source can be described as an infinite number of lines. Examples might include the face of a wood-sided structure fully involved or a wildland fire that is burning in trees and has a high and wide fire front. In this case, the radiant heat felt at 20 feet will be about 70 percent of that at 10 feet. There is no formula for this approximation. Remember that an area source fire (conflagration) can spread rapidly and has the ability to turn hose streams into steam before they ever reach the seat of the fire.

Fire travel predictions can be made by asking a few basic questions:

- Where is the fire now?
- Where is the smoke showing?

- What is in place to stop the spread of fire and smoke to other areas of the structure, e.g., firewalls or other fire-resistant materials?

- What signs — discoloration of paint, bubbling tar, or other building reactions — provide clues about fire travel?

The ability to predict fire travel provides officers with critical information that can lead to successful operations, realistic and proactive decisions, and adjustments as needed. Remember: A good fire officer is an informed officer, and an informed officer is a safe officer.

Activity 5.2

Fire Behavior Predictions

Purpose

To practice identifying critical factors of fire behavior, and predicting fire, heat and smoke travel.

Directions

As a group, answer the following questions about the structure depicted in the slides.

Walk-through Scenario: Single-family dwelling.

A fire has been reported at a structure five minutes prior to your arrival. The structure is approximately 30 feet by 50 feet with an attached garage. The neighbors report, upon your arrival, that the occupants are on vacation and no one is in the structure.

1. Is firefighter safety a concern? Why?

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2. What classification or construction type is the structure?

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3. Has flashover occurred yet? If not, does flashover appear to be a concern?

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4. Does backdraft appear to be a concern?

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5. How will fire, heat and smoke travel through this structure?

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6. Do you expect the amount of heat produced to be low, moderate or high? Why?

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In small groups, answer the same questions for the structure and scenario assigned to your team.

Scenario 1: Two-story, four-unit townhouse complex.

The structure is a two-story, four-unit townhouse complex with a common attic. A fire has been reported in the basement workshop area. The owner reports to you that he or she was using an acetylene torch and the hoseline on the unit burst. A fire erupted and he or she called the fire department. The building was constructed in 1986.

1. Is firefighter safety a concern? Why?

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2. What classification or construction type is the structure?

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3. Has flashover occurred yet? If not, does flashover appear to be a concern?

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4. Does backdraft appear to be a concern?

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5. How will fire, heat and smoke travel through this structure?

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6. Do you expect the amount of heat produced to be low, moderate or high? Why?

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Scenario 2: Three-story, ordinary construction apartment house.

The fire has occurred in a three-story, 18-family building of ordinary construction, built in 1936, with six apartments on each floor. The fire was reported from apartment 3B and the caller stated that several occupants were trapped.

1. Is firefighter safety a concern? Why?

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2. What classification or construction type is the structure?

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3. Has flashover occurred yet? If not, does flashover appear to be a concern?

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4. Does backdraft appear to be a concern?

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5. How will fire, heat and smoke travel through this structure?

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6. Do you expect the amount of heat produced to be low, moderate or high? Why?

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Scenario 3: One-story shopping center, fire in fast-food restaurant.

The structure is a modern one-story shopping center constructed in 1985. The center's common area has automatic smoke vents; there are no sprinklers. A fire has been reported in the large French Fryer of a fast-food restaurant. The caller stated that the automatic extinguishing system failed to operate.

1. Is firefighter safety a concern? Why?

2. What classification or construction type is the structure?

3. Has flashover occurred yet? If not, does flashover appear to be a concern?

4. Does backdraft appear to be a concern?

5. How will fire, heat and smoke travel through this structure?

6. Do you expect the amount of heat produced to be low, moderate or high? Why?

Scenario 4: Three-story garden apartment with center hallway.

A fire has been reported from apartment 2C of a three-story, wood-frame garden apartment complex. The building has a center hall and is constructed in a manner typical for this occupancy type. A second call was received from an occupant on the third floor stating that smoke was coming from his or her kitchen cabinets.

1. Is firefighter safety a concern? Why?

2. What classification or construction type is the structure?

3. Has flashover occurred yet? If not, does flashover appear to be a concern?

4. Does backdraft appear to be a concern?

5. How will fire, heat and smoke travel through this structure?

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6. Do you expect the amount of heat produced to be low, moderate or high? Why?

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Scenario 5: Barn complex in rural setting.

A fire has been reported in the milking parlor of a large dairy barn. The original barn was constructed in 1948, and an addition was completed in 1980. A new milking parlor was added at the intersection of the two barns, tying them both together. There are no doors on the openings from the milking parlor into the barns.

1. Is firefighter safety a concern? Why?

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2. What classification or construction type is the structure?

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3. Has flashover occurred yet? If not, does flashover appear to be a concern?

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4. Does backdraft appear to be a concern?

5. How will fire, heat and smoke travel through this structure?

6. Do you expect the amount of heat produced to be low, moderate or high? Why?

Activity 5.3

Predicting Fire Travel

Purpose

To identify important construction features, assess fire and smoke development, and predict fire travel patterns in specific incident scenarios.

Directions

A slide of the building will be shown. Review the features of the building and make predictions about fire travel within this structure. Then, a second slide will show fire travel in the structure during an actual incident.

Building 1: Townhouse complex.

Question: What would happen if a fire started in the outside utility room closest to the entrance at the end of the townhouse (Side A)?

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Question: Do you see anything unusual at the end wall (Side D) of the townhouses?

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Building 2: Duplex (two-family unit).

Question: While it appears that the firewall held the fire from the adjoining dwelling, what will happen if the fire gets into the attic?

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Building 3: Three-story rowhouses.

Question: What will happen if a fire gets into the attic and there are no firewalls, or they have been pierced?

SUMMARY

Knowledge of building construction methods helps fire officers predict how structures react under fire conditions. Buildings are classified into five categories, each with distinctive strengths and weaknesses for fire suppression operations:

- fire resistive;
- noncombustible;
- ordinary;
- heavy timber; and
- wood frame.

Wood-frame buildings can be broken down further into post-and-beam, balloon-frame, and platform designs. Lightweight construction methods — sandwich beams, plywood I-beams, etc. — add to the dangers in many newer structures.

The ability to predict fire behavior helps decision-makers determine what is happening and what is going to happen on the fireground. Factors include the combustion characteristics of different types of materials; the effects of rollover, flashover and backdraft conditions; and the impact of building design on fire, heat and smoke travel.

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SUGGESTED READING

"Two Firefighters Killed in Auto Parts Store Fire, Chesapeake, Virginia" (March 18, 1996). USFA Technical Report #087.

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APPENDIX

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United States Fire Administration

Technical Report Series

Two Firefighters Killed in Auto Parts Store Fire Chesapeake, Virginia

Federal Emergency Management Agency

United States Fire Administration

United States Fire Administration

Major Fires Investigation Program

The United States Fire Administration develops reports on selected major fires throughout the country. The fires usually involve multiple deaths or a large loss of property. But the primary criterion for deciding to write a report is whether it will result in significant "lessons learned." In some cases these lessons bring to light new knowledge about fire -- the effect of building construction or contents, human behavior in fire, etc. In other cases, the lessons are not new, but are serious enough to highlight once again because of another fire tragedy. In some cases, special reports are developed to discuss events, drills, or new technologies or tactics that are of interest to the fire service.

The reports are sent to fire magazines and are distributed at national and regional fire meetings. The reports are available on request from USFA. Announcements of their availability are published widely in fire journals and newsletters.

This body of work provides detailed information on the nature of the fire problem for policymakers who must decide on allocations of resources between fire and other pressing problems, and within the fire service to improve codes and code enforcement, training, public fire education, building technology, and other related areas.

The Fire Administration, which has no regulatory authority, sends an experienced fire investigator into a community after a major incident only after having conferred with the local fire authorities to insure that USFA's assistance and presence would be supportive and would in no way interfere with any review of the incident they are themselves conducting. The intent is not to arrive during the event or even immediately after, but rather after the dust settles, so that a complete and objective review of all the important aspects of the incident can be made. Local authorities review USFA's report while it is in draft form. The USFA investigator or team is available to local authorities should they wish to request technical assistance for their own investigation.

The United States Fire Administration greatly appreciates the cooperation received from Division Chief Thomas H. Cooke.

For additional copies of this report write to the United States Fire Administration, 16825 South Seton Avenue, Emmitsburg, Maryland 21727.

Two Firefighters Killed in Auto Parts Store Fire Chesapeake, Virginia

(March 18, 1996)

Investigated by: J. Gordon Routley
Jeff Stern

This is Report 087 of the Major Fires Investigation Project conducted by Varley-Campbell and Associates, Inc./TriData Corporation under contract EMW-94-C-4423 to the United States Fire Administration, Federal Emergency Management Agency.

Federal Emergency Management Agency

United States Fire Administration

TABLE OF CONTENTS

TWO FIREFIGHTER DEATHS IN AUTO PARTS STORE FIRE CHESAPEAKE, VIRGINIA

(March 18, 1996)

Investigated by: J. Gordon Routley
Jeff Stern

Local Contact: Division Chief Thomas H. Cooke
Fire Marshal
Chesapeake Fire Department
304 Albemarle Drive
Chesapeake, Virginia 23320
(757) 382-6165

OVERVIEW

On March 18, 1996, two firefighters were killed in Chesapeake, Virginia when they became trapped by a rapidly spreading fire in an auto parts store and a pre-engineered wood truss roof assembly collapsed on them. The cause of the fire was an electrical short created when a power company truck working in the rear of the building drove away with its boom in an elevated position, accidentally pulling an electrical feed line from the main breaker panel at the rear of the store. Post-incident investigations indicate that the electrical fault may have sparked multiple points of fire origin throughout the roof structure of the building, due to improperly grounded wiring.

This is another incident illustrating the rapid failure of lightweight construction systems when key support components are involved in a fire. It points out the importance of pre-fire planning and accurate size up by fire companies to determine the risk factors associated with a fire in this type of construction. Lessons regarding importance of initial company actions, constant re-evaluation of action plans, strong command and coordination of units on the fireground, and recognition of signs of impending structural failure were also reinforced.

This incident was investigated by the City of Chesapeake Fire Department Fire Marshal's Office. Incident investigations and analysis were also conducted by the National Fire

Protection Association, the Virginia Power Company, and the Virginia State Occupational Safety and Health Administration.

The Chesapeake Fire Department serves a rapidly growing area of 353 square miles in Tidewater Virginia, just west of Virginia Beach and south of the City of Norfolk. The department has 319 career firefighters and EMS personnel that provide service from 14 fire stations. The estimated population in the City of Chesapeake is 170,000. The initiatives taken by the Chesapeake Fire Department as a result of this incident are listed in Appendix C to this report.

SUMMARY OF KEY ISSUES

Issue	Comment
Staffing	The first alarm response provided a small attack force with limited capabilities. The full response brought only 10 personnel.
Size-up	The first arriving company officer was not able to determine the location and extent of the hidden fire.
Pre-fire plan information	This complex required a pre-fire plan due to the complex arrangement, multiple occupancies, mixed construction, lack of fixed protection, limited access and difficult water supply problems. The first-due company did carry a pre-fire plan that showed the layout of the shopping center and the floor plan for the auto parts store, but the pre-fire plan was not referenced by the crew during the fire.
Delayed response	The first arriving company was on the scene alone for several minutes with only 3 personnel. The back-up companies had long response times. The lack of evidence of a working fire prompted the initial incident commander to return some of the responding units, resulting in even longer response times.
Water supply	The first-in company did not establish a water supply. This required the second engine company to be committed to this task.
Incident command	The battalion chief was faced with a complicated and rapidly changing situation. He was not able to effectively transfer command from the initial officer and direct the operations of widely separated units.
Operational risk management	The officers involved in the initial part of the operation had to make critical risk management decisions with limited information.

Accountability	Accountability for the personnel operating in the hazardous area was not established prior to the structural collapse. As the situation became critical, no one realized that a crew was still inside the building.
Rapid intervention crew	Additional crews did not arrive in time to assist the crew that was in trouble inside the building.
Radio communications	The lack of a clear radio channel for fire ground communications caused serious problems with command and control of the incident, including the failure to maintain communications with the crew inside and the failure to hear their request for assistance.
Lightweight construction	The roof collapsed quickly and with very little warning. This should be anticipated with a lightweight wood truss roof assembly. This hazard was not recognized by the crews on the scene.

BUILDING DESCRIPTION

Construction and History

The fire occurred in a modern, lightweight construction building that was added to an existing strip mall in 1984. The older mall on exposure side four was separated from the fire building by a masonry fire wall and was constructed with masonry walls and a steel bar-joist roof structure. The exposures on side two consisted of additional stores that were similar in construction to the auto parts store. There were no exposures on sides one and three (Figure 1).

The auto parts store was constructed with two masonry exterior walls and two wood frame exterior walls, with a lightweight wood truss roof assembly. It was approximately 120 feet deep and 50 feet wide, providing about 6,000 square feet of open display and storage space. The roof assembly was a pre-engineered lightweight wood truss assembled from 2 x 6 top and bottom chords, with 2 x 4 web members held together with metal gusset plates. There were no interior bearing walls or supports for the roof structure. At one end, the trusses were supported by a wood plate that was bolted to a metal beam.[1] The other end rested on top of the concrete block wall. Each truss was separated by 24 inches and they were covered with 1/2 inch CDX plywood sheathing under a two-ply rubber membrane. A drywall ceiling was attached to the underside of the trusses, creating a truss void space

[1] Post incident investigations by the Chesapeake building inspector revealed that these ends may not have been properly secured to the beam.

(truss loft) 24 to 36 inches above the ceiling. A sheet rock divider was located in the middle of the truss void as a draft stop. The roof had a slight pitch (Figure 2).

Three air handling units were on the roof of the building, with an estimated combined weight of 3,000 pounds. It is not known when these units were installed and they may have represented an unanticipated dead load on the roof assembly. There was no indication that the trusses had been reinforced to support the extra weight of these units.

The original truss roof structure collapsed during the construction of the building, injuring three workers. Most of the trusses were damaged and had to be replaced at the time.

The fire building was occupied by Advance Auto Parts, a chain distributor of automobile part and lubricants. The store was designed with an open retail area containing display racks for goods. A long counter ran from front to back behind which was shelving for additional auto parts. Waste oil and batteries were kept in a rear storage area separated from the front of the store by a drywall wall. The southwest corner of the building contained employee restrooms which had a small water heater located in the ceiling space just above them (Figure 3).

The main entrance to the store was through two large glass doors at the front of the building. A delivery and service entrance was located in the rear and a 40 foot trailer was parked behind the building and used for additional storage.

Figure 1
ADVANCE AUTO PARTS STORE
View from the Northeast Corner

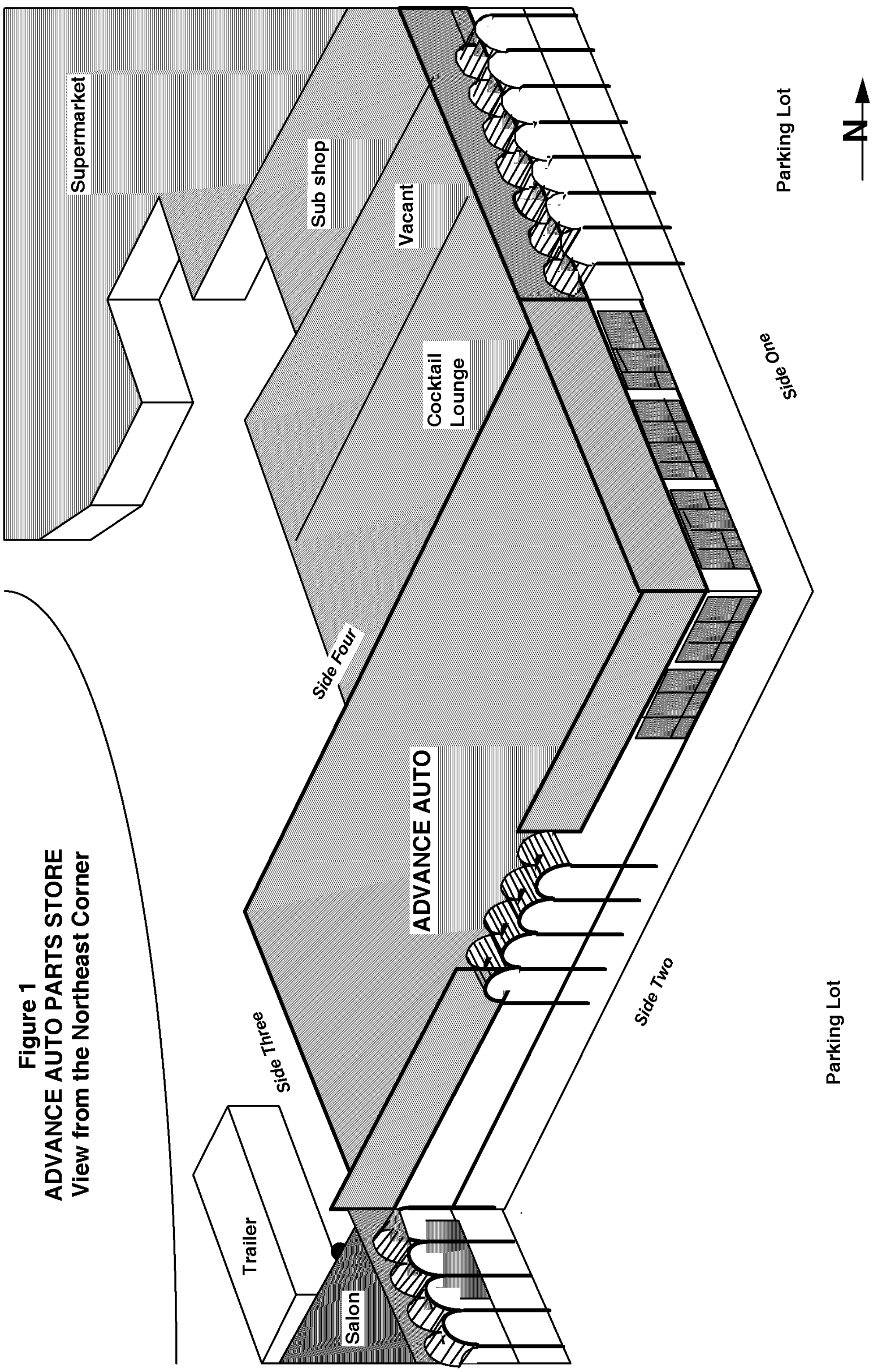

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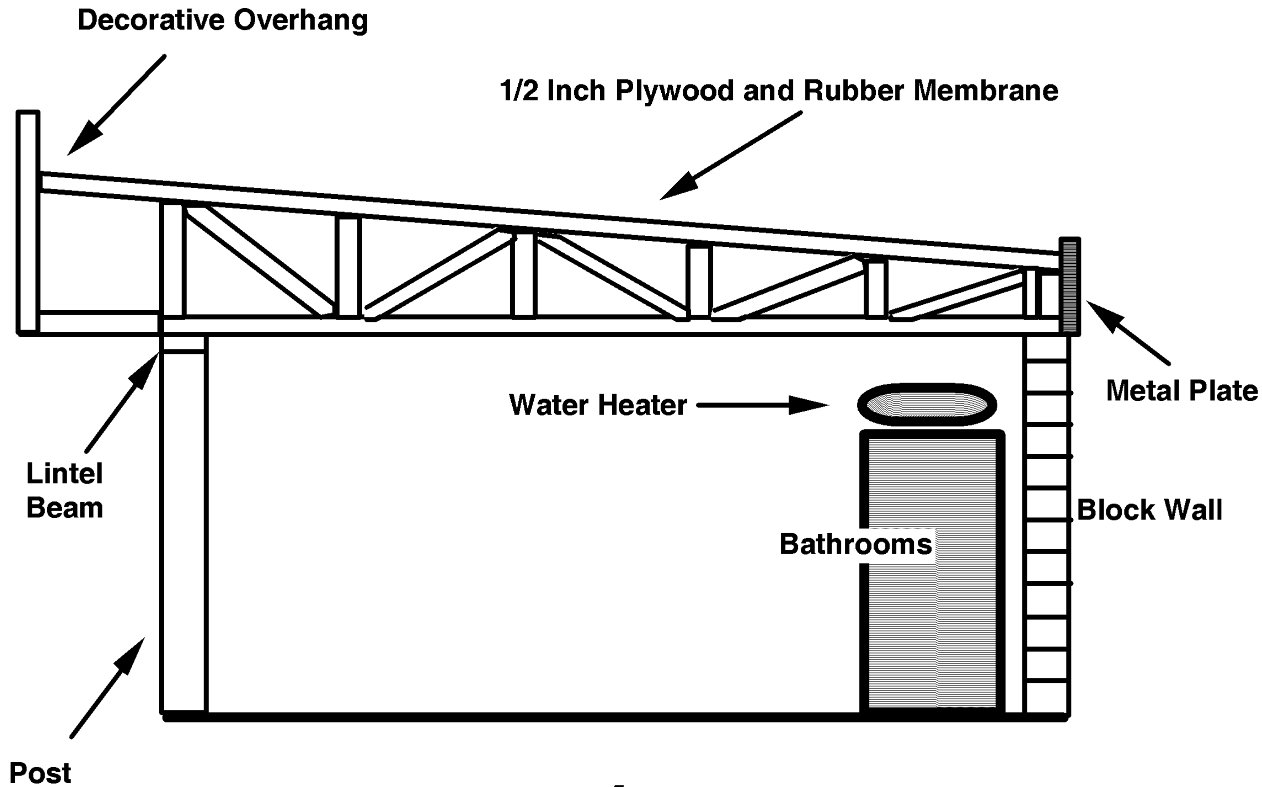
Figure 2
ADVANCE AUTO PARTS STORE
Dissection of the truss roof as viewed from front to back of the building.



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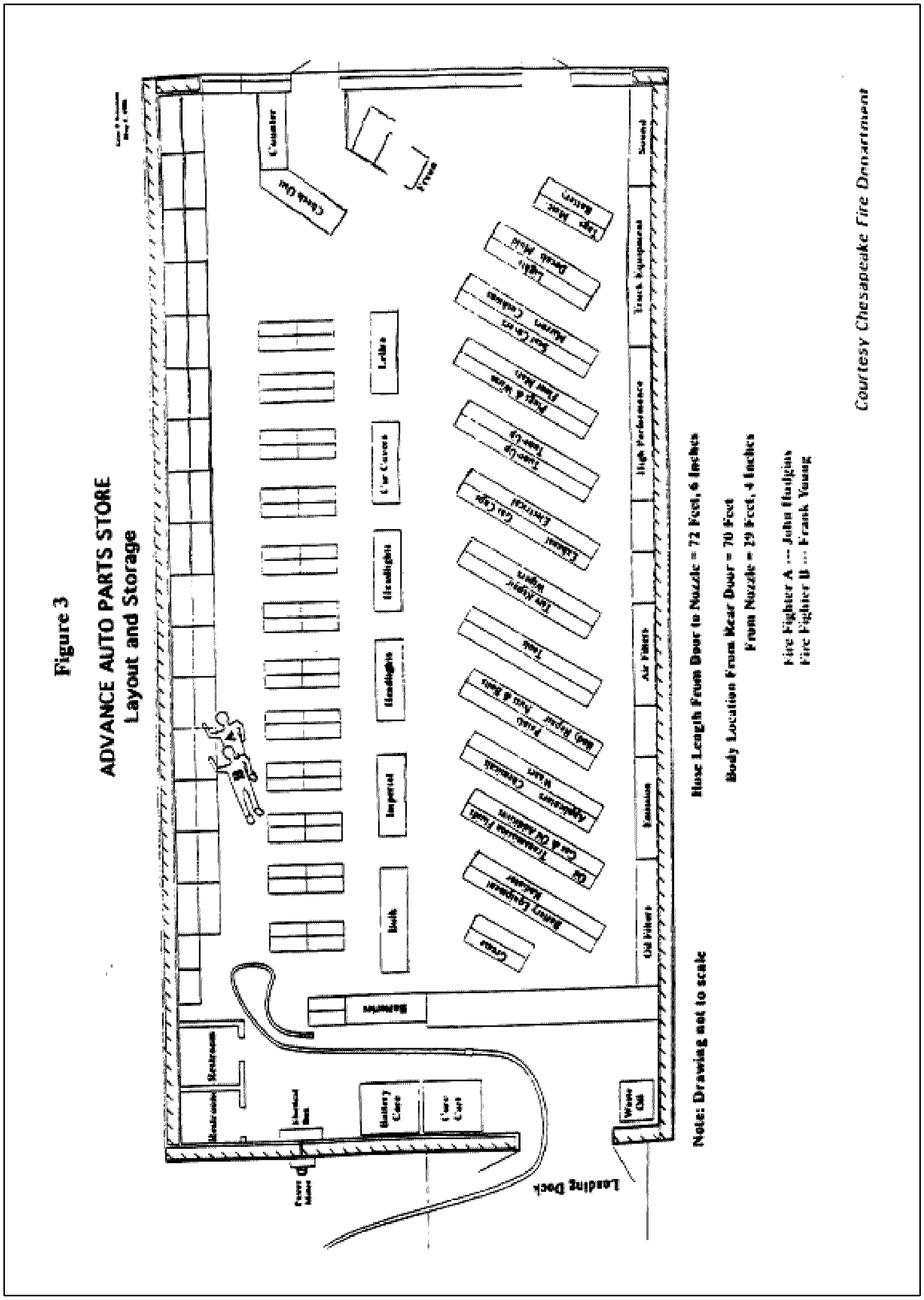


Figure 3
ADVANCE AUTO PARTS STORE
Layout and Storage

THE FIRE

Cause

At approximately 11:00 a.m. on March 18, 1996, a power company employee set up a service truck at the rear of the Indian River Shopping Center in Chesapeake, Virginia. The worker was going to disconnect the electrical power to a customer who had not paid an electrical bill. The customer, a cocktail lounge and bar, was located adjacent to Advance Auto Parts. In preparing to disconnect service, the power company worker elevated the articulating boom on his truck to roof level. Faced with the immediate loss of power, an employee of the lounge paid the electrical bill while the power company employee was beginning work, and went to the back of the store to show the receipt. A stamped receipt indicates the bill was paid at 11:16 a.m. at a supermarket also located in the shopping center. The power company employee, working from the bucket of the articulating boom, lowered the boom and verified the receipt. Although the bucket had been lowered, the hinged elbow of the articulating boom remained elevated. The employee then radioed his supervisor from the cab of his truck, and received instructions not to disconnect power.

The power company employee then attempted to drive the service truck away, forgetting to secure the boom, which snagged on a power line feeding the meter at the rear of the Advance Auto Parts Store. This caused a phase-to-phase and phase-to-ground arcing fault at the store's electrical meter, starting the fire. The power company employee immediately stopped, exited his truck, and cut the remaining power connections to the meter at the rear of Advance Auto Parts.

Initial Actions Prior to Calling 911

After cutting the power line to the building, the power company employee removed the meter, noticed smoke coming from the meter base, notified his office and requested that another power company crew and a supervisor come and assist him. An employee of the Advance Auto Parts Store came to the rear of the building and met the power company employee, telling him that the store had lost electrical power and that a fire was being extinguished inside the building. Another Advance Auto Parts employee discharged a dry chemical fire extinguisher on the spot fire that had started near the hot water heater above the employee restrooms. All believed the fire had been extinguished at this time.

At 11:29 a.m., the Chesapeake Fire and Police Emergency Operations Center received a 911 call from Advance Auto Parts reporting a problem with the fuse box in the store. The Chesapeake Fire Department was dispatched to a report of a fuse box sparking at 4345 Indian River Road at the Advance Auto Parts store.

Emergency Response

Initial response consisted of two engines, a ladder company, and a battalion chief, for a total of 10 personnel. Engine 3 was the first due arriving company, responding from quarters. Engine 1 and Ladder 2 also responded. Battalion 1 was dispatched as the command officer, but requested that Battalion 2 cover the assignment, since he was out of position. Battalion 2 acknowledged the request, and he responded with the first alarm companies.

Engine 3's crew consisted of three personnel: a driver/pump operator; Firefighter-Specialist John Hudgins, serving as Acting Lieutenant for the shift; and Firefighter-Specialist Frank Young, detailed to the station for the day, was riding in the jump seat. Engine 3 was responding in a reserve engine that had a 500 gallon water tank.

Initial Size-Up and Company Actions

At approximately 11:35 a.m., about five and a half minutes after dispatch, Engine 3 arrived on the scene at the front of the strip mall. Hudgins reported "a single-story commercial structure, nothing showing from the front. Engine 3 is in command."

Engine 3 took a position in front of the Advance Auto Parts Store. Hudgins and Young entered the structure from the front of the building to investigate. Conditions were clear in the store, and there was no visible smoke or flames showing. They discovered light smoke near the electrical panel in the rear of the building, and radioed to Battalion 2 that they had a fire and were checking for extension. Acting Lieutenant Hudgins then radioed for Engine 3's driver to reposition the apparatus to the rear of the building.

Hudgins then radioed to Battalion 2, who had not yet arrived on the scene, that Engine 3 and Ladder 2 could handle the incident. Battalion 2 and Engine 1, the second due engine company, both went in service.

Original Assignment Dispatched

About one minute later, the crew from Engine 3 discovered additional fire in the building and requested the original assignment continue to the scene. Battalion 2 and Engine 1 both acknowledged and started back to the call.

The driver/pump operator of Engine 3 observed light smoke coming from the roof-line on side two as he repositioned to the alley on side three of the store. Hudgins and Young met him at the rear of the building, where heavier smoke was showing from the edge of the roof. The firefighters pulled two 1 3/4-inch attack lines off Engine 3. Firefighter Young used the first attack line to sweep the rear of the building, where flames had started to come from the roof-line at the top of the rear wall. Acting Lieutenant Hudgins donned his SCBA and entered the rear of the building with the second attack line. Engine 3's driver directed Firefighter Young to assist Acting Lieutenant Hudgins, who was inside the building. Young closed the nozzle on his attack line, placed it on the ground, and followed the first attack line into the rear of the building.

Battalion Chief's Arrival and Second Alarm

Approximately eleven minutes after the time of dispatch, Battalion 2 marked on the scene, observing light gray smoke at the decorative arches in front of the building and a light haze of smoke inside the structure. Less than one minute later, Battalion 2 radioed for a second alarm, reporting "flames showing," and requested police assistance with evacuating the exposure occupancies. Two additional engines were dispatched for the second alarm. The Battalion Chief then proceeded to evacuate the exposures on sides two and four of the auto parts store (Figure 4).

Hudgins radioed to Battalion 2 that they had a fire in the ceiling and needed an additional crew to don SCBAs and come inside with pike poles to pull ceiling. Battalion 2 acknowledged the transmission and radioed that he had "a fire showing -- building fire showing from outside."

Engine 3's driver radioed to Battalion 2 that he needed the second due engine company to lay a supply line to him at the rear of the building. Battalion 2 radioed to Engine 1 to confirm that they had understood the request.

Engine 1 and Ladder 2 Arrive, Third Alarm Called

Engine 1 marked on the scene approximately thirteen minutes after dispatch. As they passed by the front, a firefighter on Engine 1 noticed smoke and some fire in the front of the store, rolling down to the floor, and observed a strong draft pulling air into the building. Engine 1 then proceeded to the rear to reverse lay a supply line from Engine 3 and establish the water supply.

Once in the rear, the firefighter and the officer from Engine 1 observed one attack line from Engine 3 that stretched into the back door of the Advance Auto Parts Store. Heavy smoke was visible inside and fire was coming from the roof in the rear of the store. The officer instructed Engine 3's driver to set up a 2 1/2-inch attack line. In the time it took to prepare this line, the firefighter from Engine 1 reported that the rear entrance to the building had become fully involved with fire, and the attack line into the rear door had burned through. Engine 3 ran out of water at this time and was unable to charge the 2 1/2-inch attack line. Engine 1's officer attempted to contact Battalion 2 by radio, but was unable to get through.

Simultaneously, Ladder 2 was arriving in the front of the building and taking a position on side two of the store. While the driver was setting up the aerial to go to the roof, the officer and firefighter from Ladder 2 were preparing to enter the front of the building to assist Engine 3's crew, but the officer noted heavy smoke inside the store and a large volume of air being drawn in through the front doors.

He determined that it was unsafe for his crew to enter the building and advised his driver to set up for defensive operations. Ladder 2's officer then met with Battalion 2 in front of the building and suggested that a third alarm might be needed due to the growing size of the fire.

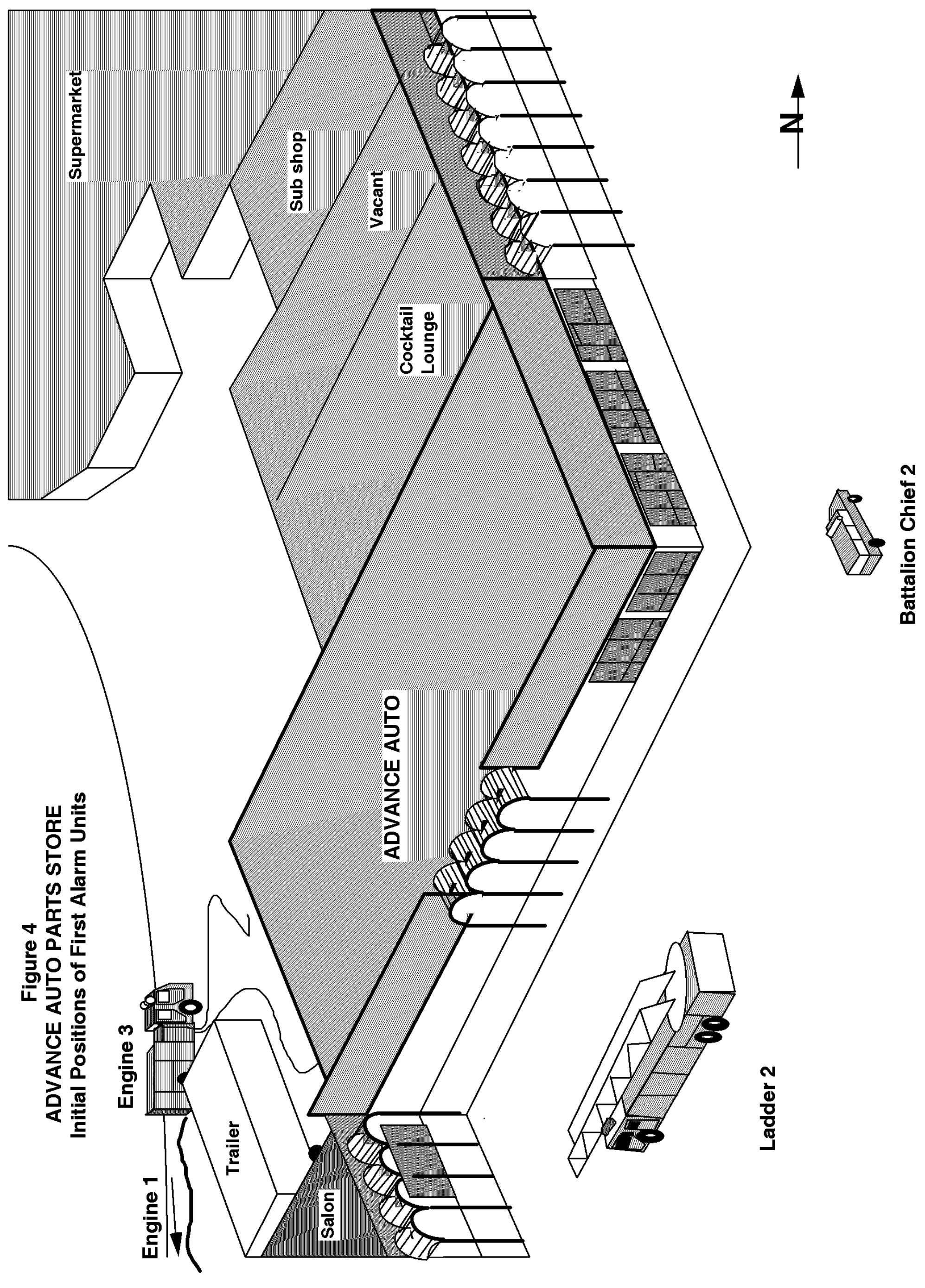


Figure 4
ADVANCE AUTO PARTS STORE
Initial Positions of First Alarm Units

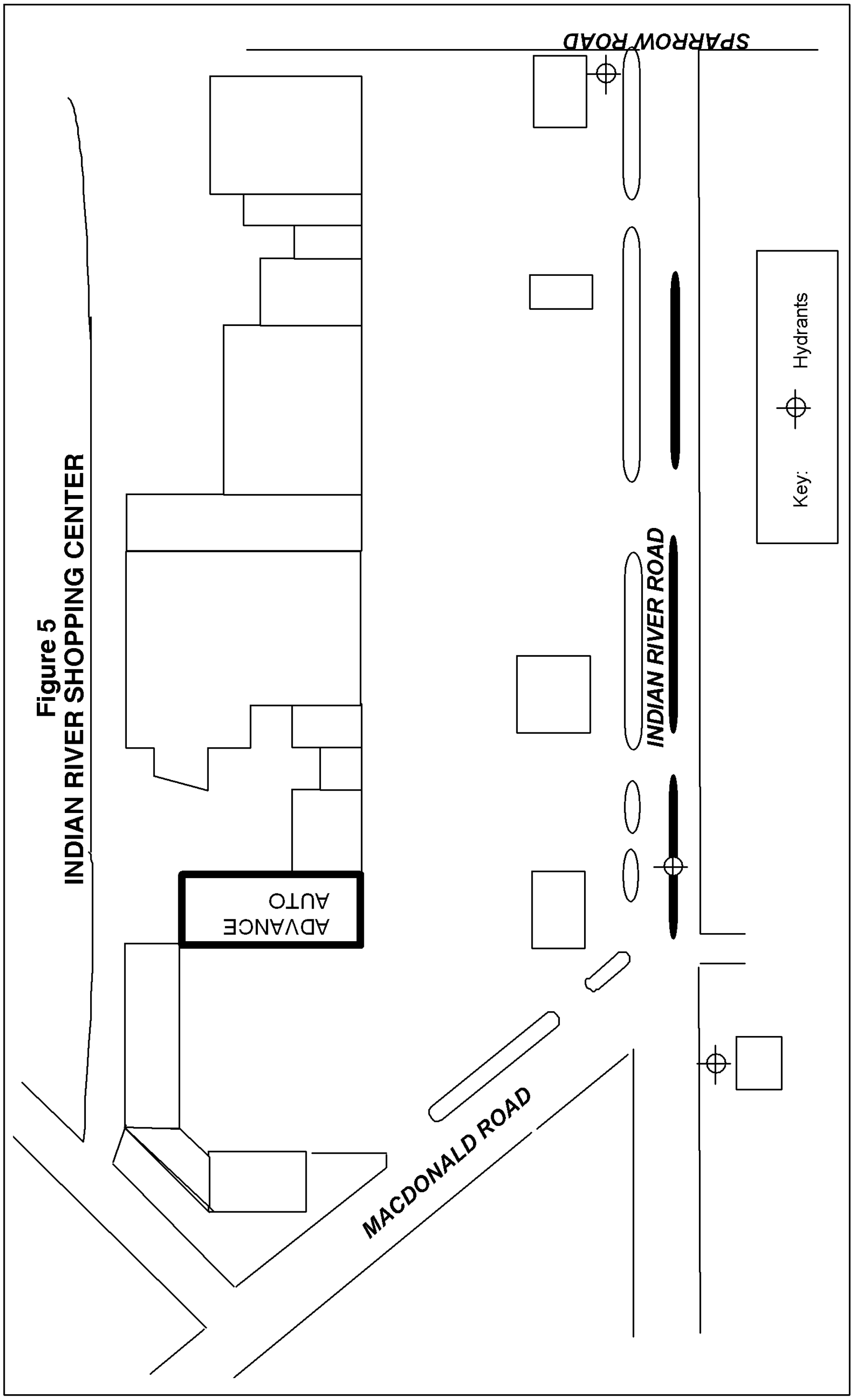


Figure 5
INDIAN RIVER SHOPPING CENTER

14

About eighteen minutes after dispatch, Battalion 2 reported "a working commercial building fire fully involved." Within the next minute, he transmitted a request for a third alarm. At this time, Engine 1 was still in the process of laying five-inch hose from Engine 3 to a fire hydrant located at the far corner of Indian River Road and MacDonald Road.

Engine 3 Reports They Are Trapped, Roof Collapses

At approximately 11:49 a.m., almost 20 minutes after the initial dispatch time, Hudgins radioed that he and Young could not get out of the building. Battalion 2 radioed back that he could not understand their transmission. Hudgins then radioed that they needed someone to come to the front of the building and get them out. Again unable to understand their transmission, Battalion 2 radioed for any unit on the fireground to advise him if they heard the message that was transmitted. Engine 4 responded that they were unable to copy the transmission. Engine 14 then marked on the scene and was instructed by Battalion 2 to lay a supply line to the front of the building. Battalion 1, enroute to the fire on the second alarm, radioed to Battalion 2 that it sounded like someone was trapped inside. Battalion 3, also enroute, radioed that he would be on the scene momentarily and would assist.

At this time, Ladder 2's crew was setting the outriggers and preparing to elevate their aerial ladder for defensive operations. In the short time it took to accomplish the stabilization of the ladder truck, the front of the store became fully involved, the building contents ignited, and the roof collapsed. Due to the radiant heat, Ladder 2 was forced to retract their outriggers and reposition to a safer defensive position on side one of the structure, and set up the aerial again. Ladder 2's crew did not hear Engine 3's transmission that they were trapped.

Simultaneously, Engine 1 ran out of supply line about 200 feet short of the hydrant. Engine 2, responding on the second alarm, picked up the hydrant that Engine 1 was attempting to reach and laid a supply line to side one. The driver of Engine 1 attempted to contact his officer by radio to advise that he could not reach the hydrant, but could not get through due to heavy radio traffic. He parked the engine in the roadway, donned his SCBA, and went to the rear of the building to report to his Captain and rejoin his crew. Battalion 3 arrived on side one about this time and radioed for all companies to switch to channel two, an alternate fireground tactical frequency.

15

Driven by the northerly wind and the draft created by the burning contents of the structure, the fire at the rear had grown in such intensity that personnel were forced to move Engine 3. Assisted by employees of the power company, Engine 3 was moved back away from the rear of the building. At 11:55 a.m., about 26 minutes after dispatch, the Captain of Engine 1, with his crew at the rear of the building, confirmed to Battalion 2 that "I got men on the inside from Engine 3, and the lines have been burned. I do not know their status, and we still have no water to go in after them."

Battalion 3 met with Battalion 2 and discussed that they may have lost a crew inside. Battalion 3 assumed command and Battalion 2 went to the rear of the building to coordinate rescue efforts. There, Battalion 2 met with the Captain from Engine 1.

By this time, the building was fully involved and no rescue efforts could be mounted until the fire was knocked down. Officers at the front and the rear attempted to conduct a personnel accountability report (PAR) to determine who was missing and where they might be located. An engine company responding on mutual aid from the Virginia Beach Fire Department was flagged down, connected to Engine 1's supply line, and completed the water supply to a hydrant behind the shopping center within the City of Virginia Beach. Engine 3 was forced to move back once again, and the supply line was disconnected from Engine 3 and used to supply water to Engine 4, a telesquirt that was positioned for defensive operations at the rear.

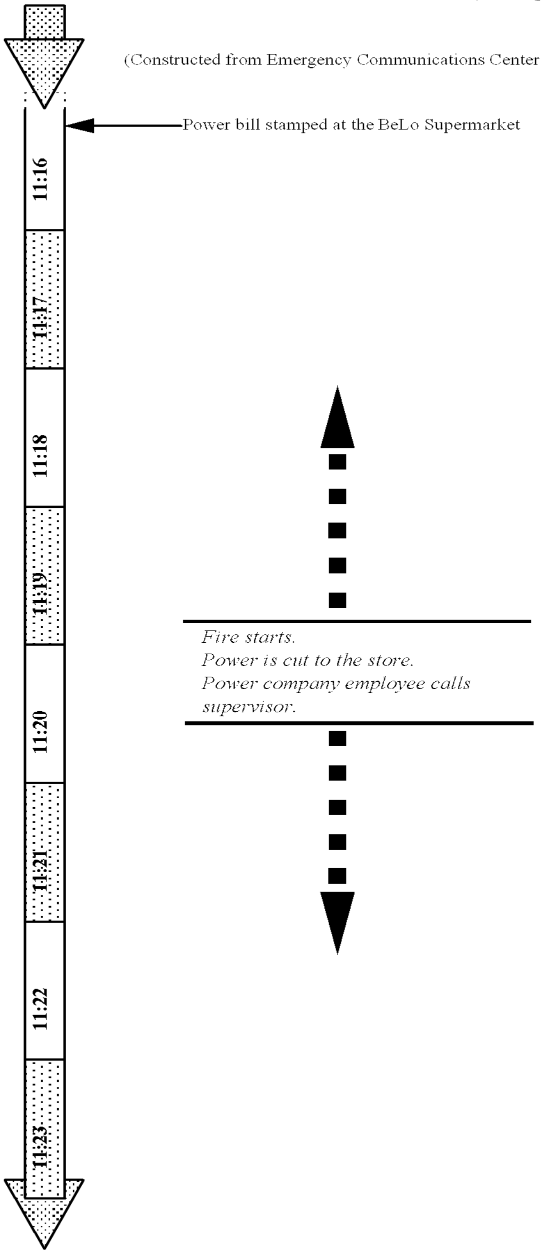
Extinguishment and Body Recovery

The fire spread to the attic of the exposures on side two and was held in check by the fire wall on side four of the building. The fire was brought under control as the contents of the auto parts store burned off and several aerial streams were put into operation.

After the fire was extinguished, a search for the missing firefighters was initiated. After the bodies of the firefighters were located, they were packaged and removed from the fire building by members of the Virginia Beach Fire Department, and transferred by members of the Chesapeake Fire Department to medic units. The body recovery was supervised by the Chesapeake Fire Department Fire Marshal's Office and documented. An investigation was immediately started by the Chesapeake Fire Department Fire Marshal.

TIMELINE OF EVENTS

(Constructed from Emergency Communications Center Audio Tapes and Witness Interviews)



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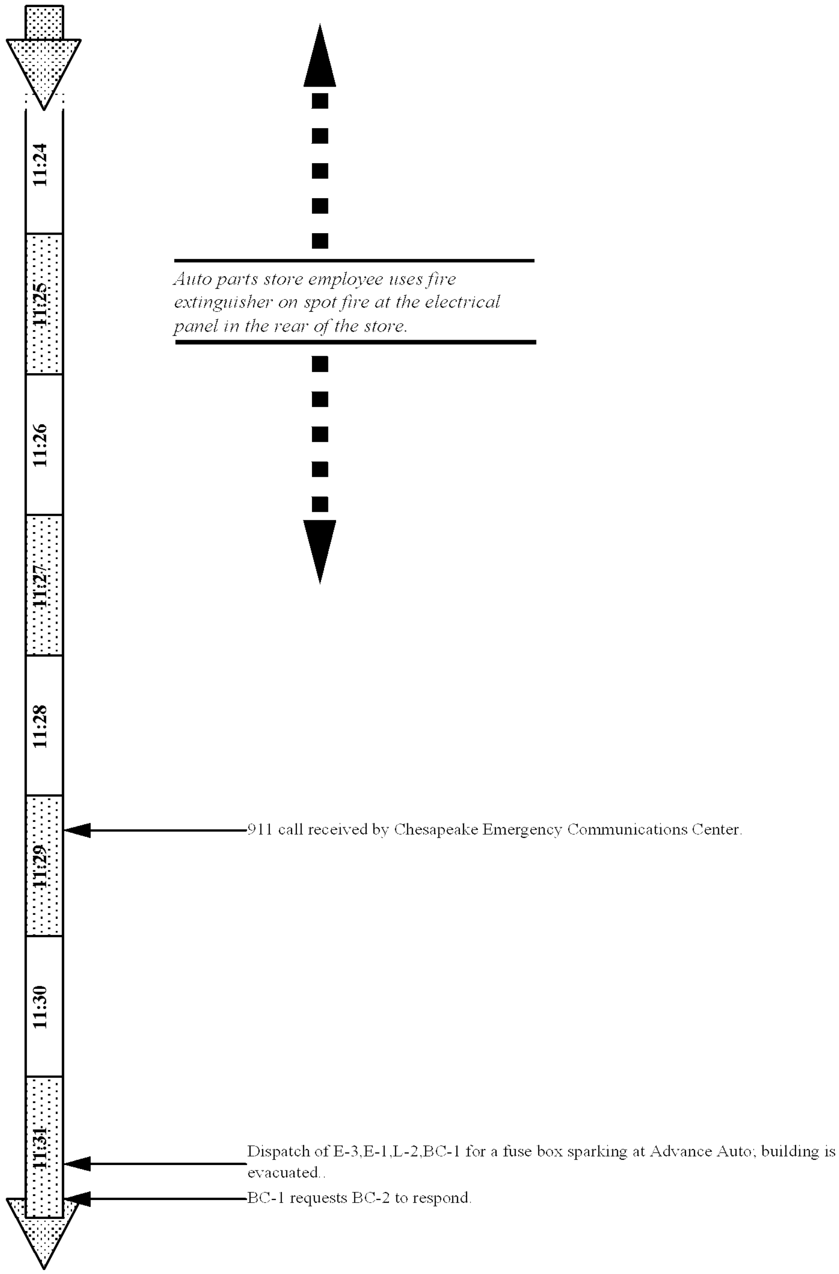
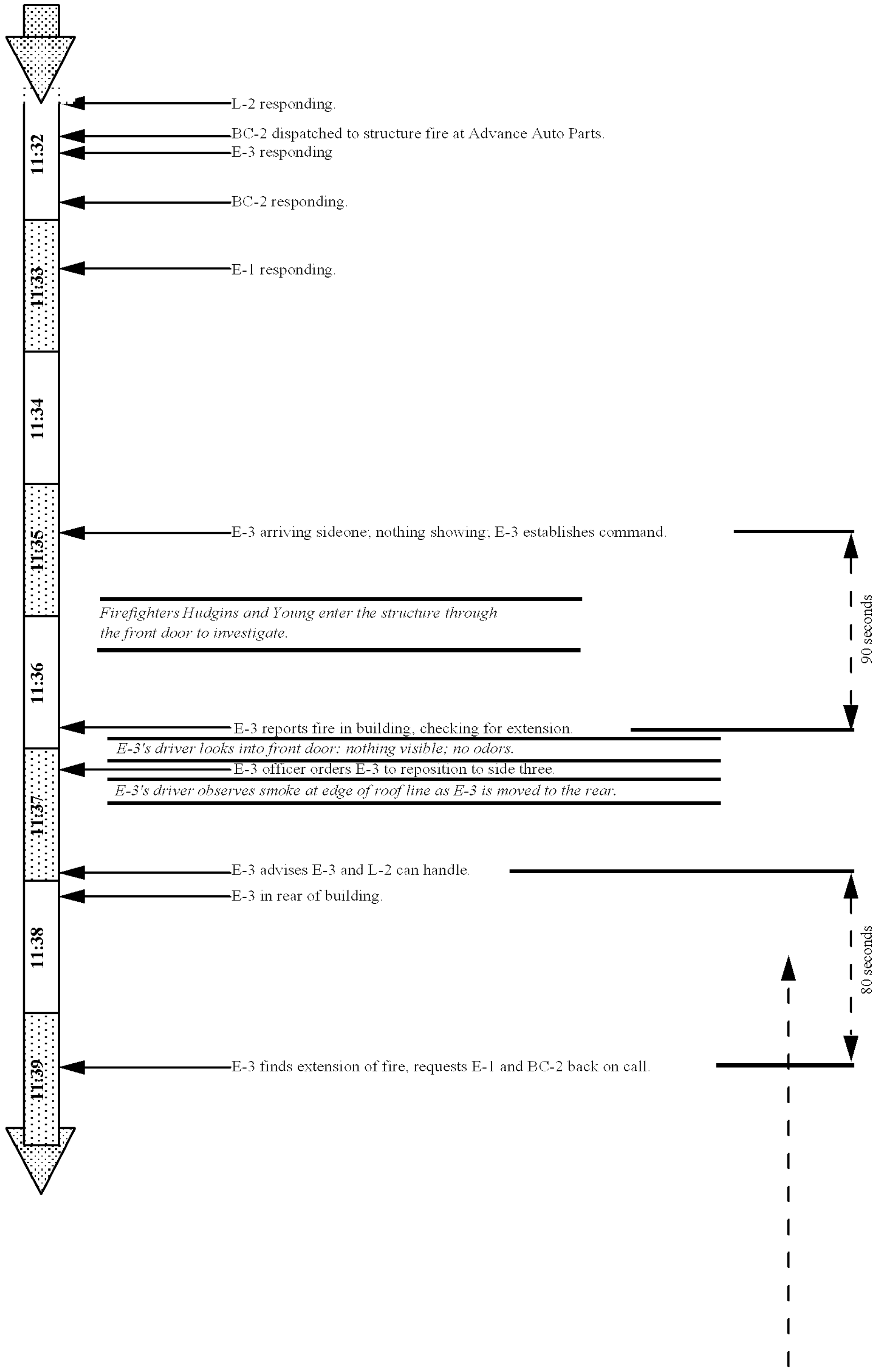
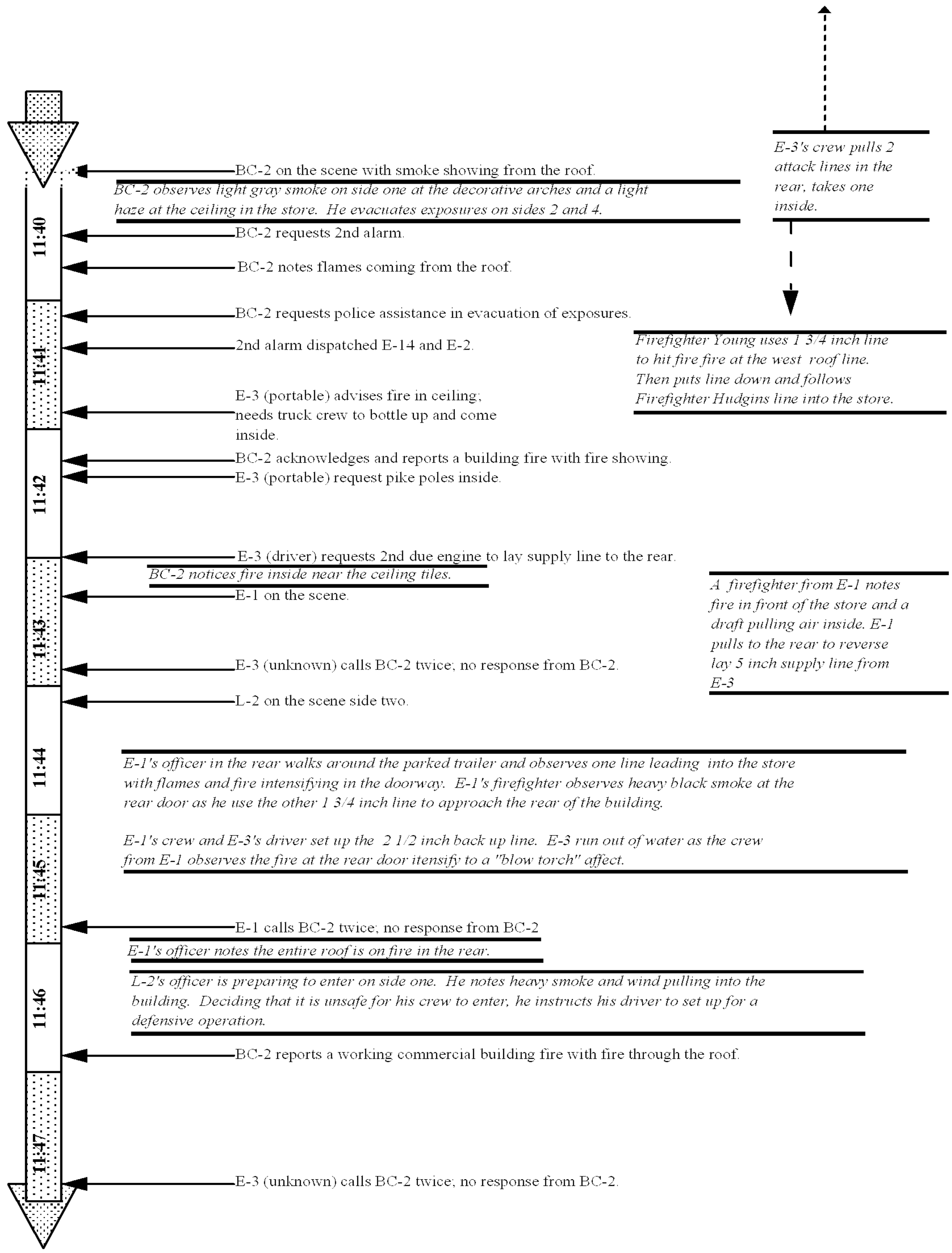

11:24
11:25
11:26
11:27
11:28
11:29
11:30
11:31
Auto parts store employee uses fire extinguisher on spot fire at the electrical panel in the rear of the store.
911 call received by Chesapeake Emergency Communications Center.
Dispatch of E-3,E-1,L-2,BC-1 for a fuse box sparking at Advance Auto; building is evacuated..
BC-1 requests BC-2 to respond.

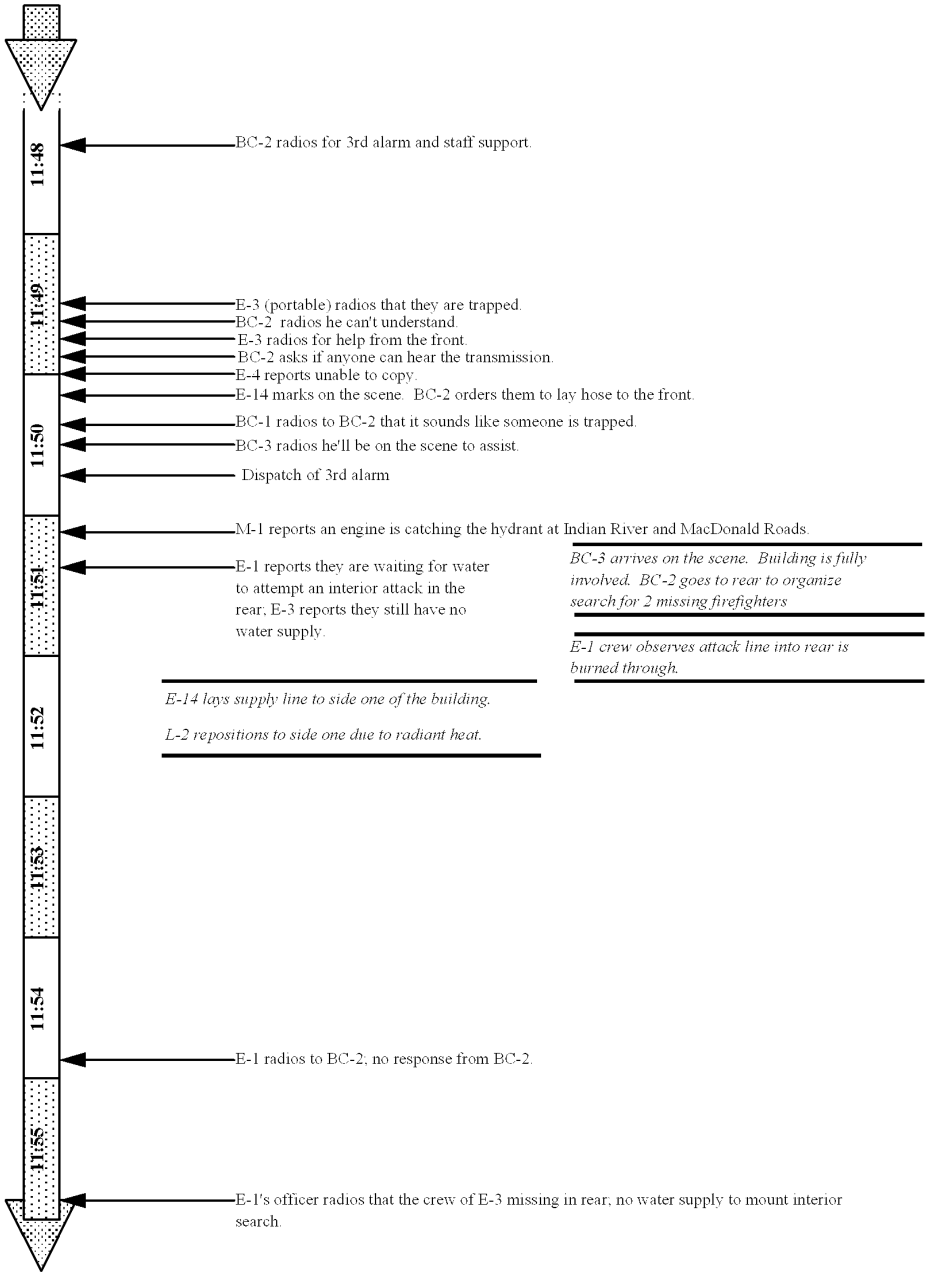
18

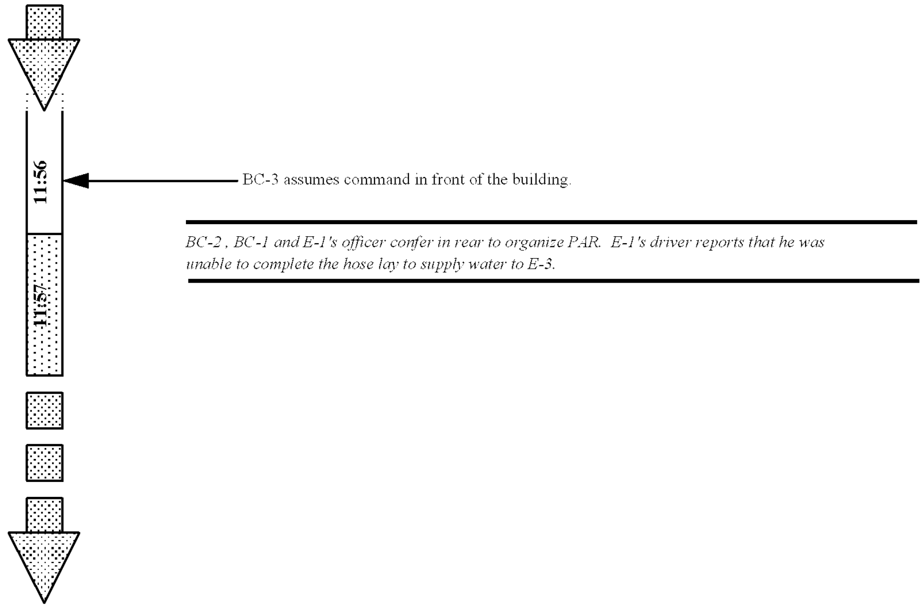

L-2 responding.
11:32
BC-2 dispatched to structure fire at Advance Auto Parts.
E-3 responding
BC-2 responding.
11:33
E-1 responding.
11:34
11:35
E-3 arriving sideone; nothing showing; E-3 establishes command.
Firefighters Hudgins and Young enter the structure through the front door to investigate.
90 seconds
11:36
E-3 reports fire in building, checking for extension.
E-3's driver looks into front door: nothing visible; no odors.
E-3 officer orders E-3 to reposition to side three.
11:37
E-3's driver observes smoke at edge of roof line as E-3 is moved to the rear.
E-3 advises E-3 and L-2 can handle.
E-3 in rear of building.
11:38
80 seconds
11:39
E-3 finds extension of fire, requests E-1 and BC-2 back on call.

19


11:40
11:41
11:42
11:43
11:44
11:45
11:46
11:47
BC-2 on the scene with smoke showing from the roof.
BC-2 observes light gray smoke on side one at the decorative arches and a light haze at the ceiling in the store. He evacuates exposures on sides 2 and 4.
E-3's crew pulls 2 attack lines in the rear, takes one inside.
BC-2 requests 2nd alarm.
BC-2 notes flames coming from the roof.
BC-2 requests police assistance in evacuation of exposures.
2nd alarm dispatched E-14 and E-2.
Firefighter Young uses 1 3/4 inch line to hit fire fire at the west roof line. Then puts line down and follows Firefighter Hudgins line into the store.
E-3 (portable) advises fire in ceiling; needs truck crew to bottle up and come inside.
BC-2 acknowledges and reports a building fire with fire showing.
E-3 (portable) request pike poles inside.
E-3 (driver) requests 2nd due engine to lay supply line to the rear.
BC-2 notices fire inside near the ceiling tiles.
E-1 on the scene.
A firefighter from E-1 notes fire in front of the store and a draft pulling air inside. E-1 pulls to the rear to reverse lay 5 inch supply line from E-3
E-3 (unknown) calls BC-2 twice; no response from BC-2.
L-2 on the scene side two.
E-1's officer in the rear walks around the parked trailer and observes one line leading into the store with flames and fire intensifying in the doorway. E-1's firefighter observes heavy black smoke at the rear door as he use the other 1 3/4 inch line to approach the rear of the building.
E-1's crew and E-3's driver set up the 2 1/2 inch back up line. E-3 run out of water as the crew from E-1 observes the fire at the rear door itensify to a "blow torch" affect.
E-1 calls BC-2 twice; no response from BC-2
E-1's officer notes the entire roof is on fire in the rear.
L-2's officer is preparing to enter on side one. He notes heavy smoke and wind pulling into the building. Deciding that it is unsafe for his crew to enter, he instructs his driver to set up for a defensive operation.
BC-2 reports a working commercial building fire with fire through the roof.
E-3 (unknown) calls BC-2 twice; no response from BC-2.

20


11:48
BC-2 radios for 3rd alarm and staff support.
11:49
E-3 (portable) radios that they are trapped.
BC-2 radios he can't understand.
E-3 radios for help from the front.
BC-2 asks if anyone can hear the transmission.
E-4 reports unable to copy.
E-14 marks on the scene. BC-2 orders them to lay hose to the front.
11:50
BC-1 radios to BC-2 that it sounds like someone is trapped.
BC-3 radios he'll be on the scene to assist.
Dispatch of 3rd alarm
11:51
M-1 reports an engine is catching the hydrant at Indian River and MacDonald Roads.
E-1 reports they are waiting for water to attempt an interior attack in the rear; E-3 reports they still have no water supply.
BC-3 arrives on the scene. Building is fully involved. BC-2 goes to rear to organize search for 2 missing firefighters
E-1 crew observes attack line into rear is burned through.
11:52
E-14 lays supply line to side one of the building.
L-2 repositions to side one due to radiant heat.
11:53
11:54
E-1 radios to BC-2; no response from BC-2.
11:55
E-1's officer radios that the crew of E-3 missing in rear; no water supply to mount interior search.


11:56
BC-3 assumes command in front of the building.
BC-2 , BC-1 and E-1's officer confer in rear to organize PAR. E-1's driver reports that he was unable to complete the hose lay to supply water to E-3.
11:57

ANALYSIS

Fire Cause and Flame Spread

The fire was caused by the electrical short created when the power company truck struck the power line to the building. Investigation by the City of Chesapeake Electrical Inspector after the fire revealed that the meter contained wiring that appeared to have been tampered with and did not comply with the electrical code. Several connections at the meter had been double-lugged, connecting multiple wires to single terminals. Additional investigation by Virginia Power revealed that the building may have been improperly grounded, leading to numerous hot connections when the short circuit occurred. The main fuse did not trip at the breaker panel and the wiring on all three air handling units had been fused. This probably resulted in the ignition of multiple spot fires in the truss loft above the store.

It appears that the fires in the truss loft were still relatively minor when Engine 3 arrived, but the fire spread rapidly throughout the space due to the light wood construction. The wind drawn from the open doors at the front of the building also promoted rapid fire growth. This would have created a tremendous hidden fire in the wood truss loft area despite clear conditions inside the structure. Reports of heavy smoke and fire conditions on the roof at the same time Engine 3's crew was calling for pike poles and personnel to come inside are indications towards this scenario.

The interior of the auto parts store contained racks of auto parts and supplies, including oil, lubricants, rubber, and plastic parts. The contents were packed closely together and stored in tall racks near the ceiling. Once the fire had broken through the ceiling in the rear of the building, these contents would have quickly reached their ignition temperatures, creating flashover conditions in the rear of the store as the fire progressed, trapping the firefighters and forcing them to seek an exit at the front of the store.

Roof Collapse

The collapse of the pre-engineered truss roof occurred approximately 21 minutes after the time of dispatch, and within 35 minutes of the initial accident, that caused the electrical short. The structure appears to have collapsed within 10 to 12 minutes after the truss space became heavily involved. The collapse of similar truss assemblies under fire conditions within this time period has been well documented.

Post-incident investigations indicate that this truss assembly may have been weakened by deficiencies in the connection of the trusses to the beam on the east side of the building. Also, the dead load of the three air conditioning units may have contributed to the rapid failure of the roof.

Reports from firefighters on the scene indicate that a partial failure of the truss assembly may have occurred in the rear of the building, followed shortly by the failure of the entire roof assembly. It is possible that the crew of Engine 3 was trapped by the partial collapse of the roof in the rear, or by the collapse of racks containing auto parts in the building, or by the rapid spread of the fire and smoke which had broken through the ceiling. It is also possible that a combination of these events occurred simultaneously. The failure of the entire roof assembly and complete involvement of the interior of the building with fire took place within one minute after the firefighters radioed for help, before any reaction to assist them could take place.

Cause and Nature of Firefighter Deaths

The cause of the deaths of Firefighters John Hudgins and Frank Young can be attributed to becoming caught and trapped by rapidly spreading fire and falling debris, followed immediately by the collapse of the trussed roof. Autopsies determined the nature of their deaths as burns from direct flame exposure. The autopsies indicated that Firefighter-Specialist Young, who was found with his mask on, had a blood carboxyhemoglobin level of 11 percent. Firefighter-Specialist Hudgins, found without a mask on, had a blood carboxyhemoglobin level of 25 percent.

Fire Operations

***Initial Response* -** The first alarm assignment was overwhelmed by the situation, the circumstances, and the unusual sequence of events that occurred at this incident. It is evident that a larger force would have been needed to initiate an effective offensive or defensive operation for a working fire in a 6,000 square foot commercial occupancy, with attached exposures on two sides, with or without the unusual complications. The response of two engine companies, one ladder company and a battalion chief, provided a total of only 10 personnel on the initial assignment. The individual companies, which responded with three person crews, had limited capabilities to perform tasks independently.

This incident generated only a single call to 9-1-1 reporting an electrical problem. In most communities only a small percentage of potential structure fire responses actually turn out to be working fires and most of those incidents can be identified from the information that is received from callers. It is a common practice for many fire departments to send a limited initial response to possible structure fires and to dispatch additional companies if the first arriving units report a working fire. Many fire departments also dispatch additional companies if multiple calls are received or the information indicates a probable working fire.

In this case, there was no indication of a working structure fire when Engine 3 arrived. Response times for the second arriving engine and the ladder company were relatively long due to the location of the incident, which was in a remote point within the city limits of Chesapeake. The second due engine was further delayed by two to three minutes as a result of being canceled, then redispatched. As a result, Engine 3 was on the scene with only three personnel for eight minutes before any other companies arrived.

The response times for multiple alarm companies responding from other Chesapeake stations were also long, due to the location of the fire. The first of these companies was just arriving when the roof collapsed. After the first due engine, the next closest companies were located in the City of Virginia Beach; however, these companies were requested on mutual aid only after the second alarm.

Offensive Attack - Engine 3 had been on the scene for approximately four minutes before the crew realized that there was a working fire above the ceiling and the officer reinitiated the response of the second due engine and the battalion chief. At this point, the fire was spreading rapidly within the truss loft. The company initiated an interior offensive attack on the fire in the truss space of the auto parts store. The first preconnected line from Engine 3 was operated from the exterior, where flames had broken through the panels that enclosed the trusses. This line was operated for approximately one minute before the second line was advanced into the rear section of the auto parts store.

The battalion chief arrived and assumed command of the incident at about the time the line was being taken inside the building to begin the interior attack. At this point the fire in the truss space was growing rapidly and there were only four personnel at the scene: the officer and firefighter from Engine 3 were operating the line inside the building, the pump operator was outside at the rear, and the battalion chief had assumed command of the incident at the front of the shopping center. The engine officer, who was operating the hose line inside, could not see how quickly the fire was developing above the ceiling. The pump operator knew that the officer and firefighter were inside, but his concern was directed toward the need for a supply line, because Engine 3 was still operating on tank water. Their reserve apparatus did not have a functioning tank gauge, which made it impossible to determine how much water was left in the tank.

The battalion chief was alone at the front of the complex, where he could see heavy smoke and flames coming from the roof at the rear of the auto parts store. The visible fire conditions prompted him to transmit a second alarm almost immediately after assuming command. He knew that Engine 3 was operating at the rear, but he was not specifically aware of who was inside or what conditions they were encountering at that time. The need to evacuate exposures conflicted with the need for a strong command presence at this critical stage of the incident.

Engine 1 was committed to the rear as soon as it arrived in order to establish the water supply for Engine 3. While the captain and the firefighter from Engine 1 hooked up the supply line to Engine 3, the driver began to lay a 5-inch supply line to a hydrant. Engine 1’s officer could see that Engine 3's line went inside the building and recognized the need for a 2-1/2 inch back-up line. By the time the back-up line was ready, flames were issuing from the door where the attack line had entered, but the back-up line could not be operated before the supply line was charged. No one at the rear anticipated or was aware of the problem of Engine 1 running out of hose before reaching a hydrant.

The offensive attack also required support functions, which are usually performed by ladder companies. The multiple support functions that are required for a fire in a building of this size would normally require at least two ladder companies, however only one ladder company was dispatched on the initial assignment.

Before Ladder 2 arrived, Engine 3 had requested assistance inside the store to open ceilings and expose the fire. Upon arrival, the officer and firefighter from Ladder 2 prepared to enter, but by the time they reached the front door, the smoke and fire conditions inside the auto parts store made entry impossible. The driver, who remained outside, began to set up the aerial ladder to reach the roof; however, no additional personnel were available to provide ventilation or perform other outside functions at that time. Conditions were deteriorating quickly at that point, making it necessary to reposition the ladder truck for defensive operations. The officer and firefighter had to assist the driver in moving the vehicle. There was no one immediately available to assist the two firefighters inside the building, and their request for help went unheard by crews on the scene.

Incident Management - The Chesapeake Fire Department has a documented incident command system which is in accordance with national incident management practices and guidelines; however, incident management was disorganized prior to the collapse of the roof. Several factors affected the management of this incident, including the difficulty in establishing water supply, calling for additional resources, and difficulty in communicating with units on the fireground while additional units were dispatched on the same frequency. The rapid fire spread and failure of the trussed roof assembly emphasized the need for command to be established and coordinated early in the incident, and for clear strategic goals to be determined, prioritized and carried out tactically under the supervision of sector commanders.

Operational Risk Management

There are several important issues related to operational risk management at this incident. Every fire officer must be prepared to make these types of critical decisions based on a risk management assessment of each operational situation. When examining the decisions that were made at this incident, it is important to consider the information that was available to the individuals who had to make those decisions at the time.

The first risk management issue relates to the decision to initiate an interior attack; the officer in charge of Engine 3 had to decide on an appropriate action for the situation, based on his assessment of the risks that were involved. The second risk management issue relates to the failure to evacuate the building before the interior attack crew became trapped.

Was it appropriate for Engine 3 to initiate an interior attack with the number of personnel on the scene?

The analysis of this incident has caused a significant discussion over the number of personnel who are required to be on the scene of a structure fire to initiate an interior attack. NFPA 1500, the Standard for a Fire Department Occupational Safety and Health Program, 1992 edition, states that a minimum of two personnel must enter and work together as a team inside a hazardous area and that at least one individual must remain outside and must maintain an awareness of the location and function of the entry team members. This requirement could be satisfied with the three crew members on Engine 3, the officer and firefighter inside and the pump operator outside.

A tentative interim amendment (TIA) to NFPA 1500, adopted in 1993, added a requirement that a minimum of 4 members must be assembled at the scene before initiating an interior attack at a working structure fire, which is defined as a fire that requires the use of breathing apparatus and at least a 1-1/2 inch attack line. This would be at least nominally satisfied by addition of the battalion chief, who arrived at about the same time as the attack line was being taken into the building.

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor issued an interpretation on May 1, 1995, which is based in part on NFPA 1500 and in part on the OSHA standard for respiratory protection 29 CFR 1910.134. This interpretation has been referred to as the "2-in/2-out rule." It makes reference to the NFPA requirement for a minimum of two personnel to work together inside a hazardous area - using a "buddy system." It also refers to a requirement in the OSHA regulation for "men" to remain outside with the capability of rescuing workers who are using respirators in an atmosphere that is immediately dangerous to life and health (IDLH).

The NFPA and OSHA requirements could be satisfied with four personnel on the scene, if two members remained outside while two entered the hazardous area. To meet all of the requirements the personnel outside would have to account for and maintain communications with the personnel inside, and would have to be prepared to assist or rescue them.

The federal OSHA interpretation was issued in the form of an enforcement policy directive to agencies that enforce the federal OSHA regulations. The Virginia Department of Labor and Industry enforces these regulations under a "state plan agreement" with the U.S. Department of Labor. At the time of the incident, the Virginia Department of Labor and

Industry had not announced its intentions with regard to an enforcement policy for fire departments in Virginia or taken any enforcement actions.

***Accountability* -** The Chesapeake Fire Department had a standard operating procedure and had practiced the use of a personnel accountability system, but it was not implemented until after the roof collapse occurred. The Chesapeake Fire Department uses a system of magnetic helmet shields and plastic name tags. Each firefighter uses a helmet shield for the unit he is assigned to for the shift. The plastic name tags are placed on a common 2" by 5" Velcro strip, or "passport" in each unit, and are then passed on to the sector officers or incident command post at the emergency scene. The system is used by all departments in the Tidewater, Virginia region. The Chesapeake Fire Department's Incident Command System manual also provides for the establishment of an Accountability Officer to administer the Personnel Accountability System (PAS) at emergency incidents.

Since no sector officers were initially assigned to the rear of the building at E-3's location, the passport would have been inaccessible for Battalion 2, at the front of the building. CFD PAS policy states that "passports and tracking of those companies should be delegated to a sector officer as soon as possible." Due to the limited number of personnel on the fireground, nobody was available to be assigned to this rear sector until after the firefighters became trapped. The policy also calls for the dispatcher to use an alert tone and notify the incident commander after every twenty minutes of elapsed time in a working incident. This notification was not made. A personnel accountability report (PAR) is also called for at any report of a missing or trapped firefighter, any change from offensive to defensive modes of operations, or any sudden hazardous event at the incident. An evacuation order was not issued when heavy fire became evident from the roof, nor was a PAR called for during the set up of defensive operations or at the time of the roof collapse.

The CFD's 14 page policy on fireground safety clearly states that "Ground crews must be notified and evacuated from interior positions before ladder pipes go into operation." The policy also calls for the establishment of a Safety Sector. A specific section of this policy is titled "structural collapse" and states that "under fire conditions light weight wood truss and bar joist roof construction can be expected to fail after minimal fire exposure," and goes on to state that "It is the principal command responsibility to continually evaluate and determine if the fire building is tenable for interior operation."

The battalion chief knew from the radio reports that the officer and possibly one or more crew members from Engine 3 were operating inside the building. He could not see the entry point and could not maintain accountability for who was inside or outside at any point in time.

The pump operator knew specifically that the officer and firefighter from Engine 3 had entered the building, but from his vantage point he could not see the door where they had entered and could not be sure if they remained inside or came back outside or if anyone else entered through the back door. His attention was occupied with stretching the back-up line and attempting to obtain a water supply. He later stated that he assumed that the interior crew must have made their way out through the front of the building when the fire conditions became untenable.

It was not realized for several minutes after the roof collapsed that the officer and firefighter from Engine 3 were missing. It was impossible to conduct a search until the main body of fire was knocked down.

***Communications* -** Each firefighter on the entry team had a portable radio, but the radio traffic quickly overloaded the single channel that was available for fireground communications. The Chesapeake Fire Department tactical channel was the non-repeated side of the dispatch channel, which was being used to dispatch multiple alarm companies, direct move-up assignments, and for other emergency and non-emergency traffic. This made it impossible to maintain a reliable communications link with the entry team.

The incident commander did not have a clear channel to provide instructions or receive reports from the company officers on the scene. He had left his vehicle and was trying to size-up the situation and evacuate the adjoining occupancies, while using a portable radio to communicate. At least one radio channel should be dedicated to tactical operations at working incidents and someone outside should continuously monitor the tactical radio channel that is used by crews working inside a building or hazardous area.

The radio traffic also made it impossible for the driver of Engine 1 to advise his officer or the incident commander that he had run out of hose. This caused a major delay in completing the supply line for Engine 3, which also contributed to the tragic outcome of the incident.

***Rescue Capability* -** The pump operator and the battalion chief both had protective clothing and breathing apparatus available to enter the building, if they had known the entry team members were in trouble and needed assistance. The pump operator was occupied with the water supply problem, while the battalion chief was busy trying to evacuate the adjoining occupancies and direct the other responding units. However, even if they had been prepared to enter, it is very unlikely that they could have rescued the entry team from the burning interior.

The real rescue capability for the interior crew was Engine 1, which was preparing the 2-1/2 inch back-up line. The rear portion of the auto parts store was already in flames by the time this line was stretched, but it could not be operated until the supply line was charged. The entry team was cut-off from their point of entry and their hose line came through the area that was involved in the fire. Having run out of water, there was no chance for Engine 1's crew to mount a rescue attempt.

When should the interior crew have been ordered to evacuate the building?

The two firefighters inside the auto parts store may have been the only firefighters on the scene who could not see that the fire conditions were becoming critical, before they realized that they were trapped. At least eight other firefighters were present outside the building before this occurred and all of them recognized that the magnitude of the fire was increasing quickly. No one warned the entry team to evacuate or heard their request for assistance when they became trapped.

Flames were coming through the roof and the interior was heavily charged with smoke for several minutes before the roof collapsed. The critical risk created by the fire conditions should have been recognized, even if the personnel on the scene did not know about the lightweight roof construction. In spite of the obvious fire conditions, no one warned the interior crew to evacuate.

The battalion chief knew that Engine 3 was working inside because the officer had asked for a team to come inside with breathing apparatus and pike poles to pull the ceiling. The crew of Ladder 2 was responding to that request and had determined that they could not enter safely through the front. The crew of Engine 1 could see the line that went through the door and the fire conditions in the rear portion of the store. The pump operator assumed that his fellow crew members had made their way out through the front of the building.

Battalion 2 had reported that the building was becoming fully involved and requested the third alarm before the collapse occurred. Instead of concentrating on command functions, the battalion chief was personally involved in taking action, evacuating exposures on sides two and four.

Lightweight Construction **-** The critical risk factors of a working fire involving a lightweight truss roof assembly and an occupancy with an unusually high fire load were not recognized. Experience has shown that this type of roof can collapse after as little as 10 to 12 minutes of fire involvement. If the wood truss roof construction had been recognized or even suspected, the interior crew should have been ordered to evacuate the building immediately.

Recognition of the wood truss roof hazard would have required prior knowledge of the building details or reference to a pre-fire plan, since it could not be determined from visual observation at the scene of the fire. The existing pre-fire incident plan was available in a ring binder on Engine 3, but was not referenced by the crew on the response to the fire.[2]

It appears that by the time the inside crew realized they were in trouble and requested assistance, it would have been too late for anyone to rescue them, even if a rapid intervention crew had been standing-by outside the building. The entire roof collapsed very shortly after their message requesting assistance was transmitted. Their request for a crew to come in from the front of the building suggests that they initially became trapped by the fire which cut-off their path to the rear doors. This may have resulted from a partial roof collapse in the rear section of the building or from a ceiling failure which caused the highly combustible contents at the rear of the auto parts store to become involved in the fire. The major part of the roof collapsed within a minute after they reported that they were trapped and requested assistance.

[2] The pre-fire plan for the building incorrectly identified the wood truss roof structure as steel truss, but still may have provided valuable information and forewarned the firefighters that they were under a trussed roof. During its inquiry, the Chesapeake Fire Department determined that John Hudgins had inspected the store two years earlier as part of an existing CFD company inspection program that requires all companies to inspect every commercial occupancy within their first response area each year.

Safety Equipment

All Chesapeake firefighters wear NFPA compliant turnout gear, including PBI/Kevlar turnout coats, rubber boots, protective hoods, helmets, gloves, and SCBA with PASS devices.

SCBA **-** The SCBA worn by Hudgins and Young were both NFPA compliant MSA brand Ultralite II models, with 1/2 hour air bottles. The SCBA were sent to NIOSH for testing after the incident.

Turnout Gear - The turnout gear worn by Hudgins and Young was damaged by the fire conditions, which far exceeded the protective capabilities of the suits due to direct flame exposure. Parts of the protective ensemble underneath the firefighters' bodies were intact. The remains of the protective clothing were secured by the Chesapeake Fire Marshal and examined after the fire. No defects were discovered.

PASS Devices **-** Hudgins and Young both wore PASS devices. Due to the high heat conditions, these units melted when the firefighters were killed, and it was impossible to determine whether they were in the on, off, or alarm position.

LESSONS LEARNED AND REINFORCED

This fire reinforced many operational issues that are essential to safe and effective firefighting operations. (Specific changes made by the Chesapeake Fire Department in response to this fatal fire are listed in Appendix C.)

1. RISK ASSESSMENT is the primary responsibility of the incident commander.

This incident presented a very high risk to the firefighters who were attempting to make an interior attack. However, the risk factors were not recognized and the interior crew was not directed to abandon the building. Risk assessment should be a continual process, particularly when a situation is changing very quickly.

2. ACCOUNTABILITY is an essential function of the Incident Command System.

The location and operation of the initial attack crew was not tracked according to the incident command system that was in effect at the time of the fire. The system must keep track of the location, function, status, and assignment of every individual unit or company operating at the scene of an emergency incident. In order to be effective, the accountability process must be routinely initiated at the beginning of every incident, and updated as the incident progresses and units are reassigned to different tasks.

3. TACTICAL RADIO CHANNELS are essential for firefighter safety.

The fireground operations were conducted on the same radio channel as the routine dispatch and transfer of additional units, hampering the fireground communications during the important early stages of the incident. Designated radio channels should be set aside specifically for communications between the incident commander and the units operating at the scene of an incident. The exchange of information, orders, instructions, warnings, and progress reports is essential to support safe and effective operations. Tactical channels should be assigned early and routinely to avoid the confusion that occurs when units that are already working are directed to switch to a different radio channel.

4. FIRE OPERATIONS must be limited to those functions that can be performed safely with the number of personnel that are available at the scene of an incident.

The initial response to this incident did not provide enough resources to safely initiate an effective interior attack for the situation that was encountered. The first arriving company initiated interior operations that could not be adequately performed or supported with the limited number of personnel at the scene or responding. The delayed arrival of back-up companies increased the risk exposure of the first due company. The situation called for a more conservative initial attack plan and/or an early retreat when the magnitude of the fire became evident.

5. WATER SUPPLY is a critical component of a safe and successful operation.

The failed attempt to establish an adequate and reliable water supply for the interior attack was a critical problem at this incident. This task occupied the second due engine company, which was needed to provide either a back-up hose line to support the interior attack or a rapid intervention crew.

6. LIGHTWEIGHT WOOD TRUSS CONSTRUCTION is prone to rapid failure under fire conditions.

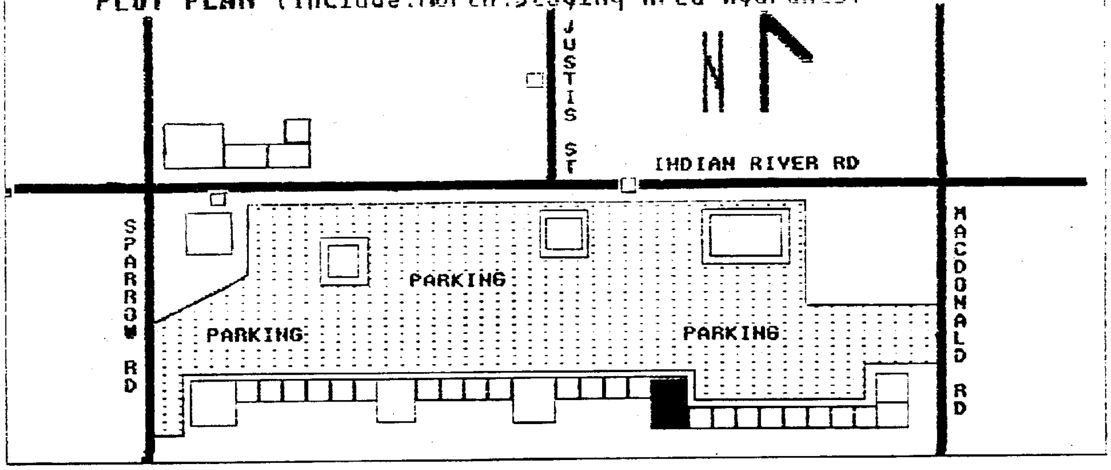
If the construction of the building had been known or recognized, the early failure of the roof structure should have been anticipated and the interior crew should have been withdrawn. This requires pre-fire planning to identify high risk properties and a reliable system to label the building or to inform the responding units of the risk factors of the building. It is usually difficult or impossible to make this determination when the building is burning.

APPENDIX A

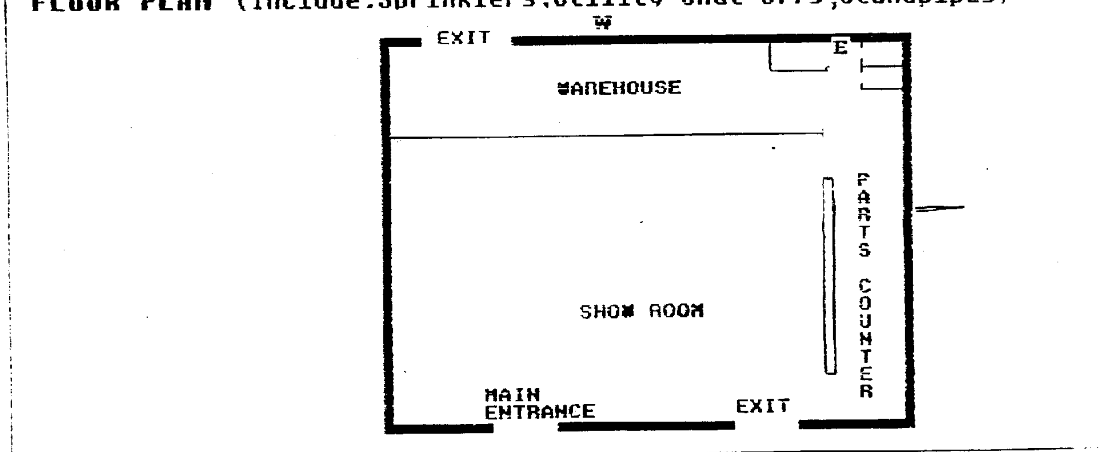
Pre-Fire Plans

WATER	SUPPLY LOCATION	COLOR	FT.
1st	4330 INDIAN RIVER RD (CENTER OF ROAD)	GREEN	700
2nd	4301 INDIAN RIVER RD	YELLOW	1000+
3rd	1016 JUSTIS ST.	YELLOW	1000+

PLOT PLAN (Include:North,Staging Area Hydrants)



FLOOR PLAN (Include:Sprinklers,Utility Shut-offs,Standpipes)



REVIEWED BY: ______________________ Capt. J. Randy Ferguson

BATTALION CHIEF — STATION CAPTAIN

DATE OF LAST UPDATE: 4-25-94 DATE OF INSPECTION: 4-25-94

ADDRESS: 4345 INDIAN RIVER RD PREMISE: 2462

APPENDIX B

Communication Center Transcripts

Page 5
Dispatch Tapes Transcription
Case No. I9603073

1140	Battalion Two:	Battalion Two is on the scene. Smoke showing from the roof.
1140	Dispatch:	Okay, Chief, and noted at 1140.
1140	Engine Three:	Engine Three to Battalion Two.
1140	Battalion Two:	Battalion Two.
1140	Dispatch:	Go ahead Chief.
1141	Battalion Two:	Strike me a second alarm.
1141	Dispatch:	Copy that.
1141	Battalion Two:	Flames showing.
1141	Dispatch:	Copy and noted.
1141	Battalion Two:	Get me some P.D down here to help me get these buildings evacuated.
1141	Dispatch:	Copy that.
1141	Eng---	Eng---(Tone.) (Tone.)
1141	Dispatch:	Zone Box 301-Advanced Auto, Indian River and Sparrow, Engine 14 and Engine Two start responding. Engine 14 and Engine Two respond for second alarm.
1142	Engine Two:	Engine Two responding
1142	Dispatch:	Okay, Engine Two.
1142	Eng:	Eng----
1142	Battalion One:	Battalion One to Battalion Two.
1142	Dispatch:	Battalion Two.
1142	Battalion Three:	Battalion Three is responding.
1142	Battalion One:	?????
1142	Dispatch:	Okay, Chief Three.
1142	Engine Three:	Engine Three to Battalion Two.

Page 6
Dispatch Tapes Transcription
Case No. I9603073

1142	Battalion Two:	Go ahead.
1142	Engine Three:	Chief, I'll need a crew bottle up insided. We got fire in ceiling.
1142	Battalion Two:	That's affirmative.
1142	Battalion Two:	We got a fire showing – – Building fire showing from the outside.
1142	Eng-	Eng? Responding.
1142	Engine Three:	Crew coming in; bring pike pole.
1142	Battalion One:	Battalion One to Battalion Two.
1143	Engine 14:	Engine 14 responding.
1143	Dispatch:	Okay.
1143	Engine Three:	Engine Three to Battalion Two.
1143	Battalion Two:	Battalion Two. Go ahead.
1143	Engine Three:	Chief, I'm gonna' need the second due engine to lay me supply line. I'm located in the rear of the building.
1143	Battalion Two:	Okay, Engine One, did you receive that?
1143	Engine One:	Engine One on the scene.
1143	Dispatch:	Okay.
1144	Engine Three:	Engine Three to Battalion Two.
1144	Engine Three:	Engine Three to Battalion Two.
1144	Dispatch:	Headquarters to Battalion Chief Two.
1144	Ladder Two:	Ladder Two is on the scene.
1144	Dispatch:	Okay Ladder Two.
1144	Engine Four:	Engine Four.
1144	Dispatch:	Engine Four.

Page 7
Dispatch Tapes Transcription
Case No. I9603073

1144	Engine Four:	Engine Four is back in service. (beep)
1144	Dispatch:	Okay. (beep, beep, beep, etc.)
1144	Battalion Two:	Battalion Two.
1144	Dispatch:	Go ahead Chief, Engine Three is trying to reach you.
1145	Battalion Chief:	Uhp'.
1145	Battalion Three:	Battalion Three.
1145	Dispatch:	Go ahead Chief.
1145	Battalion Three:	Go ahead and put Norfolk in Station One, and I'll advise you about Three, as soon as we get some more information.
1145	Dispatch:	Copy that Norfolk Station One.
1145	Engine Four:	Engine Four to Engine 42.
1145	Engine 42:	Go ahead.
1145	Engine Four:	Lieutenant, you heading toward Three?
1145	Engine 42	That's affirmative.
1145	Engine Four:	Okay.
1145	Battalion Two:	Battalion Two.
1145	Dispatch:	Go ahead Chief.
1146	Battalion Two:	I want a next due company to come into the front; I want to lay a line up to Advanced Auto.
1146	Engine One:	Engine One to Battalion Two.
1146	Engine One:	Engine One to Battalion Two.
1147	Battalion Two:	Battalion Two.
1147	Dispatch:	Go ahead Chief.
1147	Battalion Two:	Do you have another Battalion Chief?

Page 8
Dispatch Tapes Transcription
Case No. I9603073

1147	Dispatch:	Affirmative. Chief Harris is in route.
1147	Battalion Two:	You may as well notify Chief Elliot, Chief Best that we have a working commercial building fully involved.
1147	Dispatch:	Copy. Sir, will be notified.
1148	Engine Three:	Engine Three to Battalion Two.
1148	Engine Three:	Engine Three to Battalion Two.
1148	Dispatch:	Battalion Two.
1148	Battalion Two:	Battalion Two.
1148	Dispatch:	Were you trying to reach headquarters sir?
1148	Battalion Two:	Battalion Two.
1148	Dispatch:	Go ahead Chief.
1148	Battalion Two.	Might as well go on and strike me a third alarm. Staging on all sides. We need some staff support in here.
1148	Dispatch:	Copy sir. Also, be notified that we have one ladder company in the entire city. Tower 5 and Ladder 12 are both down.
1148	Battalion Three:	Battalion Three.
1148	Dispatch:	Battalion Three.
1148	Battalion Three:	Go ahead, send a ladder from Norfolk.
1148	Dispatch:	Copy that.
1148	Battalion Three:	You can get it at uh, Station 8 in Berkley.
1148	Dispatch:	Okay. (sirens in the background)
1149	Engine 42:	Engine 42 to Battalion Three.

Page 9
Dispatch Tapes Transcription
Case No. I9603073

1149	Battalion Three:	Go ahead 42.
1149	Engine 42:	Do you want us to respond to the fire scene?
1149	Battalion Three:	Yeah, he called for a third alarm. Go ahead. (Breaking up.)
1149	Medic One:	Medic One.
1149	Dispatch:	Medic One.
1149	Medic One:	Show us the route to this fire.
1149	Dispatch:	Copy Medic One.
1149	Battalion One:	Battalion One will be responding from the Chief's Office.
1149	Dispatch:	Okay.
1149	Engine 14:	Engine 14 to Battalion Two. We're coming up at Indian River Road now. You want to give us an assignment.
1149	Battalion Two:	______________________________
1149	???????????	Hello.
1149	???????????	?????????????????????
1149	Engine One:	Engine One to Battalion Two.
1149	Battalion Two:	Battalion Two. Go ahead.
1149	???????????	?????????????????????
1149	Engine Three:	Chief, I got Frank and myself and we can't get out.
1149	Battalion Two:	I can't understand you.
1149	Engine Three:	Chief, somebody to the front and get us out of here.
1150	Battalion Two:	Can anybody on this scene, on this fire? Can you hear or able to understand anything—transmission?

Page 10
Dispatch Tapes Transcription
Case No. I9603073

1150	Engine Four:	Unable to copy.
1150	Engine 14:	Engine 14 on the scene.
1150	Battalion Two:	Engine 14 go to the front of the building, find your hydrant to the front, lay to this ladder setting up.
1150	Engine 14:	We received, we'll catch this hydrant right out front here, and go to the front.
1150	Battalion One:	Battalion One to Battalion Two. Transmission sounds like it's somebody trapped inside of the building (phone ringing while this is going on).
1150	Battalion Three:	Battalion Three to Battalion one. I'll be there in just a minute to help us out.
1150	Battalion One:	Okay, pass on that transmission, sounds like somebody was trapped inside. Battalion Three, that's what I got. Let me get there, and I'll help.
1150	(Tone.)	
1151	Dispatch:	Engine 42 and Engine Four. Start responding to Indian River and Sparrow. Engine 42 and Engine Four respond to Sparrow and assist.
1151	Engine Four:	Engine Four is responding from Great Bridge Blvd.—No--
1151	Chief Four:	…Also Dispatch—Do you have Medic?
1151	Dispatch:	I have Medic One in route. Do you wish another?
1151	Chief Four:	Negative.
1151	EMS Three:	Medic Three's in route. Go ahead and put myself and Medic Three on the call.
1151	Dispatch:	Okay, Medic Three.
1151	Battalion Three:	Battalion Three. Medic Three responding.

Page 11
Dispatch Tapes Transcription
Case No. I9603073

1151	Medic One:	Medic One to EMS Three. Medic One is on the scene. Engine catching the hydrant in this middle of Indian River Road.
1151	Battalion Three:	Battalion Three.
1151	Dispatch:	Battalion Three.
1151	Battalion Three:	We'll need Ladder 10 out of Virginia Beach. They are about three blocks from this location. Ladder 10 out of Virginia Beach.
1151	Dispatch:	Copy that.
1151	Engine Three:	Engine Three to Battalion Two.
1151	Battalion Two:	Go ahead.
1151	Engine Three:	Captain Meads crew has been converted interior attack, to try and hold the fire in check.
1152	Engine Three:	Engine Three to Engine One. I need – water – as soon as you can get it to me.
1152	Battalion Two:	Okay, we've got it fully involved on the front of this building, I've got no water whatsoever up in the front.
1152	Engine 14:	Engine 14 is laying to the front right now.
1152	Medic One:	Medic One's on the scene.
1152	Medic One:	Medic One to dispatcher, we're on-scene at the hydrant.
1152	?????????	Be at the rear of the building.
1152	Engine 14:	Fourteen is on the scene, laying a 5".
Medic Three:	Medic Three is on the scene.	
1152	?????:	(Broken up transmission.)
1152	Battalion Three:	Battalion Three on the scene. All companies responding, switch to Channel 2.

Page 12
Dispatch Tapes Transcription
Case No. I9603073

1153	Captain Meads:	Captain Meads to Battalion Two.
1153	Portable 14:	Portable 14 to Engine 14. Now we're ready to charge the hydrant on your ready.
1153	Engine 14:	Engine 14 to Lt. Tarkington.
1153	Battalion Three:	Go ahead, start switching to Channel 2.
1153	Engine 14:	Engine 14 to Lt. Tarkington.
1153	????????????:	Go ahead. Give us some water.
1153	???????????:	Charge it. (Desperation sounds.)
1154	??????????:	Unit calling to Lt. Tarkington. Are you ready for water?
1154	Battalion Three:	Battalion Three.
1154	Dispatch:	Go ahead Three.
1154	Battalion Three:	Go ahead tell that Ladder Company coming from Virginia Beach to set-up in front of BeLo's, and tell that Engine Company to lay their own supply lines.
1154	Dispatch:	Copy that. You want the ladder from Virginia Beach, and you an Engine from Virginia Beach as well?
1154	Battalion Three:	Correct, tell them to set-up right in front of BeLo's.
1154	Battalion Two:	Chief Harris, where are you?
1154	Battalion Three:	I'm in the front Chief, just getting into the now.
1154	Battalion Two:	All right, you come on down here to the other side, the foot, that's where I'm sitting.
1154	Battalion Three:	Okay, I'll be right there.

Page 13
Dispatch Tapes Transcription
Case No. I9603073

1154	EMS Three:	EMS Three to Dispatch. When you get a chance, bring a PSO out here. I got people running over this hose lines.
1154	Dispatch:	Copy that.
1154	EMS Three:	This lane is for emergency traffic.
1155	Engine One:	Engine One to Battalion Two.
1155	Engine 42:	Engine 42 to Battalion Three. Battalion Two.
1155	???????????	(Broke up.)
1155	Engine 42:	Chief, we're at the rear of Engine Three, we haven't had water, and the fire is getting ready to cook the engine.
1155	Battalion Two:	What unit is this?
1155	Captain Meads	We're sitting back here with dead lines and the fire is blowing right over us.
1155	Battalion Two:	You're in the back?
1155	Captain Meads:	I'm saying the fire is blowing directly over the engine, we're having to move it, and the lines are not effective.
1155	Battalion Two:	All right, you have your water?
1155	Engine 14:	Engine 14 to Lt. Tarkington.
1155	Captain Meads:	To Battalion Two.
1155	Battalion Two:	Battalion Two.
1156	Captain Meads:	I got men on the inside from Engine Three, and the lines have been burned; I do not know there status, and we still have water to go in after them.
1156	Engine 42:	Engine 42 to Battalion Three.
1156	Battalion Three:	Battalion Three.

APPENDIX C

Changes Initiated by the CFD Since the Fire
Chesapeake Fire Department Initiatives
Truss Identification Program

CHESAPEAKE FIRE DEPARTMENT INITIATIVES

Operations

C Automatic response of 2nd BC on any working incident to support command structure.
C Developed policy on IDLH atmospheres, including on-site Rapid Intervention Team before entry of interior crews.
C Automatic response of EMS Captain to support command staff with personnel accountability.
C Automatic switching to Channel 2 (Fireground Tactical Channel) upon arrival on the scene.
C Developed comprehensive Operational Policy concerning communications and the use of radio equipment.
C Developed Truss Identification Program (TIP) to identify and mark all truss construction within the City. Information is included in database and pre-plan books.
C Reinforce use of existing Incident Command System (ICS).
C Reinforce use of existing Personnel Accountability System (PAS).
C Reinforce use of existing PASS device use.
C Training staff automatically deployed to all working incidents, 2nd alarm or greater, to function as Safety Support Officers.
C Formed Research Committee to revise current pre-plan documentation data using computer based drafting, mapping, and storage capabilities.

EQUIPMENT

C Enhanced ICS Command pack with additional resources to improve command capabilities.
C Added communication equipment to ICS Command Pack to provide ability to communicate/monitor both fire channels simultaneously.
C Added additional portable radios to each piece of apparatus.
C Research and development program to compare all current S.C.B.A equipment on the market, and make recommendations to the department.

TRAINING

P Mandatory state certification for Incident Safety Officer for all Battalion Chiefs and Staff Chiefs.

C = Completed
P = Planned next year

City of Chesapeake Fire Department	Standard Operating Procedure	
	No. 50.20	Date 10/09/96
	Subject **Truss Identification Program (TIP)** **Page 1 of 3**	

I. PURPOSE

The use of trusses in building construction presents a great danger to firefighting personnel when those structures are involved in fire conditions. By design, the truss members in floor and roof assemblies will collapse, without warning, after being exposed to heat or flame contact for a very short period of time. Because of the inherent danger firefighters must face while operating within these buildings, a Truss Identification Program (TIP) has been instituted to alert personnel of the danger prior to beginning fire suppression operations. The Truss Identification Program is intended to alert the members of the Chesapeake Fire Department with pertinent pre-plan information before firefighting forces are committed to an interior attack.

II. SCOPE

The following guidelines shall be followed whenever a truss assembly is discovered in any commercial building in the City of Chesapeake.

III. POLICY

The TIP shall be an ongoing program applied to all commercial buildings inspected by the Chesapeake Fire Department. Overall responsibility for implementation and control of the program will be under the direction of the Deputy Chief of Operations. Station Commanders will insure that all commercial buildings within their district are inspected in accordance with the City of Chesapeake, Virginia Fire Inspections Manual.

Company Officers will insure that personnel under their command are trained, and understand different types of building construction and truss assemblies.

City of Chesapeake Fire Department	Standard Operating Procedure	
	No. 50.20	Date 10/09/96
Subject **Truss Identification Program (TIP)** **Page 2 of 3**		

IV. PROCEDURE

A. NOTIFICATION

1. Upon discovering a truss assembly, fill out a Truss Identification Program Reporting Form and forward it to the Information Management Office.

2. When the Truss Identification Program Reporting Form has been received by Information Management, truss information will be entered on the C.A.D. system premise file. The ringdown printout sheet received by stations on the initial alarm will alert companies of the use of Truss Construction in the structure to which they are responding.

B. PRE-FIRE PLAN TRUSS LABELS

1. One florescent orange Pre-fire Plan Truss Warning Label shall be applied to the top center portion of the pre-fire plan when truss assemblies are identified as part of the construction members of that particular building. While enroute to the scene, pre-fire plans should be placed on the accountability clipboard for easier access and review by arriving Incident Commanders.

C. APPLYING TRUSS IDENTIFICATION STICKERS (“T” STICKERS)

1. Explain to the business owner that “T” stickers do not mean that their building is hazardous. It does not affect their insurance rates or cause any other concern for the business owner. They are only applied to alert firefighters of a potential danger of collapse of the building under fire conditions. In all cases, Fire Department personnel should be polite, courteous, and professional in their actions. A fact sheet handout should be left with the owner or representative of each building where a “T” sticker is applied.

City of Chesapeake
Fire Department

Standard Operating Procedure

No. 50.20 **Date** 10/09/96

Subject

Truss Identification Program (TIP)

Page 3 of 3

2. If the business owner still object to the "T" sticker, comply with his/her wishes and refer the matter to the Fire Marshal's Office. Enforcement will be in accordance with Chesapeake City Code Section 34-3.

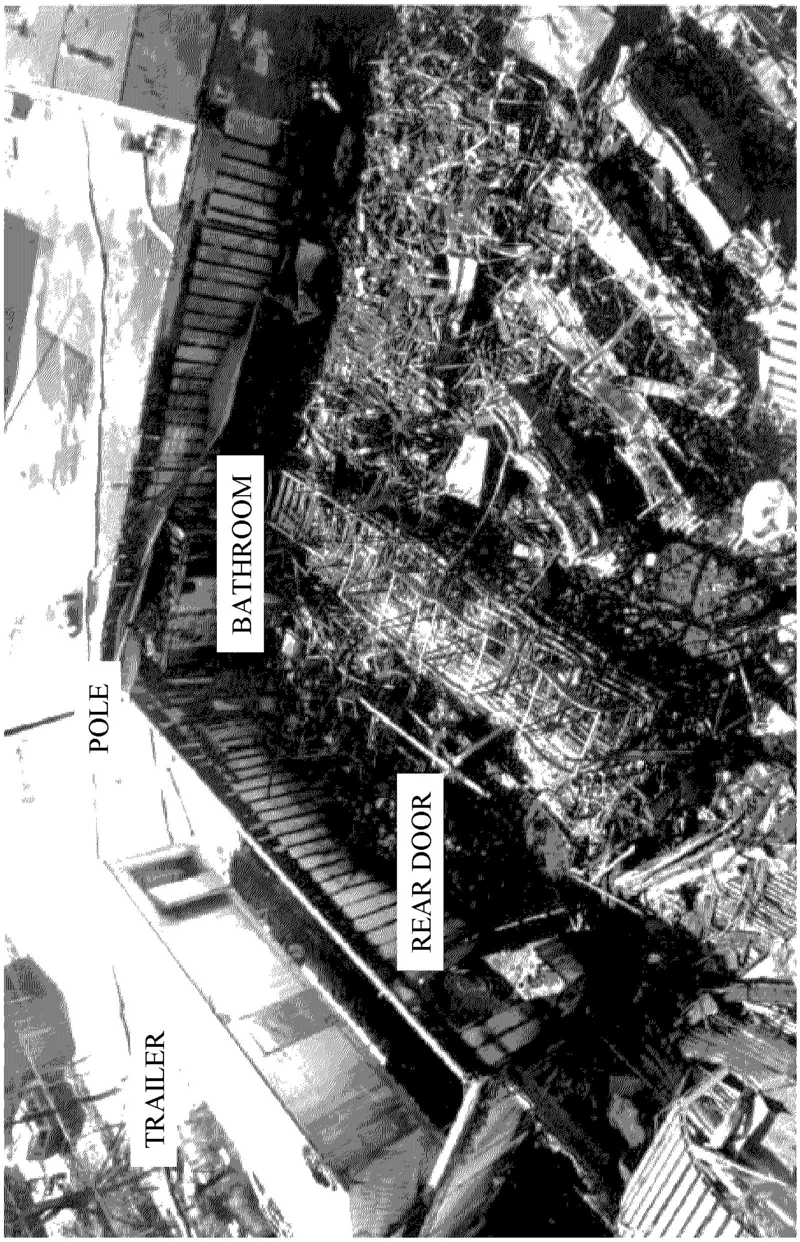
3. Upon obtaining the business owner's permission to apply the "T" sticker, use the following procedure.

   a Thoroughly clean an area on the top right-hand corner of the main entry door.
   b Apply the pressure sensitive "T" sticker.
   c In multiple occupancy structures (shopping center, strip malls, etc.) it will be necessary to place a "T" sticker at each occupancy address.
   d In cases where the Fire Department may make initial entry through the rear door of an occupancy, a "T" sticker should also be applied to that door.
   e In cases where one business occupies several addresses, your own judgment must be used as to the number of "T" stickers applied.
   f In cases of multiple adjacent doors, only the center-most door should be marked. It is not necessary to mark every door when several doors are located at a common entrance point to a structure.
   g Judgment should be exercised so that existing lettering or advertisement is not covered up or disturbed.

APPROVED: Michael P. Bolan

APPENDIX D

Photographs of the Advance Auto Fire



An elevated view of the rear of the store, showing (1) the door in the rear where the firefighters entered with the 13/4 attack line; (2) the trailer that blocked the view of the rear entrance; (3) the location of the utility pole; and (4) the employee bathrooms where the fire was originally discovered. (*Photo courtesy of the NFPA*)

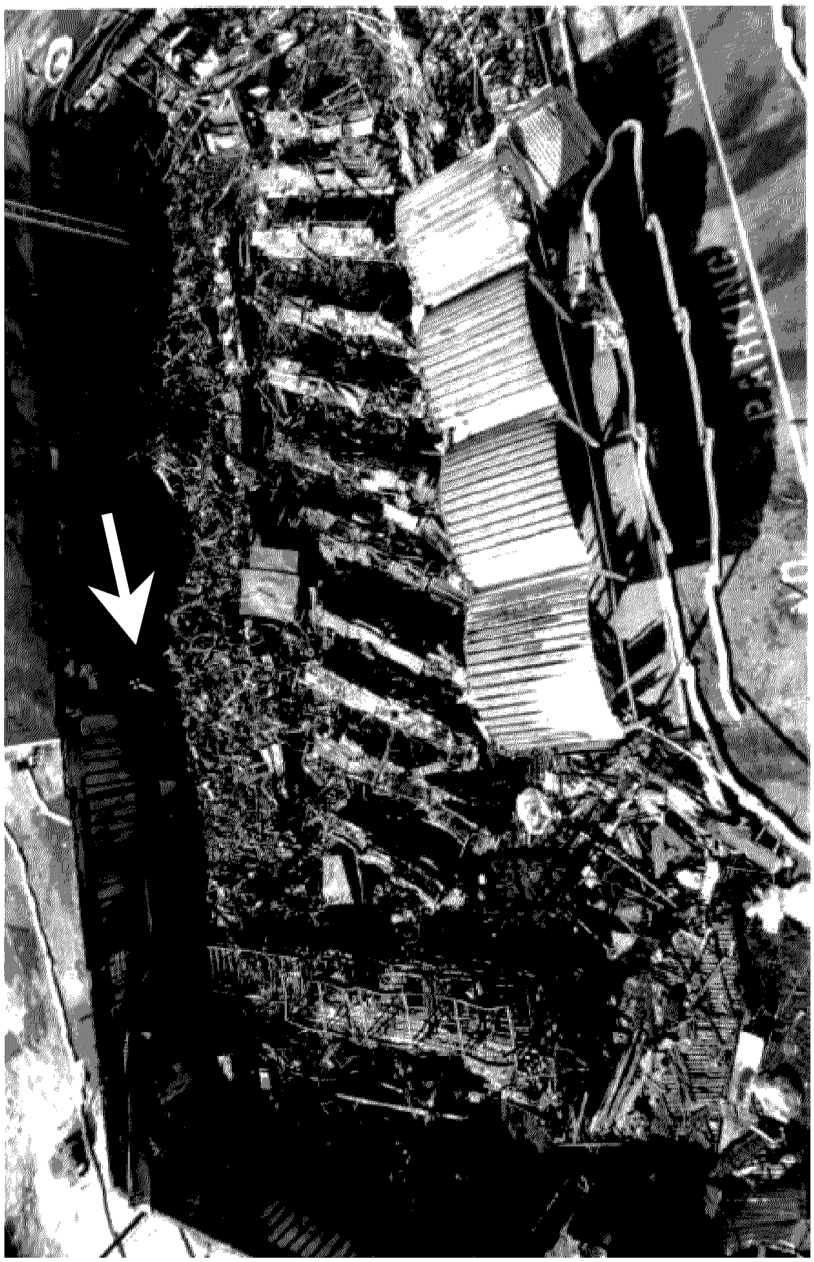
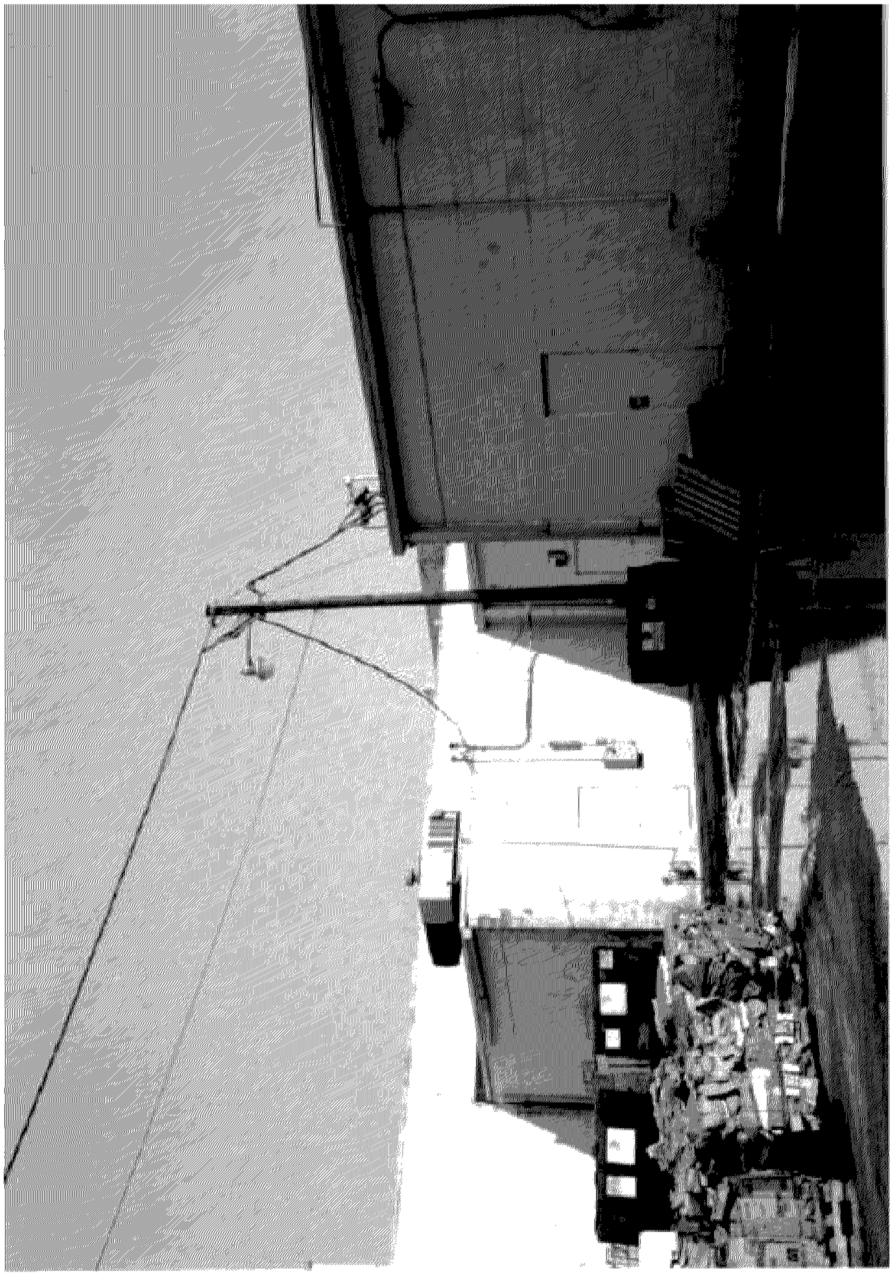


Photo of interior of the store from an elevated position on side two. The white cross (arrow) indicates where both firefighters were found. *(Photo courtesy of the NFPA)*

The truss loft area in another part of the Indian River Shopping Center. (*Photo courtesy of the NFPA*)



Utility pole connecting power to a meter at the rear of the Indian River Shopping Center. (*USFA file photo.*)

Ladder 2 is shown in its initial position on side two. Time of the photo is estimated between 11:50 and 11:52 a.m. (*Photo courtesy Chesapeake Fire Department*)

Ladder 2 is shown in position on side one. Time of the photo is estimated at 11:52 a.m. The supply line in the front of the picture is from Engine 1. (*Photo courtesy Chesapeake Fire Department*)

UNIT 6:
INTERAGENCY AND MUTUAL AID

LEARNING OUTCOME

Systematically manage resources, personnel, teams, facilities, equipment and supplies during operations.

OBJECTIVES

The students will:

1. *Estimate the potential benefits of mutual-aid agreements for the department and community.*
2. *Recommend key planning issues for mutual-aid and interagency operations.*
3. *Recommend a list of organizations that could provide assistance to the fire department at a major emergency.*

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RECOGNIZING THE NEED

Benefits

Effective mutual-aid and interagency cooperation are the cornerstones of a well-managed large-scale incident. Neighboring fire and Emergency Medical Services (EMS) departments and other agencies can provide much-needed resources and technical advice. Failure to take advantage of this assistance can confuse Command, overload the decision-maker's span-of-control, and result in overwhelmed operational resources.

Each jurisdiction needs well-thought-out and agreed-upon plans. These plans must clearly delineate the chain of Command and functional responsibilities. Whoever has responsibility for a specific function on a day-to-day basis would, in almost all cases, have responsibility for that same function during a major incident or disaster. Interagency cooperation — not competition or turf guarding — is the responsibility and duty of all emergency services.

Integrated Emergency Management System

The Integrated Emergency Management System (IEMS) is a method of developing and maintaining a credible emergency management capability nationwide by coordinating activities along functional lines at all levels of government and across all-hazards. The process has two focal points:

1. **Hazard analysis —** knowing what could happen in a community, the likelihood of it happening, and the magnitude of the problems that could arise.

2. **Capability assessment —** determining what resources are needed, what resources are currently available, and what resources can be obtained from other jurisdictions, either for a specific target hazard or the community at large.

Once the potential for disasters is determined, and current capabilities for dealing with them are assessed, the next step is planning either to lessen the hazards or to increase capabilities. This process can be accomplished only by bringing together all the disciplines in the community (police, public works, building department, etc.) in a cooperative effort. Plans may extend over several years, depending on available resources.

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Activity 6.1

Are You at Risk?

Purpose

To evaluate your roles and your department's/community's preparedness in emergency management.

Directions

1. Turn to the "Are You at Risk?" quiz on the following page.

2. The five-minute quiz allows you to evaluate your role and your department's/ community's preparedness in emergency management.

3. The quiz is

    a. Informal (general indicator, for information purposes only).

    b. Confidential (will not be collected).

4. Answer "yes" or "no" to each question; scoring will be explained later.

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Activity 6.1 (cont'd)

Are You at Risk?

This informal quiz provides a confidential evaluation of your role and your department's/ community's preparedness in emergency management. The questions reflect some of the key issues associated with effective emergency management at the local level.

1. Have you personally reviewed your organization's emergency management plan within the past 18 months?

   Yes __ No __

2. Do you have a clear understanding of your authority and responsibilities in disaster situations?

   Yes __ No __

3. Does the plan define the role that elected officials will play during declared emergencies?

   Yes __ No __

4. Within the past two years, have your elected officials participated in either a comprehensive review of your emergency management system or a disaster exercise?

   Yes __ No __

5. Is a single news media point of contact (Public Information Officer (PIO)) provided in your community's emergency management plan?

   Yes __ No __

6. Were representatives of the news media involved in developing and testing the community's emergency management plan?

   Yes __ No __

7. Does the emergency management plan involve your department in disaster mitigation activities (land-use planning, etc.)?

   Yes __ No __

8. Does the emergency management plan consider your department's post-disaster recovery responsibilities?

   Yes __ No __

9. Do you have accounting and documentation procedures to help document the department's requests for reimbursement under state and federal emergency assistance programs?

   Yes ___ No ___

10. Does your department's plan ensure that the information needed to defend itself in a disaster-related lawsuit is maintained during incidents?

   Yes ___ No ___

11. Is the organizational structure in disasters an extension and expansion of the day-to-day emergency structure?

   Yes ___ No ___

12. Have you spent more than one hour during the past year in face-to-face discussions with your key counterparts in other emergency service agencies to improve disaster management?

   Yes ___ No ___

13. Are your emergency management procedures brief and organized in a manner that enables a smooth response to the range of incidents that may confront you?

   Yes ___ No ___

14. Were representatives of citizen volunteer organizations involved in developing the emergency plan?

   Yes ___ No ___

15. Do you have a mutual/automatic-aid system in place with departments in other communities for both normal and disaster situations?

   Yes ___ No ___

16. Are all your emergency units equipped and trained to set up an Incident Command System (ICS) at all incidents?

   Yes ___ No ___

MUTUAL-AID REVIEW

Mutual Aid

Mutual aid is a system wherein organizations, especially fire departments, share resources in time of need. This system must take into account:

- **formal agreements —** written or unwritten, between two or more fire departments or agencies;
- **liability —** prearranged determination of legal issues;
- **operations —** determining in advance:
  - who has authority to request aid,
  - what gets sent,
  - the conditions or factors that allow a department to deny aid when requested, and
  - who will be in charge of which units;
- **communications —** a workable communications system during emergencies; and
- **training —** the type and level of training provided to responders, and the compatibility of this training.

Mutual aid has a long and distinguished history. The Pilgrims had mutual-aid agreements as their settlements spread out from Plymouth Colony. Today, nearly every community in the country has some form of mutual aid or automatic aid. Some of these pacts are simple verbal agreements between two neighboring chiefs; others are so extensive they encompass hundreds of communities and thousands of personnel. Contracts range from one-page agreements to massive legal documents. They can cover all jurisdictions in a state, several different states, or even two different countries (e.g., the United States and Canada).

Formal Agreements

The use of written formal agreements in a particular jurisdiction depends on the requirements and constraints of each region or governmental entity.

When drafting written agreements, it is prudent to have the assistance of legal counsel to ensure that issues of liability, risk, legality and, in some cases, reimbursement are properly written to avoid future conflict.

Before entering into a formal agreement, each party must understand, accept, endorse and approve all provisions contained in the document.

The agreement should permit withdrawal by any party with proper notice (usually 60 to 90 days).

Liability Issues

Liability issues usually cause the most concern when drafting mutual-aid agreements. Responsibility for items such as lost or damaged equipment, injuries, deaths, food, fuel, supplies, and repairs should be spelled out clearly in the document. Special provisions are needed to address negligence. The negligent party is usually liable, regardless of other factors.

Operations

Well-thought-out agreements pay off during emergency operations. The Incident Commander (IC) will know what kind of support is available outside the immediate community. Responding units will report to a Staging Area for assignment by the IC, reducing much of the confusion caused by randomly arriving units going directly to the Incident Command Post (ICP).

Problems of “who’s in charge?” are minimized if Command responsibilities are predetermined and followed precisely. A formal Incident Command System (ICS) that is jointly developed by participating departments provides for more effective management of incidents.

Standardized equipment and procedures are also important for effective incident management. Equipment such as hose thread sizes, nozzles, air supply, etc. should be interchangeable between units. Compatible standard operating procedures (SOPs)/standard operating guidelines (SOGs) for all types of incidents should be adopted, and personnel in each department under the agreement should be trained in these SOPs/SOGs.

Communications

Communications for units responding to a mutual-aid incident range from hand signals or runners on bicycles to reserved multifrequency radio networks. Proper communication is an extremely critical element of effective mutual-aid operations.

The ability to identify quickly whether a responding unit is a pumper, truck or staff vehicle saves time and assists the IC in developing tactics and strategy. All units in a mutual-aid plan should be identifiable by a simple numbering system. For example, a mutual-aid unit designation system might assign a four-digit number to each unit. The first two numbers signify the city, the third represents the station assigned, and the fourth identifies the type of unit (1 = pumper, 2 = truck, 3 = hazmat, etc.). The ability of the IC to communicate with all working units enhances operations, increases firefighter safety, and improves overall fireground activities.

Training

Training is unquestionably the backbone of an effective mutual-aid system. Practice improves coordination so Operations personnel attain peak performance levels. Without training, departments have only a “paper” system. Training develops skills and teamwork that are essential during stressful emergency situations.

KEY POINTS ABOUT INTERAGENCY AND MUTUAL AID

Mutual-aid Operations

Mutual aid has many advantages. It provides fiscal savings for taxpaying citizens by minimizing the duplication of equipment that is readily available from nearby communities. It also can provide specialized resources to the Fire Chief (equipment, staff, expertise, etc.) that otherwise would not be available.

The mutual-aid system must not be abused. ICs should be judicious in requests for assistance by calling for assistance only when needed. Similarly, the IC should release units from other jurisdictions as quickly as feasible.

Mutual aid is not a giveaway program. The first and foremost concern is the protection of the department's home community. If the community is vacated, the plan must provide for move-ups into unprotected areas.

Remember, mutual aid is not a crutch for departments with insufficient staff or inadequate equipment. Each department must strive to provide quality, first-level, day-to-day protection. Only after this responsibility is met will mutual-aid agreements be successful.

Preparation and planning are key components of a department's ability to save lives, minimize losses and better serve the community. This requirement is especially critical when several different departments work together to accomplish the mission. Other key components of an effective mutual-aid system include

- a minimum standard level of equipment and staffing;
- a standardized ICS;
- common communications during mutual-aid operations; and
- joint participation in the Postincident Analysis (PIA) by all participating departments.

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Activity 6.2

Identifying Cooperating Agencies

Purpose

To identify and discuss groups and agencies that can provide resources and assistance to fire departments during different types of emergencies.

Directions

1. Your group will be assigned one of the following organizational categories:

    a. Local government agencies.

    b. State agencies.

    c. Federal agencies.

    d. Community and private sector assistance.

2. For the assigned area, work with members of your group to develop a list of organizations, including the types of resources and assistance that each could provide to fire departments. Record the list on an easel pad. You will have 10 to 15 minutes for group work.

3. Select a representative to summarize your results for the class.

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KEY POINTS ABOUT INTERAGENCY AND MUTUAL AID (cont'd)

Interagency Operations

Like mutual aid, coordination with nonfire organizations has many potential advantages for fire departments: fiscal savings, specialized equipment, additional staff and resources, etc. When planning for interagency operations, fire officers must remember that different agencies have different missions, needs and resources. However, many principles are similar to mutual aid.

Interagency cooperation with agencies other than fire and EMS departments must begin with planning in order to reduce conflict and confusion at emergencies. This planning should include all nonfire service agencies that may be involved in operations. Don't wait until an incident occurs before identifying the roles of assisting agencies and the services they can provide. Just as with mutual aid, interagency cooperation could result in fiscal savings and access to specialized equipment, Technical Specialists and other resources that may not otherwise be available to fire departments.

Effective cooperation requires research, cross-training and, most importantly, exercising. Assisting nonfire service agencies must understand fire department Command structures and terminology. Similarly, fire department personnel must know the specialties, capabilities and resources of the assisting agencies. Joint training sessions are an ideal way to familiarize and test everyone involved with emergency operations. The result will be smoother, safer, more efficient operations when a community most needs it.

Other key components of effective interagency operations include a standardized ICS, common communications during mutual-aid operations, and joint participation in the PIA by all participating agencies.

SUMMARY

Fire departments should develop and maintain mutual-aid plans with neighboring fire and EMS departments and working relationships with nonfire service agencies inside and outside their jurisdiction. These arrangements provide advantages in liability protection, operations, communications and training. To be effective, agreements must be implemented through joint planning and compatible SOPs/SOGs. Mutual-aid plans and interagency operations are applied and refined through practice, and all departments and agencies should participate in integrated exercises. Plans for mutual-aid and interagency operations must include a standardized ICS, common communications capabilities, and joint participation in the PIA.

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APPENDIX

SAMPLE MUTUAL-AID AGREEMENT

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REGIONAL PLANNING COUNCIL
MUTUAL-AID AGREEMENT
FOR ADDITIONAL FIRE PROTECTION

THIS AGREEMENT, entered into this seventh day of June, 1989, by and between [names of all participating jurisdictions]

WITNESSETH THAT:

WHEREAS, the respective parties hereto have certain firefighting and emergency medical equipment and personnel to operate same; and

WHEREAS, each of the parties hereto recognizes that there exists the possibility that there can be emergencies and certain circumstances wherein said firefighting, emergency medical equipment and personnel, as maintained by each of them individually, may not be adequate to afford full and complete protection to property and to inhabitants within each respective area of operation; and

WHEREAS, it is mutually desired by the parties hereto that, in event of such situation as aforesaid, the firefighting and emergency medical equipment and personnel of the other parties be made available to them.

NOW, THEREFORE, in consideration of the mutual promises and covenants herein contained, the respective parties hereto agree and contract as follows:

1. That in the event any party hereto, because of emergency or unusual circumstances, should require additional firefighting protection or emergency medical assistance, above and beyond that which said party can furnish in its own behalf from its own resources, and as determined by the chief or other appropriate designated authority of said party, then in that event upon the call of said requesting authority to an appropriate designated authority of any of the other parties hereto, such responding party may send firefighting or other medical emergency equipment and personnel to the location or locations directed by the requesting authority.

2. That the nature and extent of assistance furnished by either party to the other shall be determined on the basis of the prevailing needs for fire protection or emergency medical assistance in the area of the said responding party. The rendering of assistance under the terms of this Agreement shall not be mandatory; however, the responding party receiving the request for assistance should immediately inform the requesting party by means of oral, wire, fax or hand-delivered communication whether assistance can or cannot be rendered.

3. The appropriate designated authority of the requesting party shall assume full charge of the operations; however, he may in his discretion request a senior officer of a responding party's fire department to assume Command. In such event, he shall not, by relinquishing Command, be relieved of his responsibility for the operation. In either event, the responding party's firefighting and emergency medical equipment and personnel shall be under the immediate supervision of and shall be the immediate responsibility of the senior officer of the responding party's fire department who shall in turn be under the supervision of the head of the requesting party's fire department.

4. The appropriate designated authorities of the parties to this Agreement are invited and encouraged, on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours, consistent with local security requirements and, as is feasible, to jointly conduct prefire planning inspections and drills.

5. The appropriate designated authorities of the parties to this Agreement are authorized to meet and draft any detailed plans and procedures of operation in addition to those which are attached hereto and incorporated herein to assure that good faith efforts are utilized to effectively implement this Agreement and reduce the risk of loss to all parties to this Agreement. Such supplemental plans and procedures of operations shall become effective upon ratification by the appropriate signatory parties.

6. That neither party hereto shall be charged by the other party for services rendered.

7. That each of the parties hereto agrees to waive any and all claims against the other party which may arise out of its activities, including travel, outside its respective jurisdiction under this Agreement. Also, each of the parties hereto requesting the service of another party hereto shall defend, indemnify and save harmless such other responding party from all claims by third parties for property damage or personal injury which may arise out of the activities, including travel, of the parties during such service outside of their respective jurisdictions; provided, however, that a requesting party need not indemnify the party providing assistance if (1) the party providing assistance does not cooperate in defending against claims made by third parties or (2) the third-party claims arise out of malicious acts of the party providing assistance; all as provided in Article 38A, Section 37, of the Annotated Code of Maryland, as amended. The agreement to indemnify shall in no way be construed to constitute a waiver of any immunity by the requesting party or the responding party which either might enjoy, and the requesting party

shall be able to raise all defenses available to or which might be raised by the responding party.

8. The terms of this Agreement shall extend indefinitely, provided, however, that any party hereto may terminate its participation in this Agreement, at any time and for whatever reason, by serving upon the other parties hereto a ninety (90) day advance written notice to that effect.

9. This Agreement shall supersede any and all similar agreements, verbal or written, that may have been previously executed.

10. Unless the context otherwise requires, whenever used in this Agreement, the singular shall include the plural, the plural shall include the singular, and the masculine gender shall include the feminine and neuter gender.

IN WITNESS WHEREOF, the parties hereto have caused this Mutual-aid Agreement to be signed by their authorized officers and their respective seals to be affixed hereto.

REGIONAL PLANNING COUNCIL

ATTACHMENT PURSUANT TO PARAGRAPH 5
OF
MUTUAL-AID AGREEMENT
[DATE]

AGREED PROCEDURES AND CONDITIONS

1. **Prompt notice and accurate information in the event of loss:**

   The party requesting assistance shall be immediately notified of any incident, accident or occurrence involving the activities of the responding party under this Agreement. This notification should be made promptly when the responding party is notified of the accident and should be communicated to the designated contact authority of the requesting party listed on Exhibit "A" of this Agreement, as may be amended from time to time.

2. **Coordination and preservation of physical evidence at accident scene:**

   The responding party shall make every effort to cooperate with the requesting party in any investigation resulting from an incident, accident or occurrence involving the activities of the responding party under this Agreement. The responding party should conduct its own investigation as if it were the legally responsible party to ensure the preservation of any evidence or testimony which may be needed for defense purposes should litigation result.

3. **Full cooperation with public and private investigators:**

   If a requesting party elects to do so, it may conduct an independent and parallel investigation of the incident, accident or occurrence on the scene regardless of any other investigation being conducted by the jurisdiction where the accident, incident or occurrence occurred.

4. **Procedures of operation and loss control:**

   The appropriate designated authorities of the parties to this Agreement shall have the privilege, if desired and upon reasonable notice, to review on a yearly basis the required training, equipment and maintenance schedules implemented by the other parties to this Agreement, at the convenience of the host party.

UNIT 7: TACTICAL COMPANY OPERATIONS

LEARNING OUTCOME

Lead tactical company operations recognizing and recalling the appropriate functions that must be performed at incidents.

OBJECTIVES

The students will:

1. *Select truck, engine, squad/rescue and Emergency Medical Services (EMS) tactical company functions and responsibilities.*

2. *Choose effective tactical company strategies and tactics at emergency incidents.*

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INTRODUCTION

This unit is about tactical company operations, an important component of the Command and control of any emergency incident. These operations do not necessarily relate to the type of apparatus that firefighters respond on; rather, they refer to the **functions** that must be performed at the incident. Do not be put off right in the beginning by saying, for example, "we haven't got a truck company." Whether or not departments have one does not negate the necessity to do "truck work." The same is true of rescue and Emergency Medical Services (EMS) work.

Types of Situations Encountered

Today, fire departments respond to a variety of emergency and nonemergency situations. These include

- structure fires;
- wildland fires;
- vehicle crashes;
- cave-ins/collapses;
- hazmat releases;
- emergency medical incidents;
- fire alarms sounding;
- smoke or unusual odors; and
- other.

To deal with these types of situations successfully and safely, certain functions must be undertaken by the fire department.

Fire Department Functions

Each type of situation requires that a unique set of functions, or tactical operations, be performed to meet the strategic objectives established by the Incident Commander (IC). These tactical operations involve the tasks and procedures for which firefighters typically train.

Common types of incidents that fire departments respond to, along with the functions that may have to be performed at these incidents, are listed in Table 7-1.

Table 7-1
Tactical Functions

Structure fires • entry; • ventilation; • search; • fire attack; • water supply; • Rapid Intervention Crews (RICs); • victim removal; • rehab; and • EMS care. **Wildland fires** • fire attack; • water supply; and • containment. **Hazmat releases** • isolate/deny entry; • set up zones; • identify project; • entry; • Decon; • RICs; • spill/leak control; • rehab; and • EMS care. **Fire alarms sounding** • investigation; and • above actions as necessary.	**Vehicle crashes** • hazard control; • vehicle stabilization; • victim access; • disentanglement; • victim removal; • rehab; and • EMS care. **Emergency medical incidents** • scene stabilization; and • EMS care. **Cave-ins/Collapses** • hazard control; • scene stabilization; • victim access; • disentanglement; • victim removal; • rehab; and • EMS care. **Smoke or unusual odors** • entry; • investigation; • ventilation; and • above actions as necessary. **Other situations** (follow the same pattern)

Note that this list does not describe the type of apparatus needed to perform these functions. In fact, trained and equipped personnel, not apparatus, accomplish these functions. The personnel and equipment are called resources; the functions are called tactical operations.

Generally, **the type of apparatus** that personnel respond on is not important — **what job** they do is. Fire department personnel can get to the incident scene in a variety of ways. It does not matter whether the conveyance is fire apparatus, privately owned vehicles (POVs), utility vehicles, or a pair of roller skates. Tactical operations must be assigned to properly equipped individual crews, and officers must see that these jobs are done.

Many fire departments — especially large, urban career departments — have specialized apparatus with established crews that are trained, equipped and assigned to perform specific tactical operations at emergency incidents. That is the approach those particular fire departments have adopted to accomplish the necessary response functions. Departments without specialized apparatus or established crews still must accomplish the tactical operations using the resources they have available.

For purposes of this unit, tactical functions will be discussed in terms commonly used by the fire service. These terms relate to a specific type of apparatus ("truck work," "engine work," etc.). However, it must be stressed again that the functions do not relate to the apparatus, only the terminology does.

Remember that personnel safety is of utmost importance during **all** tactical operations.

TRUCK COMPANY FUNCTIONS

Truck Work/Support Functions

Truck company functions — "truck work" — are tactical operations that support fire attack. These operations typically involve forcible entry, search and ventilation. Examples of this work include forcing entry into a building for attack and search crews, ventilating a building to remove heat/smoke/gas to support fire attack and victim rescue, laddering a building for access and rescue, or providing a mechanism for an elevated stream for defensive fire attack.

A crew doing "truck work" is responsible for forced entry, primary search and rescue, ventilation, and secondary search. Obviously, crews need to enter a building to conduct interior operations. If the building is locked or secured, entry must be forced. Victims inside a burning structure must be located and removed as quickly as possible. The heat, smoke and products of combustion must be removed from the building via ventilation. Once these tasks are done, a secondary, more thorough search of the premises can be conducted.

Fire/Heat/Smoke/Gas Behavior

Hot air and toxic gases rise to the ceiling and upper floors of a burning structure. Firefighters have to let the gases out somewhere. Sometimes personnel can ventilate horizontally by opening windows. Certainly, in one-story structures, personnel may not have to put a hole in the roof to let gases out.

During fire attack, the flame, heat and toxic gases can be pushed through the building, spreading the fire. These gases do not disappear; they go somewhere. Always remember that you are pushing the gases somewhere.

Smoke/Heat/Gas can be channeled by ventilation. This strategy can be critical in saving the lives of victims still in the building and in preventing the fire from trapping firefighters. Essentially, you help determine where the fire will spread. Since this process can present a danger to crews inside the building, you must coordinate ventilation with hoseline advancement. Vent opposite hoseline advancement so that the fire does not get behind the hoseline crew.

In short, the key components of "truck work" are to gain access, channel the heat/smoke/gas, and locate occupants. These functions often must occur simultaneously. Therefore, an adaquate number of trained personnel must be assigned to these tactical operations to ensure that they are accomplished safely and efficiently.

Staffing for Truck Work

As a "rule of thumb," a normal and reasonable number of personnel for doing "truck work" at a structure fire is approximately one-third of the company-level officers and firefighters on the scene. An incident with heavy rescue requirements usually will need even more personnel doing "truck work."

For example, one Chief, three Company Officers (COs), and nine firefighters (13 total) are dispatched to a simple dwelling fire. Staffing might be as follows:

- Chief in Command.
- Two officers and six firefighters doing "engine work" (eight total).
- One officer and three firefighters doing "truck work" (four total, or one-third of the total number of line personnel on-scene).

Truck Company Responsibilities

Crews doing "truck work" are responsible for forced entry, primary search and rescue, and ventilation to support other tactical operations.

Forced Entry

"Try before you pry" is a phrase used in forcible entry training around the world. Doors or window often are unlocked and do not need to be "forced" or broken. If, however, a door or window is locked or secured, firefighters still must get in to conduct a search and to reach the seat of the fire.

Ground-level doors are the safest entry point for tactical operations, but getting in may be difficult. Deadbolt locks, strong-arm and restraint locks, and window bars can sometimes make ground-level entry nearly impossible. If ground-level entry is not possible, the crew should gain entry through an upper level and open ground-level doors from the inside. These doors may be needed by firefighters as escape routes or by an RIC as an entry point.

Other entry tips include

- If doors are blocked by fire, windows may be used for entry.

- Small windows often indicate bathrooms.
- Whether or not windows on the second floor are used as an alternate entry point, they should be laddered as a secondary means of egress.

Search

Primary search operations are critical to the survival of anyone trapped or overcome in the building. Firefighters must do a primary search of the entire structure. Planning for search operations should weigh the danger to occupants as a primary consideration. Firefighters normally search the following areas in this priority order:

- Fire floor — begin closest to fire and work outward.
- Floor above fire floor.
- Top floor and work downward.
- Floors below the fire floor.

Sufficient personnel must be assigned to conduct a primary search in order to reach victims before they die. Remember that searching in smoke conditions takes time. It is not the same as walking around in a clear atmosphere. At least two personnel with a radio per floor must be assigned to search operations; personnel doing search should **never operate alone.**

Secondary search is performed after the fire is controlled or extinguished. Firefighters must search (or re-search) the entire area, including the initial fire area and the exterior perimeter. During a secondary search, shrubbery, terrain and setbacks must be checked thoroughly. People may jump before the fire department arrives.

Searching for fire extension is another task that typically is conducted as a part of "truck work." Some tips for this aspect of search include

- Always check under the stairs for fire extension.
- Soffits may allow the fire to extend into the attic area.
- Finished attics can have knee walls that create void spaces, which may or may not be accessible through a door or a removable panel. These spaces, often used for storage, can facilitate the unchecked spread of fire throughout the roof area.
- The area behind drywall or lathe and plaster is combustible, potentially allowing hidden burning and fire spread.
- Cocklofts and hollow decorative moldings ("gingerbread") may allow exterior spread.

Ventilation

Rapid heat and smoke buildup is found at virtually every structure fire. The smoke, heat and toxic gases rapidly travel though open doors and up open stairs. These combustion products can cut off exit routes and overcome firefighters and civilians. Small fires quickly produce large amounts of smoke and toxic gases that charge the whole house.

Modern energy conservation measures in buildings hamper ventilation operations. These include “tight” construction methods that do not allow a structure to breathe, and double and triple glazing (glass) in windows.

Ventilate horizontally as required, usually by opening or removing windows. This process is often accomplished while conducting search operations on upper floors or in one-story structures. Ventilate the roof as ordered and as fire conditions require, using aerial, tower or ground ladders. No fewer than two personnel should be on the roof, and the roof crew should always have at least two means of egress.

Ventilation must always be coordinated with hoseline advancement. Vent opposite hoseline advancement so the products of combustion are not drawn over the fire attack crew(s).

ENGINE COMPANY FUNCTIONS

Engine Work/Fire Attack Functions

Shortly after the discovery of fire, a caveman named Gorg was wandering through the wilds when he was struck by lightning, setting his loincloth ablaze. As might be expected, Gorg took off like a shot and his mad dash took him through a nearby pond. When he emerged from the far side of the pond, he noticed his loincloth was no longer burning. This incident showed that fire could be extinguished by the application of water. The principle is still valid today and has evolved to become the basic function of the engine company.

Engine company functions — “engine work” — are tactical operations that primarily involve delivering water (or some other extinguishing agent) to the seat of the fire for the purposes of containing and extinguishing it. This typically is what the public thinks of when they hear the term “firefighter.”

Crews doing engine work primarily are responsible for water supply, apparatus placement, attack type and attack placement. In addition, hoseline selection and placement, victim rescue, property conservation, utility control, and cause determination also can be the responsibility of the engine company.

Fire Extinguishment Methods

Fire departments respond to many types of fires, including structural, wildland, vehicle and dumpster/trash fires. There are several different methods for extinguishing these fires:

- Structure fires:

  - Interior (direct) attack with water or Class A foam.

  - Exterior (defensive or indirect) attack with water or Class A foam.

- Wildland fires:

  - Direct attack with water or Class A foam.

  - Indirect attack using compressed air foam.

  - Cutting fire lines/Use of natural firebreaks.

  - Air attack using water/retardant.

- Vehicle fires: direct attack with water or foam.

- Dumpster/Trash fires: direct attack with water or Class A foam.

The size and type of fire determines the size and type of attack. Also, the resources available can influence this decision. For example, you can't use Class A foam if your apparatus doesn't carry it; you can't use compressed air foam if you don't have the proper equipment; and you can't use large attack lines if you don't have enough personnel.

The size and type of attack is an important consideration in determining the resources needed at an incident. It always is better to have extra resources in Staging than to need more resources and have to wait while they are dispatched from quarters.

Determining the Size/Type of Attack

A normal and reasonable number of personnel required to do "engine work" at a fire depends on the size and type of attack. "Rules of thumb" include the following:

- Two firefighters for each attack line up to and including 2-inch lines.

- Three firefighters for each 2 1/2-inch or larger attack line.

- An officer with each attack line or groups of attack lines on each floor of a dwelling.

- A pump operator for each engine supplying water through any type of hoseline.

- One to three firefighters for master stream devices, depending on the type and whether it is mounted (fixed) or portable.

Engine Company Responsibilities

The crew doing engine work primarily is responsible for water supply, apparatus placement, attack type and attack placement.

Water Supply

The basic function of an engine company is to develop a water supply and deliver it to the fire. Several factors can influence an engine company's ability to accomplish that mission, including

- sources of water;
- distance to source;
- amount of water available;
- apparatus to develop supply; and
- personnel and equipment to deliver water.

One of the officer's responsibilities is to know the sources of water in his or her jurisdiction. The officer also should consider secondary sources in the event the primary supply is not available.

Tank Water

The first source of water available to firefighters is carried on the engine. Departments usually call this the booster tank or tank water. On front-line engines, the amount of water carried should be enough to handle the vast majority of fires to which the department responds. What you, as an officer, must look out for is the fire that can "almost" be put out with the water carried on the engine. Most Class A fire engines carry a minimum of 500 gallons of water. Many suburban/rural departments have engines that carry 750 or 1,000 gallons of water. Different needs usually depend on the presence or absence of fire hydrants and the capability of the hydrant system. The less water available from hydrants, the more water must be carried on the apparatus.

Regardless of the amount of water carried, the officer must be able to predict when his unit can, or cannot, extinguish the fire. When in doubt, call for help immediately. This decision should be made just after arrival, or as soon as possible. It's not a good time to start looking for another source of water after you have run out. The lives of firefighters at the end of the hoselines could be in serious jeopardy, and the structure might be lost before you are able to develop another water supply.

To help avoid making this mistake, you should make an accurate determination of Needed Fire Flow (NFF) prior to initiating the attack. If the NFF is greater than that carried on the engine, you must ensure a sufficient supply of water before allowing personnel to make an aggressive interior attack. If you have any doubts about whether the engine is carrying enough water to handle the incident, establish another source.

Municipal System

The best source of water usually is a municipal water system. In these systems, water mains are on a grid or are looped so that water can feed the hydrant from two directions. Many factors — the size and condition of the mains, location of the water source, pumping stations, and the time of day or year — affect how much water the system is capable of providing.

Officers need to be aware of hydrant locations, hydrants on dead-end mains, areas with low pressure, approximate flows available, number and type of hydrant outlets, and the capacity of the system.

A close working relationship should exist between the fire department and any water departments in the jurisdiction. Should a large fire occur, the water department usually can increase the amount of water available in the area. The water department also can keep fire personnel up to date on hydrants that may be out of service or mains that are broken or under repair.

Static Sources

Unfortunately, not all fires start next to a hydrant, and firefighters are forced to look elsewhere for a water supply. Many departments rely on drafting, or static, sources to provide water. These may include lakes, rivers, streams, ponds, swimming pools, irrigation ditches, or anything that contains water.

Officers should know where these sources are located and whether they are available when needed. A source could be frozen over in winter or dry in summer. Access to drafting sources can vary, depending on the time of year or weather conditions. Portable pumps can be used to get water from sources that cannot be reached by apparatus.

Where lakes and other deep sources exist, the installation of dry hydrants should be considered. Dry hydrants typically are made of "hydrant-sized" PVC piping (4 1/2 to 6 inches). One end with an attached strainer extends into the lake or other water source. The hydrant end (with hydrant-type threads) is mounted on land in a location accessible to fire apparatus. The engine then simply hooks one section of suction hose to the dry hydrant. This approach speeds up drafting and in areas subject to freezing weather it allows drafting without first breaking the ice.

Portable Sources

Water tenders are a primary source of water for many departments operating in areas without hydrants. One factor officers should consider when using water tenders is the volume of water available. When large quantities are necessary, a shuttle system can be established with two or more water tenders using portable tanks. Officers should realize that shuttles may take a considerable length of time to set up, and that a potential exists for gaps in the supply.

Other sources of portable water include mutual-aid departments, construction companies, city or county vehicles, the military, and a variety of other agencies. Officers also should be aware of buildings or businesses in the area that have water stored either in aboveground or underground tanks. Preplans should identify local sources of water and how they can best be used for firefighting.

Amount Available

Another factor that influences the engine company's ability to deliver water is the amount available. Officers and pump operators sometimes forget that a fire engine can supply only as much water on the discharge side of the pump as it takes in on the inlet side. Use caution when placing additional attack lines into service if the water supply is limited.

The presence of a hydrant does not indicate an unlimited water supply. Similarly, thousands of gallons of water may flow down a stream during a day, but what really counts is how many gallons you can draft per minute. As important as the location of the water supply is how much water is available.

Officers need to determine whether a source of water is reliable. To make that determination, three conditions must be met.

1. It has to be there when you need it.

2. It has to be accessible when you need it.

3. It has to provide the amount of water you need for the length of time you need it.

Another factor that impacts on the ability to deliver water is the engine itself. All engines have a rated capacity when pumping from draft. Do not use this rating as a limit when assessing the engine's capabilities. An engine rated at 1,000 gallons per minute (gpm) from draft usually is able to supply far more than that if pumping from a good hydrant.

The size of hose used for supply also influences the engine's ability to deliver water. Large-diameter hose (4 inches or greater) helps maximize available water supply by minimizing the amount of friction loss. The mechanical condition of the engine and pump also can affect delivery capabilities.

Other factors that affect the ability to deliver water include personnel and equipment. At larger fires, the officer usually runs out of people to apply water before running out of water and apparatus to deliver it. When personnel are in short supply, the officer must be careful not to work them beyond safe limits. The availability of hoselines, nozzles, master stream appliances, or specialized applicators also affects delivery capabilities.

Apparatus Placement

The "moth-to-the-flame" syndrome often can be seen in how apparatus is positioned at incidents. Some scenes resemble a used fire apparatus lot, with all the vehicles lined up together in front of the involved structure.

Some tactical errors commonly are made when positioning equipment at incident scenes. One mistake is parking too close to the fire. If this happens, an exposure problem may develop. Another mistake is blocking access for other responding equipment; not providing a way out if the fire threatens the apparatus can be embarrassing. In city areas, when no fire is showing, operators sometimes position apparatus to avoid obstructing civilian traffic. If a fire is later discovered, a mad scramble ensues and time is wasted.

Once an apparatus is positioned and goes into service, it may be difficult to move. Operating handlines must be shut down and pulled out and supply lines disconnected, often a lengthy process. It is best to do it right the first time.

Think ahead when positioning the apparatus. Some guidelines to follow

- Assume the structure will become fully engulfed, and position apparatus accordingly.
- When possible, park apparatus the height of the building away plus 20 feet in case of collapse.
- Allow access for other apparatus.
- Provide an escape route.
- If you have a choice, position aerial apparatus at the corner of a structure.

Attack Type

The basic type of attack depends upon the type of fire. Most structure fires involve a direct interior attack, while many wildland fires require an indirect attack.

The type and amount of fire determines the size and type of attack line used for a direct fire attack. For an interior attack, first determine the NFF. Based on this calculation, determine if the available water supply is sufficient. The distance from the source and amount of water required dictates the size and number of supply lines needed.

Based on the attack line needs, decide if enough personnel are on scene to maintain a safe, efficient interior attack. Insufficient water or insufficient personnel dictates an indirect or exterior attack.

The distance that the line must be carried affects the size of line that two people can handle. Horizontal and, more importantly, vertical distances must be known. Anyone who has ever tried to move a charged line up three flights of stairs knows what some of the problems are. Just getting the line to the building may be a problem due to terrain, fences, gates, yards with dogs, and numerous turns. In addition, the building configuration and the location of the fire will affect the ability to advance the line. For example, a store with numerous small compartments makes advancement more difficult.

The larger the hose diameter, the more water weight must be moved. One-hundred feet of 1 3/4-inch charged line weighs 100 pounds. One hundred feet of 1 1/2-inch line weighs 75 pounds. The size of the line that can be carried is a determining factor in selecting attack line size. In addition, the greater the discharge, the greater the amount of reaction on the person on the nozzle.

After deciding on the proper size line, and before removing the hose from the apparatus, identify the primary use of the line so the proper nozzle — fog or straight bore — can be placed on it. Nozzles are tools, and like all tools with similar functions, each type has advantages and disadvantages. Sometimes one feature is more important than another. Fog nozzles have the ability to break up the water so it can absorb heat and turn to steam faster. Straight-bore nozzles have a slight edge in range and greater ability to penetrate piled or bailed material.

Nozzle selection also is important when considering special problems, such as fires in partitions, attics and basements. Fires in partitions may require the use of “penetrating nozzles” that have a chisel-shaped front that makes plaster and wallboard penetration easier. Basements may require the use of a “cellar nozzle” that operates in a circular motion discharging as much as 500 gpm. Some departments use either type of nozzle in attic fires. Of course, if these special nozzles are unavailable, the normal fog or smoothbore nozzle also can be used effectively.

Attack Placement

Once the proper line has been chosen, the next problem is where to place it. This decision should be based on preexisting knowledge of the building, vehicle and terrain, in conjunction with the information gained during size-up. In some cases, especially wildland fires, the best choice is **not** to deploy attack lines, but rather to have the fire burn to natural or manmade fire breaks (indirect attack).

Size-up may give some indication of access points to the fire, as well as construction features, size, and shape of buildings and vehicles. Time spent in seeking the best possible position is well spent. This planning helps provide a margin of safety for firefighters.

For vehicle fires, approach the burning vehicle from a 45 degree angle from the uphill side, being certain to chock the wheels first. For structure fires, attack crews on the outside must not push the fire, smoke and heat back through a ventilation hole, whether natural or manmade. At all times, for rescue and general safety reasons, try to keep the line between the fire and people in the building.

The most successful way to handle a structure fire situation is an aggressive interior attack. Push the fire from uninvolved areas back to involved areas.

Hoseline placement must be coordinated with all other functions such as ventilation, rescue, search, and salvage. Be on the lookout for opposing lines. Protect stairways and exits for rescue and escape. Always maintain escape routes. Keep track of doors and windows.

Pick an access point that gets the attack crews as close to the fire as safety allows and provides best escape route. Hoselines may be placed through normal pathways in the building or through windows that enter uninvolved areas of the building. Use drop cords (hoist ropes) to pull the line to upper floors.

Several methods can be employed for rescuing victims. An attack line placed between the victims and the fire can protect lives until escape is possible. If the fire is confined or extinguished by the engine company, then it no longer poses a threat. The engine company participates in victim rescue by horizontal ventilation with hoselines.

Actually, all initial action is in some way directed toward saving lives. If it is not clear that a building is occupied, look for indicators. Is there a car in the driveway? Are lights turned on? Are curtains and furnishings visible?

When the engine company assumes its attack position, life safety is the number one concern. Don't place hoselines so that the water drives fire and toxic products from unoccupied to occupied areas.

After life safety has been protected, efforts must be directed toward reducing the amount of damage that occurs after the fire department intercedes. Tactics should be geared toward the goal of property conservation. Through training and direction on the fireground, officers can raise personnel awareness of the importance of, and techniques for, minimizing property damage.

An exterior attack is employed if the magnitude of the incident is greater than the resources available to deal with it. The method of attack involves a 2 1/2-inch handline, a prepiped master stream, or a portable master stream. Because of the volume of water required, water supply may become a problem.

Lead-time becomes a factor when additional lines must be laid and master stream devices set up. These jobs take time. Drill and practice can speed up the process.

Exposures must be protected. This is accomplished either by heavy streams on the burning building or water applied directly on exposures.

Escape routes for firefighters and apparatus should be maintained. Beware of narrow alleys and spaces between buildings. Personal protective equipment (PPE), including breathing apparatus, should be worn in case it is needed. Radiant heat, falling debris, and hose streams from all directions are just some of the problems to watch for.

SQUAD/RESCUE COMPANY FUNCTIONS

Rescue Work — Victim Rescue Functions

Squad or rescue company functions — "rescue work" — are tactical operations that primarily involve gaining access to, disentangling, and removing trapped civilians or firefighters. These individuals may be trapped due to a fire, vehicle crash, industrial/farm accident, or cave-in/collapse.

The crew doing rescue work is responsible for gaining access to victim(s), disentanglement, removal to a safe area, and providing an RIC. An RIC is a trained and equipped team consisting of at least two firefighters whose assignment is to be ready to assist firefighters immediately who may be in trouble in the hazardous area.

Types of Rescue

Fire departments face many types of rescue situations — vehicle, agricultural, industrial/machinery, trench, confined space, building collapse and others. Whether your department is large or small, you will face rescue situations that must be dealt with appropriately. Even if your department does not have a technical rescue team, you must begin initial rescue functions. You also may need to use rescue teams from neighboring departments or specialized personnel and equipment from other municipal agencies. In some cases, you might even consider calling a Federal Emergency Management Agency (FEMA) Urban Search and Rescue (US&R) Team.

FEMA US&R Teams are deployed only in response to a major disaster or if requested through a state Emergency Operations Center (EOC) or governor's office. Even then, FEMA Teams only respond when federal approval for deployment is given. This process could take several hours, and approval is likely only for major incidents with significant impact.

Rule-of-Thumb Staffing for Rescue Work

A normal and reasonable number of personnel required to do "rescue work" at an incident depends on the type of rescue situation. As a "rule of thumb," rescue incidents require

- An adequate number of trained personnel to access the patient.
- An adequate number of trained personnel to operate any extrication equipment or tools needed for disentanglement.
- An RIC for any operation in a hazardous area where rescuers have the potential of becoming victims.
- An adequate number of personnel to remove the patient to a safe area and/or an EMS treatment area.

All personnel involved in rescue operations should wear PPE that is appropriate for the type of actions required.

Squad/Rescue Company Responsibilities

The crew doing rescue work primarily is responsible for victim access, disentanglement, victim removal and RIC. Most types of rescue work involve specialized training and equipment and are outside the scope of this class. However, Command and control aspects remain the same as with other tactical operations.

Victim Access

During victim access, responders use the tools and equipment necessary to reach a trapped victim. Basic victim access may involve “popping a door” at a vehicle crash, moving lightweight debris at a collapse scene, rigging ropes for rappelling at a cliff rescue, etc. In many cases, especially in rescue situations inside buildings, the victim first must be located (search). This function may be done by a separate search team at major incidents, but often is done as a regular component of rescue work.

Disentanglement

Disentanglement is defined as using the tools and equipment necessary to free a victim from entrapment. Often, this involves “removing anything that’s not part of the victim,” e.g., disassembling a piece of machinery, removing the roof and rolling the dashboard of a vehicle, etc. In trench collapse, disentanglement involves shoring the trench and removing the dirt and debris trapping the victim. In a building collapse, tasks can range from removing plaster and lightweight materials by hand (light search and rescue) to cutting steel-reinforced concrete under tons of heavy debris (US&R).

Victim Removal

Victim removal typically involves carrying or hoisting the victim, usually stabilized in some sort of carrying or immobilization device, out of the hazard area. This process may be labor intensive, depending on where the victim is located and where he or she is being moved to (up an embankment, over a long distance, etc.). In most circumstances, the victim is taken to an area where EMS personnel can assess and treat him or her before transport.

Rapid Intervention Crew

An RIC should be established at every major incident. National Fire Protection Association (NFPA) 1500, *Standard on Fire Department Occupational Safety and Health Program*, mandates that departments specifically designate rescue crews at incident scenes. This requirement is based on the realization that firefighters face a high risk of injury or death during emergency operations, and that one of the most effective mechanisms for reducing that risk is to have an RIC ready to assist emergency personnel should the need arise.

The composition and placement of RICs may be somewhat agency-specific, as dictated by organizational needs and resource availability. However, written procedures/guidelines should be developed for using these crews, especially when they are performing exterior operations in support of interior crews. These written procedures should include evacuation signals and guidelines for implementing evacuation, and relocation of personnel from the area of danger. In addition, agencies involved in interagency or mutual-aid response must develop consistent and compatible procedures for using RICs.

An RIC should consist of at least two members who are fully equipped with appropriate PPE, self-contained breathing apparatus (SCBA), portable radios, and the necessary tools to be effective. Members should be positioned near the IC/Operations Chief, and they should monitor the tactical radio channel to maintain a complete and accurate understanding of operations and changing conditions, as well as the location of all tactical companies.

In the early stages of an incident, RIC personnel may perform other functions (i.e., secure utilities, flake-out hoselines, and work in the Command Post (CP)). However, they must always be prepared to redeploy at a moment's notice to perform rapid intervention functions. If the incident expands in size or complexity, personnel should be assigned as a **dedicated** RIC.

Placement of the RIC will depend on the incident. For example, in high-rise operations, the RIC should be located in Staging (two floors below the fire). In many other situations, a good location is near the CP or close to the Operations Section Leader. If the incident covers a large geographic area, more than one RIC may be required.

Some flexibility exists in procedural issues regarding RICs. However, at least one properly attired RIC must be available to provide assistance or rescue whenever personnel are operating in positions or performing functions that would subject them to immediate danger if equipment fails or another unexpected event occurs.

For example: A Chief Officer, two engine companies, and one truck company are operating at a structure fire. A portion of the second floor collapses. That information is transmitted to the IC. At this point, a possible scenario is as follows

- The IC activates a signal and, by radio, orders all personnel out of the building.
- A Personnel Accountability Report (PAR) is taken, and it is found that one member is missing. That member was last seen working near the collapse area.
- The RIC team is directed to enter the structure, quickly assess its stability, locate and recover the missing firefighter, and remove the member from danger.

EMERGENCY MEDICAL SERVICES COMPANY FUNCTIONS

Emergency Medical Service Work — Patient Care and Major Operations

Not every fire department operates ambulances or responds on EMS calls. Nevertheless, EMS is a critical part of incident operations, and EMS functions must be considered when managing incidents. This section should be taken seriously, even by personnel who have no EMS background.

EMS company functions — "EMS work" — are tactical operations that primarily involve patient care, medical monitoring and rehab of firefighters, and managing the Medical Group and associated tactical operations as part of the Incident Command System (ICS).

Types of Emergency Medical Services Incidents

EMS incidents encompass 60 to 80 percent of emergency activities in departments that provide EMS. Response situations include routine day-to-day EMS incidents (medical emergencies, common injuries, etc.), vehicle crashes, hazmat incidents, multicasualty incidents (MCIs) of any type, terrorism events, fire incidents with injured persons, and others too numerous to mention. In addition, nearly all major incidents require that a Rehab Area be established and staffed with EMS-trained personnel.

EMS operations are needed at nearly every incident to which fire departments respond. This statement implies that, if EMS is provided by a separate agency, fire and EMS personnel need to train together, have compatible communications systems, know and understand the other agency's standard operating procedures (SOPs), and operate within the same ICS.

Emergency Medical Services Staffing

A normal and reasonable number of personnel required to do "EMS work" depends on the incident and the type of operation needed. It should not relate to the number of ambulances needed or vice versa — rather, it should be based on the nature and magnitude of EMS tactical operations.

The minimum staffing level for ambulances performing routine or day-to-day EMS work often is mandated by legislation or ordinance. Many departments respond with two emergency medical technicians (EMTs) or paramedics (or one of each), depending on the level of service provided. The response may be in a nontransport EMS vehicle, such as a sedan, SUV, or utility truck. Departments often provide EMS first response in an engine or squad, with the same crew that responds to fire incidents.

At an incident, staffing a Rehab Area will depend on the number of crews that rotate through rehab at any given time. The rehab staff should never number less than two.

At an MCI, a rule of thumb for the total number of responders at the scene is three times the number of patients. This principal does not mean that three responders work on each patient, but instead applies to the total number of personnel at the scene. For example a vehicle crash with five patients might be staffed as follows

- one chief;
- one engine with an officer and three firefighters;
- one heavy squad with an officer and three firefighters; and
- three ambulances, each with one paramedic and one EMT.

The total number of responders at this incident is 15, three times the number of patients. Other staffing patterns are also possible.

Emergency Medical Services Company Responsibilities

The crew doing EMS work primarily is responsible for patient care, firefighter care, and management of the Medical Group.

Patient Care

Patient care is the most basic function of EMS. It occurs on a day-to-day basis. For the purposes of this class, this function refers to care of patients at incidents involving other fire department tactical operations.

Patient care does not have to be provided by personnel assigned to an ambulance or EMS unit. It can be provided in a treatment area or Rehab Area at the scene of any incident by EMS-trained firefighters. In many jurisdictions, EMS-trained firefighters respond on engines or squads to provide patient care until an ambulance arrives for transport to the appropriate hospital.

Firefighter Care/Rehab/Medical Monitoring

Firefighter care involves the EMS tactical operations of rehab and medical monitoring. Rehab provides an opportunity to prevent firefighter injuries. It includes cool down, rehydration, and rest for firefighters and other responders. Minor injuries can be treated, and signs of exhaustion, heat stress or emotional stress can be identified.

Responder Rehab should be considered by the IC during the initial planning stages of an emergency response. The climatic or environmental conditions of the emergency scene should not be the sole justification for establishing Rehab. Any incident or activity that is large in size, long in duration, or labor intensive will rapidly deplete the energy and strength of personnel.

The “two air bottle rule,” or 45 minutes of work time, is recommended as an acceptable level of effort prior to mandatory Rehab. Rest should not be less than 10 minutes, but may exceed an hour as determined by the EMS crew evaluating personnel in Rehab. Personnel being “rehabbed” should maintain a high level of hydration, drinking the equivalent of at least one quart of water per hour.

Medical monitoring is another EMS tactical operation. Hazmat entry teams are required by NFPA standards and federal regulations to undergo medical monitoring prior to entry and immediately after entry into a designated “hot zone.” This monitoring involves taking and recording vital signs, weight and an electrocardiogram (EKG). Many departments conduct medical monitoring at other types of incidents as well.

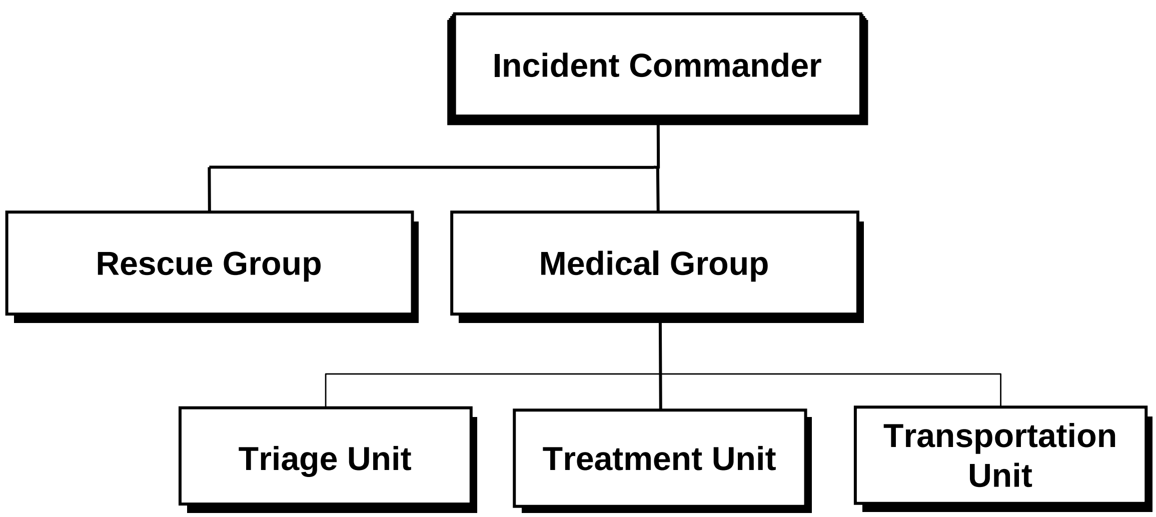
Medical Group Management

At MCIs, it is critical that an effective ICS structure be set up as quickly as possible. This structure includes the Medical Group. Tactical operations within the Medical Group include Transportation, Triage and Treatment. These functions typically are designated as "units" within ICS and often operate in specified areas at an incident.

The Transportation Unit may be part of the Medical Group, or may be a separate group depending upon the size, scope and complexity of the incident. The Transportation Unit typically is responsible for coordinating EMS transportation resources, managing the disposition of patients (destination and their condition upon transport), and communicating with hospitals regarding patients en route. This function must be performed by EMS-trained firefighters who understand their role in the ICS.

The triage, or sorting of patients by severity of injury, must be done by EMS-trained personnel. The same is true for the treatment of injured victims. All EMS tasks must be coordinated as part of an overall incident management system. This aspect of an MCI cannot be accomplished in a vacuum, as other incident operations may be predicated on patient care.

The Medical Group supervisor reports directly to the IC (unless Operations has been established) and supervises the Transportation Unit leader, Triage Unit leader, Treatment Unit leader, and (for major incidents) the medical supply coordinator. The Medical Group supervisor controls the activities of a Medical Group to ensure the best possible emergency medical care to patients during an MCI. Thus, the Medical Group supervisor normally does not perform patient care and, in fact, may operate with the IC at the CP.



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Activity 7.1

Tactical Company Operations

Purpose

To identify and assess tactical company operations at a structural fire incident.

Directions

1. Read the Scenario Description Sheet on the next page.
2. Examine the slides and the Plot Plan/Floor Plan for the incident.
3. Working individually, determine your strategy and tactics for the incident.
4. On the Plot Plan/Floor Plan in your Student Manual (SM), indicate the following:
    a. Where apparatus will be placed.
    b. Where the hoseline(s) will be advanced, their size, and gpm.
    c. Where ladders will be placed and where ventilation will be accomplished.
    d. Where the RIC crew will be staged.
    e. Where Rehab will be set up.
5. Be prepared to answer the following questions:
    a. Who performed primary search, and where?

    ____

    ____

    b. What assistance did the truck company crew provide to the engine company crews?

    ____

    ____

c. What type of ventilation was used?

____

____

d. What size and type of nozzles were used?

____

____

6. You will have five to 10 minutes for individual work before a class discussion of the incident.

Activity 7.1 (cont'd)

Scenario Description Sheet

Building Description

30' x 40', two-story dwelling, wood frame, platform construction.

Exposures

The closest other structure is on Side D and is not considered an exposure problem.

Water Supply

Use the predominant supply in your response area (hydrant or nonhydrant).

Weather

The same as today.

Resources Available

Use the consensus resources that would respond to such an incident in your area.

If no truck is provided, consider which of the resources is doing the truck work.

If no squad/rescue is provided, consider which of the resources is doing the rescue work.

If no ambulance is provided, consider which of the resources is doing the EMS work.

Fire Description

It is 0630 hours, Sunday.

The second-floor bedroom over the kitchen is well involved. Flashover has occurred.

Fire is showing from the bedroom window on Side C, and smoke is coming from an attic vent. The fire is spreading into the hall at the top of the stairs.

Smoke conditions are heavy on the second floor and light to medium on the first floor.

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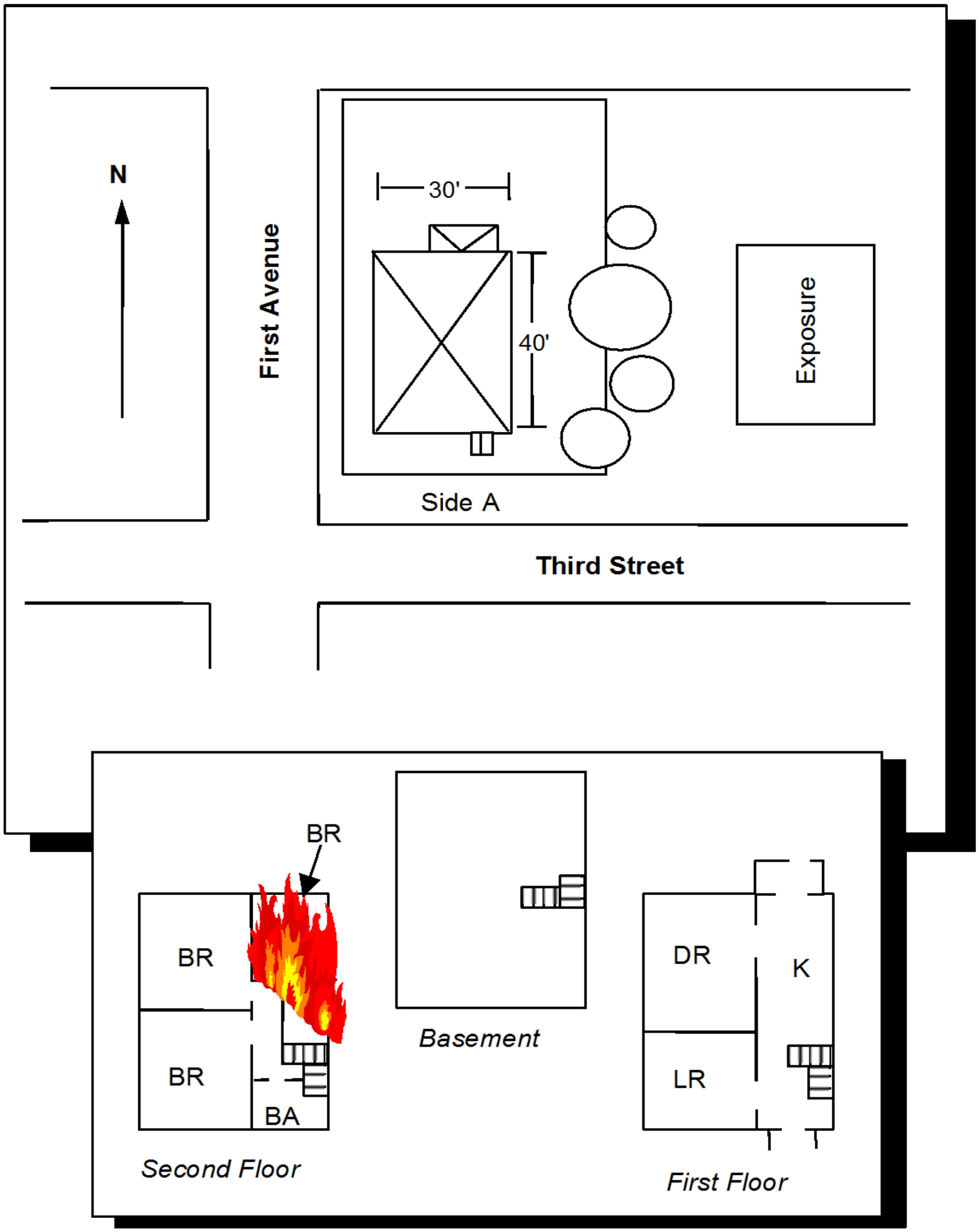
Activity 7.1 (cont'd)

Plot Plan/Floor Plan



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SUMMARY

Tactical company operations are an important component of Command and control during emergency incidents. These functions must be performed regardless of how resources — personnel and equipment — are designated by the department. Tactical company operations include

- "Truck work" — forced entry, search (primary and secondary), and ventilation.
- "Engine work" — water supply, apparatus placement, attack type and attack placement.
- "Rescue work" — victim access, disentanglement, victim removal and RICs.
- "EMS work" — patient care, firefighter care (rehab and medical monitoring), and management of the Medical Group.

Strategies and staffing for tactical company operations will vary depending on many factors, including incident type, magnitude and complexity, available resources, and department policy. Officers must thoroughly understand tactical company operations in order to make proper and effective decisions during emergency response.

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APPENDIX

ICS FORMS CATALOG

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National Incident Management System Incident Command System

FEMA

ICS Forms

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NATIONAL INCIDENT MANAGEMENT SYSTEM
INCIDENT COMMAND SYSTEM

ICS FORMS BOOKLET
FEMA 502-2

September 2010

INTRODUCTION TO ICS FORMS

The National Incident Management System (NIMS) Incident Command System (ICS) Forms Booklet, FEMA 502-2, is designed to assist emergency response personnel in the use of ICS and corresponding documentation during incident operations. This booklet is a companion document to the NIMS ICS Field Operations Guide (FOG), FEMA 502-1, which provides general guidance to emergency responders on implementing ICS. This booklet is meant to complement existing incident management programs and does not replace relevant emergency operations plans, laws, and ordinances. These forms are designed for use within the Incident Command System, and are not targeted for use in Area Command or in multiagency coordination systems.

These forms are intended for use as tools for the creation of Incident Action Plans (IAPs), for other incident management activities, and for support and documentation of ICS activities. Personnel using the forms should have a basic understanding of NIMS, including ICS, through training and/or experience to ensure they can effectively use and understand these forms. These ICS Forms represent an all-hazards approach and update to previously used ICS Forms. While the layout and specific blocks may have been updated, the functionality of the forms remains the same. It is recommended that all users familiarize themselves with the updated forms and instructions.

A general description of each ICS Form's purpose, suggested preparation, and distribution are included immediately after the form, including block-by-block completion instructions to ensure maximum clarity on specifics, or for those personnel who may be unfamiliar with the forms.

The ICS organizational charts contained in these forms are examples of how an ICS organization is typically developed for incident response. However, the flexibility and scalability of ICS allow modifications, as needed, based on experience and particular incident requirements.

These forms are designed to include the essential data elements for the ICS process they address. The use of these standardized ICS Forms is encouraged to promote consistency in the management and documentation of incidents in the spirit of NIMS, and to facilitate effective use of mutual aid. In many cases, additional pages can be added to the existing ICS Forms when needed, and several forms are set up with this specific provision. The section after the ICS Forms List provides details on adding appendixes or fields to the forms for jurisdiction- or discipline-specific needs.

It may be appropriate to compile and maintain other NIMS-related forms with these ICS Forms, such as resource management and/or ordering forms that are used to support incidents. Examples of these include the following Emergency Management Assistance Compact (EMAC) forms: REQ-A (Interstate Mutual Aid Request), Reimbursement Form R-1 (Interstate Reimbursement Form), and Reimbursement Form R-2 (Intrastate Reimbursement Form).

ICS FORMS LIST

This table lists all of the ICS Forms included in this publication.

Notes:

- In the following table, the ICS Forms identified with an asterisk (*) are typically included in an IAP.
- Forms identified with two asterisks (**) are additional forms that could be used in the IAP.
- The other ICS Forms are used in the ICS process for incident management activities, but are not typically included in the IAP.
- The date and time entered in the form blocks should be determined by the Incident Command or Unified Command. Local time is typically used.

ICS Form #:	Form Title:	Typically Prepared by:
ICS 201	**Incident Briefing**	Initial Incident Commander
***ICS 202**	**Incident Objectives**	Planning Section Chief
***ICS 203**	**Organization Assignment List**	Resources Unit Leader
***ICS 204**	**Assignment List**	Resources Unit Leader and Operations Section Chief
***ICS 205**	**Incident Radio Communications Plan**	Communications Unit Leader
****ICS 205A**	**Communications List**	Communications Unit Leader
***ICS 206**	**Medical Plan**	Medical Unit Leader (reviewed by Safety Officer)
ICS 207	**Incident Organization Chart** *(wall-mount size, optional 8½" x 14")*	Resources Unit Leader
****ICS 208**	**Safety Message/Plan**	Safety Officer
ICS 209	**Incident Status Summary**	Situation Unit Leader
ICS 210	**Resource Status Change**	Communications Unit Leader
ICS 211	**Incident Check-In List** *(optional 8½" x 14" and 11" x 17")*	Resources Unit/Check-In Recorder
ICS 213	**General Message** *(3-part form)*	Any Message Originator
ICS 214	**Activity Log** *(optional 2-sided form)*	All Sections and Units
ICS 215	**Operational Planning Worksheet** *(optional 8½" x 14" and 11" x 17")*	Operations Section Chief
ICS 215A	**Incident Action Plan Safety Analysis**	Safety Officer
ICS 218	**Support Vehicle/Equipment Inventory** *(optional 8½" x 14" and 11" x 17")*	Ground Support Unit
ICS 219-1 to ICS 219-8, ICS 219-10 *(Cards)*	**Resource Status Card (T-Card)** *(may be printed on cardstock)*	Resources Unit
ICS 220	**Air Operations Summary Worksheet**	Operations Section Chief or Air Branch Director
ICS 221	**Demobilization Check-Out**	Demobilization Unit Leader
ICS 225	**Incident Personnel Performance Rating**	Supervisor at the incident

ICS FORM ADAPTION, EXTENSION, AND APPENDIXES

The ICS Forms in this booklet are designed to serve all-hazards, cross-discipline needs for incident management across the Nation. These forms include the essential data elements for the ICS process they address, and create a foundation within ICS for complex incident management activities. However, the flexibility and scalability of NIMS should allow for needs outside this foundation, so the following are possible mechanisms to add to, extend, or adapt ICS Forms when needed.

Because the goal of NIMS is to have a consistent nationwide approach to incident management, jurisdictions and disciplines are encouraged to use the ICS Forms as they are presented here – unless these forms do not meet an organization's particular incident management needs for some unique reason. If changes are needed, the focus on essential information elements should remain, and as such the spirit and intent of particular fields or "information elements" on the ICS Forms should remain intact to maintain consistency if the forms are altered. Modifications should be clearly indicated as deviations from or additions to the ICS Forms. The following approaches may be used to meet any unique needs.

ICS Form Adaptation

When agencies and organizations require specialized forms or information for particular kinds of incidents, events, or disciplines, it may be beneficial to utilize the essential data elements from a particular ICS Form to create a more localized or field-specific form. When this occurs, organizations are encouraged to use the relevant essential data elements and ICS Form number, but to clarify that the altered form is a specific organizational adaptation of the form. For example, an altered form should clearly indicate in the title that it has been changed to meet a specific need, such as "ICS 215A, Hazard Risk Analysis Worksheet, Adapted for Story County Hazmat Program."

Extending ICS Form Fields

Particular fields on an ICS Form may need to include further breakouts or additional related elements. If such additions are needed, the form itself should be clearly labeled as an adapted form (see above), and the additional sub-field numbers should be clearly labeled as unique to the adapted form. Letters or other indicators may be used to label the new sub-fields (if the block does not already include sub-fields).

Examples of possible field additions are shown below for the ICS 209:

- Block 2: Incident Number.
  - Block 2A (adapted): Full agency accounting cost charge number for primary authority having jurisdiction.
- Block 29: Primary Materials or Hazards Involved (hazardous chemicals, fuel types, infectious agents, radiation, etc.).
  - Block 29A (adapted): Indicate specific wildland fire fuel model number.

Creating ICS Form Appendixes

Certain ICS Forms may require appendixes to include additional information elements needed by a particular jurisdiction or discipline. When an appendix is needed for a given form, it is expected that the jurisdiction or discipline will determine standardized fields for such an appendix and make the form available as needed.

Any ICS Form appendixes should be clearly labeled with the form name and an indicator that it is a discipline- or jurisdiction-specific appendix. Appendix field numbering should begin following the last identified block in the corresponding ICS Form.

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	**2. Incident Number:**	**3. Date/Time Initiated:** Date: Time:

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)**:**

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command)**:** Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name: __________________ Position/Title: __________________Signature: ___________________

 Date/Time: ____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	**2. Incident Number:**	**3. Date/Time Initiated:** Date: Time:

7. Current and Planned Objectives:

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:

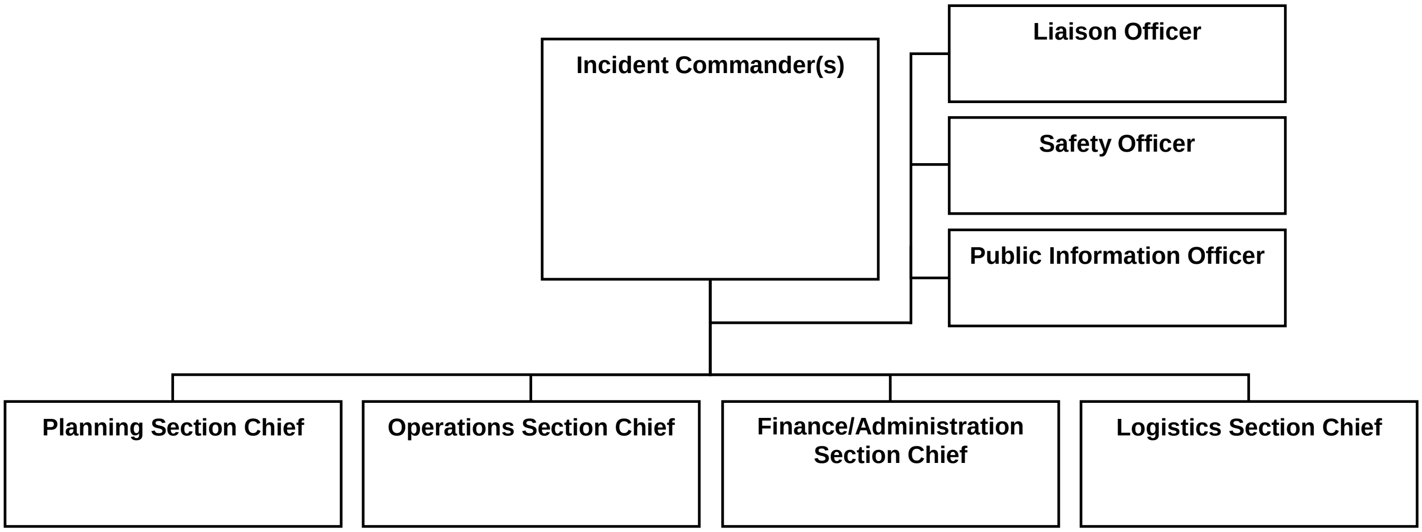
6. Prepared by: Name: ___________________ Position/Title: ___________________ Signature: ___________________

Date/Time: ____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	**2. Incident Number:**	**3. Date/Time Initiated:** Date: Time:

9. Current Organization (fill in additional organization as appropriate)**:**



6. Prepared by: Name: ________________ Position/Title: ________________ Signature: ________________

Date/Time: ____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	**2. Incident Number:**	**3. Date/Time Initiated:** Date: Time:

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

6. Prepared by: Name: ___________________ Position/Title: __________________Signature: ___________________

ICS 201, Page 4 Date/Time: ____

ICS 201
Incident Briefing

Purpose. The Incident Briefing (ICS 201) provides the Incident Commander (and the Command and General Staffs) with basic information regarding the incident situation and the resources allocated to the incident. In addition to a briefing document, the ICS 201 also serves as an initial action worksheet. It serves as a permanent record of the initial response to the incident.

Preparation. The briefing form is prepared by the Incident Commander for presentation to the incoming Incident Commander along with a more detailed oral briefing.

Distribution. Ideally, the ICS 201 is duplicated and distributed before the initial briefing of the Command and General Staffs or other responders as appropriate. The “Map/Sketch” and “Current and Planned Actions, Strategies, and Tactics” sections (pages 1–2) of the briefing form are given to the Situation Unit, while the “Current Organization” and “Resource Summary” sections (pages 3–4) are given to the Resources Unit.

Notes:

- The ICS 201 can serve as part of the initial Incident Action Plan (IAP).
- If additional pages are needed for any form page, use a blank ICS 201 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Initiated** • Date, Time	Enter date initiated (month/day/year) and time initiated (using the 24-hour clock).
4	**Map/Sketch** (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)	Show perimeter and other graphics depicting situational status, resource assignments, incident facilities, and other special information on a map/sketch or with attached maps. Utilize commonly accepted ICS map symbology. If specific geospatial reference points are needed about the incident’s location or area outside the ICS organization at the incident, that information should be submitted on the Incident Status Summary (ICS 209). North should be at the top of page unless noted otherwise.
5	**Situation Summary and Health and Safety Briefing (**for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.	Self-explanatory.
6	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
7	**Current and Planned Objectives**	Enter the objectives used on the incident and note any specific problem areas.

Block Number	Block Title	Instructions
8	**Current and Planned Actions, Strategies, and Tactics** • Time • Actions	Enter the current and planned actions, strategies, and tactics and time they may or did occur to attain the objectives. If additional pages are needed, use a blank sheet or another ICS 201 (Page 2), and adjust page numbers accordingly.
9	**Current Organization** (fill in additional organization as appropriate) • Incident Commander(s) • Liaison Officer • Safety Officer • Public Information Officer • Planning Section Chief • Operations Section Chief • Finance/Administration Section Chief • Logistics Section Chief	• Enter on the organization chart the names of the individuals assigned to each position. • Modify the chart as necessary, and add any lines/spaces needed for Command Staff Assistants, Agency Representatives, and the organization of each of the General Staff Sections. • If Unified Command is being used, split the Incident Commander box. • Indicate agency for each of the Incident Commanders listed if Unified Command is being used.
10	**Resource Summary**	Enter the following information about the resources allocated to the incident. If additional pages are needed, use a blank sheet or another ICS 201 (Page 4), and adjust page numbers accordingly.
	• Resource	Enter the number and appropriate category, kind, or type of resource ordered.
	• Resource Identifier	Enter the relevant agency designator and/or resource designator (if any).
	• Date/Time Ordered	Enter the date (month/day/year) and time (24-hour clock) the resource was ordered.
	• ETA	Enter the estimated time of arrival (ETA) to the incident (use 24-hour clock).
	• Arrived	Enter an “X” or a checkmark upon arrival to the incident.
	• Notes (location/ assignment/status)	Enter notes such as the assigned location of the resource and/or the actual assignment and status.

INCIDENT OBJECTIVES (ICS 202)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Objective(s):

4. Operational Period Command Emphasis:

General Situational Awareness

5. Site Safety Plan Required? Yes ☐ No ☐
Approved Site Safety Plan(s) Located at:

6. Incident Action Plan (the items checked below are included in this Incident Action Plan)**:**

☐ ICS 203	☐ ICS 207	Other Attachments:
☐ ICS 204	☐ ICS 208	☐ ____________________
☐ ICS 205	☐ Map/Chart	☐ ____________________
☐ ICS 205A	☐ Weather Forcast/Tides/Currents	☐ ____________________
☐ ICS 206		☐ ____________________

7. Prepared by: Name: __________________ Position/Title: __________________Signature: __________________

8. Approved by Incident Commander: Name: ______________________ Signature: ______________________

ICS 202	**IAP Page** _____	Date/Time: ____________________________________

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ICS 202
Incident Objectives

Purpose. The Incident Objectives (ICS 202) describes the basic incident strategy, incident objectives, command emphasis/priorities, and safety considerations for use during the next operational period.

Preparation. The ICS 202 is completed by the Planning Section following each Command and General Staff meeting conducted to prepare the Incident Action Plan (IAP). In case of a Unified Command, one Incident Commander (IC) may approve the ICS 202. If additional IC signatures are used, attach a blank page.

Distribution. The ICS 202 may be reproduced with the IAP and may be part of the IAP and given to all supervisory personnel at the Section, Branch, Division/Group, and Unit levels. All completed original forms must be given to the Documentation Unit.

Notes:
- The ICS 202 is part of the IAP and can be used as the opening or cover page.
- If additional pages are needed, use a blank ICS 202 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident. If needed, an incident number can be added.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Objective(s)**	Enter clear, concise statements of the objectives for managing the response. Ideally, these objectives will be listed in priority order. These objectives are for the incident response for this operational period as well as for the duration of the incident. Include alternative and/or specific tactical objectives as applicable. Objectives should follow the SMART model or a similar approach: **S**pecific – Is the wording precise and unambiguous? **M**easurable – How will achievements be measured? **A**ction-oriented – Is an action verb used to describe expected accomplishments? **R**ealistic – Is the outcome achievable with given available resources? **T**ime-sensitive – What is the timeframe?
4	**Operational Period Command Emphasis**	Enter command emphasis for the operational period, which may include tactical priorities or a general weather forecast for the operational period. It may be a sequence of events or order of events to address. This is not a narrative on the objectives, but a discussion about where to place emphasis if there are needs to prioritize based on the Incident Commander's or Unified Command's direction. Examples: Be aware of falling debris, secondary explosions, etc.
	General Situational Awareness	General situational awareness may include a weather forecast, incident conditions, and/or a general safety message. If a safety message is included here, it should be reviewed by the Safety Officer to ensure it is in alignment with the Safety Message/Plan (ICS 208).
5	**Site Safety Plan Required?** Yes ☐ No ☐	Safety Officer should check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter the location of the approved Site Safety Plan(s).

Block Number	Block Title	Instructions
6	**Incident Action Plan** (the items checked below are included in this Incident Action Plan): ☐ ICS 203 ☐ ICS 204 ☐ ICS 205 ☐ ICS 205A ☐ ICS 206 ☐ ICS 207 ☐ ICS 208 ☐ Map/Chart ☐ Weather Forecast/ Tides/Currents Other Attachments:	Check appropriate forms and list other relevant documents that are included in the IAP. ☐ ICS 203 – Organization Assignment List ☐ ICS 204 – Assignment List ☐ ICS 205 – Incident Radio Communications Plan ☐ ICS 205A – Communications List ☐ ICS 206 – Medical Plan ☐ ICS 207 – Incident Organization Chart ☐ ICS 208 – Safety Message/Plan
7	**Prepared by** • Name • Position/Title • Signature	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by Incident Commander** • Name • Signature • Date/Time	In the case of a Unified Command, one IC may approve the ICS 202. If additional IC signatures are used, attach a blank page.

ORGANIZATION ASSIGNMENT LIST (ICS 203)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Incident Commander(s) and Command Staff:

IC/UCs	
Deputy	
Safety Officer	
Public Info. Officer	
Liaison Officer	

4. Agency/Organization Representatives:

Agency/Organization	Name

5. Planning Section:

Chief	
Deputy	
Resources Unit	
Situation Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	

6. Logistics Section:

Chief	
Deputy	
Support Branch	
Director	
Supply Unit	
Facilities Unit	
Ground Support Unit	
Service Branch	
Director	
Communications Unit	
Medical Unit	
Food Unit	

7. Operations Section:

Chief		
Deputy		
Staging Area		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Air Operations Branch		
Air Ops Branch Dir.		

8. Finance/Administration Section:

Chief	
Deputy	
Time Unit	
Procurement Unit	
Comp/Claims Unit	
Cost Unit	

9. Prepared by: Name: ____________________ Position/Title: ____________________ Signature: ____________________

ICS 203 | **IAP Page** _____ | Date/Time: ____

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ICS 203
Organization Assignment List

Purpose. The Organization Assignment List (ICS 203) provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit. It is used to complete the Incident Organization Chart (ICS 207) which is posted on the Incident Command Post display. An actual organization will be incident or event-specific. **Not all positions need to be filled.** Some blocks may contain more than one name. The size of the organization is dependent on the magnitude of the incident, and can be expanded or contracted as necessary.

Preparation. The Resources Unit prepares and maintains this list under the direction of the Planning Section Chief. Complete only the blocks for the positions that are being used for the incident. If a trainee is assigned to a position, indicate this with a "T" in parentheses behind the name (e.g., "A. Smith (T)").

Distribution. The ICS 203 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:
- The ICS 203 serves as part of the IAP.
- If needed, more than one name can be put in each block by inserting a slash.
- If additional pages are needed, use a blank ICS 203 and repaginate as needed.
- ICS allows for organizational flexibility, so the Intelligence/Investigations Function can be embedded in several different places within the organizational structure.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Incident Commander(s) and Command Staff** • IC/UCs • Deputy • Safety Officer • Public Information Officer • Liaison Officer	Enter the names of the Incident Commander(s) and Command Staff. Label Assistants to Command Staff as such (for example, "Assistant Safety Officer"). For all individuals, use at least the first initial and last name. For Unified Command, also include agency names.
4	**Agency/Organization Representatives** • Agency/Organization • Name	Enter the agency/organization names and the names of their representatives. For all individuals, use at least the first initial and last name.
5	**Planning Section** • Chief • Deputy • Resources Unit • Situation Unit • Documentation Unit • Demobilization Unit • Technical Specialists	Enter the name of the Planning Section Chief, Deputy, and Unit Leaders after each position title. List Technical Specialists with an indication of specialty. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.

Block Number	Block Title	Instructions
6	**Logistics Section** • Chief • Deputy **Support Branch** • Director • Supply Unit • Facilities Unit • Ground Support Unit **Service Branch** • Director • Communications Unit • Medical Unit • Food Unit	Enter the name of the Logistics Section Chief, Deputy, Branch Directors, and Unit Leaders after each position title. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
7	**Operations Section** • Chief • Deputy • Staging Area **Branch** • Branch Director • Deputy • Division/Group **Air Operations Branch** • Air Operations Branch Director	Enter the name of the Operations Section Chief, Deputy, Branch Director(s), Deputies, and personnel staffing each of the listed positions. For Divisions/Groups, enter the Division/Group identifier in the left column and the individual's name in the right column. Branches and Divisions/Groups may be named for functionality or by geography. For Divisions/Groups, indicate Division/Group Supervisor. Use an additional page if more than three Branches are activated. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
8	**Finance/Administration Section** • Chief • Deputy • Time Unit • Procurement Unit • Compensation/Claims Unit • Cost Unit	Enter the name of the Finance/Administration Section Chief, Deputy, and Unit Leaders after each position title. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

ASSIGNMENT LIST (ICS 204)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:	**3.** **Branch:** **Division:** **Group:** **Staging Area:**

4. Operations Personnel: Name Contact Number(s)

Operations Section Chief: ______________________

Branch Director: ______________________

Division/Group Supervisor: ______________________

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact (e.g., phone, pager, radio frequency, etc.)	Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information

6. Work Assignments:

7. Special Instructions:

8. Communications (radio and/or phone contact numbers needed for this assignment)**:**

Name/Function	Primary Contact: indicate cell, pager, or radio (frequency/system/channel)
/	
/	
/	
/	

9. Prepared by: Name: ____________ Position/Title: ____________ Signature: ____________

ICS 204 | **IAP Page** _____ | Date/Time: ____________

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ICS 204
Assignment List

Purpose. The Assignment List(s) (ICS 204) informs Division and Group supervisors of incident assignments. Once the Command and General Staffs agree to the assignments, the assignment information is given to the appropriate Divisions and Groups.

Preparation. The ICS 204 is normally prepared by the Resources Unit, using guidance from the Incident Objectives (ICS 202), Operational Planning Worksheet (ICS 215), and the Operations Section Chief. It must be approved by the Incident Commander, but may be reviewed and initialed by the Planning Section Chief and Operations Section Chief as well.

Distribution. The ICS 204 is duplicated and attached to the ICS 202 and given to all recipients as part of the Incident Action Plan (IAP). In some cases, assignments may be communicated via radio/telephone/fax. All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 204 details assignments at Division and Group levels and is part of the IAP.
- Multiple pages/copies can be used if needed.
- If additional pages are needed, use a blank ICS 204 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Branch** **Division** **Group** **Staging Area**	This block is for use in a large IAP for reference only. Write the alphanumeric abbreviation for the Branch, Division, Group, and Staging Area (e.g., "Branch 1," "Division D," "Group 1A") in large letters for easy referencing.
4	**Operations Personnel** • Name, Contact Number(s) – Operations Section Chief – Branch Director – Division/Group Supervisor	Enter the name and contact numbers of the Operations Section Chief, applicable Branch Director(s), and Division/Group Supervisor(s).
5	**Resources Assigned**	Enter the following information about the resources assigned to the Division or Group for this period:
	• Resource Identifier	The identifier is a unique way to identify a resource (e.g., ENG-13, IA-SCC-413). If the resource has been ordered but no identification has been received, use TBD (to be determined).
	• Leader	Enter resource leader's name.
	• # of Persons	Enter total number of persons for the resource assigned, including the leader.
	• Contact (e.g., phone, pager, radio frequency, etc.)	Enter primary means of contacting the leader or contact person (e.g., radio, phone, pager, etc.). Be sure to include the area code when listing a phone number.
5 (continued)	• Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information	Provide special notes or directions specific to this resource. If required, add notes to indicate: (1) specific location/time where the resource should report or be dropped off/picked up; (2) special equipment and supplies that will be used or needed; (3) whether or not the resource received briefings; (4) transportation needs; or (5) other information.

Block Number	Block Title	Instructions
6	**Work Assignments**	Provide a statement of the tactical objectives to be achieved within the operational period by personnel assigned to this Division or Group.
7	**Special Instructions**	Enter a statement noting any safety problems, specific precautions to be exercised, dropoff or pickup points, or other important information.
8	**Communications** (radio and/or phone contact numbers needed for this assignment) • Name/Function • Primary Contact: indicate cell, pager, or radio (frequency/system/channel)	Enter specific communications information (including emergency numbers) for this Branch/Division/Group. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics. In light of potential IAP distribution, use sensitivity when including cell phone number. Add a secondary contact (phone number or radio) if needed.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	**2. Date/Time Prepared:** Date: Time:	**3. Operational Period:** Date From: Date To: Time From: Time To:

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks

5. Special Instructions:

6. Prepared by (Communications Unit Leader)**:** Name: ______________________________ Signature: ______________________________

ICS 205 | **IAP Page** _____ | Date/Time: ______________________________

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ICS 205
Incident Radio Communications Plan

Purpose. The Incident Radio Communications Plan (ICS 205) provides information on all radio frequency or trunked radio system talkgroup assignments for each operational period. The plan is a summary of information obtained about available radio frequencies or talkgroups and the assignments of those resources by the Communications Unit Leader for use by incident responders. Information from the Incident Radio Communications Plan on frequency or talkgroup assignments is normally placed on the Assignment List (ICS 204).

Preparation. The ICS 205 is prepared by the Communications Unit Leader and given to the Planning Section Chief for inclusion in the Incident Action Plan.

Distribution. The ICS 205 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit. Information from the ICS 205 is placed on Assignment Lists.

Notes:
- The ICS 205 is used to provide, in one location, information on all radio frequency assignments down to the Division/Group level for each operational period.
- The ICS 205 serves as part of the IAP.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Date/Time Prepared**	Enter date prepared (month/day/year) and time prepared (using the 24-hour clock).
3	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
4	**Basic Radio Channel Use**	Enter the following information about radio channel use:
	Zone Group	
	Channel Number	Use at the Communications Unit Leader's discretion. Channel Number (Ch #) may equate to the channel number for incident radios that are programmed or cloned for a specific Communications Plan, or it may be used just as a reference line number on the ICS 205 document.
	Function	Enter the Net function each channel or talkgroup will be used for (Command, Tactical, Ground-to-Air, Air-to-Air, Support, Dispatch).
	Channel Name/Trunked Radio System Talkgroup	Enter the nomenclature or commonly used name for the channel or talk group such as the National Interoperability Channels which follow DHS frequency Field Operations Guide (FOG).
	Assignment	Enter the name of the ICS Branch/Division/Group/Section to which this channel/talkgroup will be assigned.
	RX (Receive) Frequency (N or W)	Enter the Receive Frequency (RX Freq) as the mobile or portable subscriber would be programmed using xxx.xxxx out to four decimal places, followed by an "N" designating narrowband or a "W" designating wideband emissions. The name of the specific trunked radio system with which the talkgroup is associated may be entered across all fields on the ICS 205 normally used for conventional channel programming information.
	RX Tone/NAC	Enter the Receive Continuous Tone Coded Squelch System (CTCSS) subaudible tone (RX Tone) or Network Access Code (RX NAC) for the receive frequency as the mobile or portable subscriber would be programmed.

Block Number	Block Title	Instructions
4 (continued)	TX (Transmit) Frequency (N or W)	Enter the Transmit Frequency (TX Freq) as the mobile or portable subscriber would be programmed using xxx.xxxx out to four decimal places, followed by an “N” designating narrowband or a “W” designating wideband emissions.
	TX Tone/NAC	Enter the Transmit Continuous Tone Coded Squelch System (CTCSS) subaudible tone (TX Tone) or Network Access Code (TX NAC) for the transmit frequency as the mobile or portable subscriber would be programmed.
	Mode (A, D, or M)	Enter “A” for analog operation, “D” for digital operation, or “M” for mixed mode operation.
	Remarks	Enter miscellaneous information concerning repeater locations, information concerning patched channels or talkgroups using links or gateways, etc.
5	**Special Instructions**	Enter any special instructions (e.g., using cross-band repeaters, secure-voice, encoders, private line (PL) tones, etc.) or other emergency communications needs). If needed, also include any special instructions for handling an incident within an incident.
6	**Prepared by** (Communications Unit Leader) • Name • Signature • Date/Time	Enter the name and signature of the person preparing the form, typically the Communications Unit Leader. Enter date (month/day/year) and time prepared (24-hour clock).

COMMUNICATIONS LIST (ICS 205A)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)

4. Prepared by: Name: ___________________ Position/Title: ___________________Signature: ___________________

ICS 205A	**IAP Page** _____	Date/Time: ____

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ICS 205A
Communications List

Purpose. The Communications List (ICS 205A) records methods of contact for incident personnel. While the Incident Radio Communications Plan (ICS 205) is used to provide information on all radio frequencies down to the Division/Group level, the ICS 205A indicates all methods of contact for personnel assigned to the incident (radio frequencies, phone numbers, pager numbers, etc.), and functions as an incident directory.

Preparation. The ICS 205A can be filled out during check-in and is maintained and distributed by Communications Unit personnel. This form should be updated each operational period.

Distribution. The ICS 205A is distributed within the ICS organization by the Communications Unit, and posted as necessary. All completed original forms must be given to the Documentation Unit. If this form contains sensitive information such as cell phone numbers, it should be clearly marked in the header that it contains sensitive information and is not for public release.

Notes:

- The ICS 205A is an optional part of the Incident Action Plan (IAP).
- This optional form is used in conjunction with the ICS 205.
- If additional pages are needed, use a blank ICS 205A and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Basic Local Communications Information**	Enter the communications methods assigned and used for personnel by their assigned ICS position.
	• Incident Assigned Position	Enter the ICS organizational assignment.
	• Name	Enter the name of the assigned person.
	• Method(s) of Contact (phone, pager, cell, etc.)	For each assignment, enter the radio frequency and contact number(s) to include area code, etc. If applicable, include the vehicle license or ID number assigned to the vehicle for the incident (e.g., HAZMAT 1, etc.).
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

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MEDICAL PLAN (ICS 206)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Medical Aid Stations:

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

4. Transportation (indicate air or ground)**:**

Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS

5. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
					☐ Yes Level:_____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:_____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:_____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:_____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:_____	☐ Yes ☐ No	☐ Yes ☐ No

6. Special Medical Emergency Procedures:

☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.

7. Prepared by (Medical Unit Leader)**:** Name: _________________________ Signature: _________________________

8. Approved by (Safety Officer)**:** Name: ___________________________ Signature: ___________________________

ICS 206	**IAP Page** _____	Date/Time: ____

ICS 206
Medical Plan

Purpose. The Medical Plan (ICS 206) provides information on incident medical aid stations, transportation services, hospitals, and medical emergency procedures.

Preparation. The ICS 206 is prepared by the Medical Unit Leader and reviewed by the Safety Officer to ensure ICS coordination. If aviation assets are utilized for rescue, coordinate with Air Operations.

Distribution. The ICS 206 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). Information from the plan pertaining to incident medical aid stations and medical emergency procedures may be noted on the Assignment List (ICS 204). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 206 serves as part of the IAP.
- This form can include multiple pages.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Medical Aid Stations**	Enter the following information on the incident medical aid station(s):
	• Name	Enter name of the medical aid station.
	• Location	Enter the location of the medical aid station (e.g., Staging Area, Camp Ground).
	• Contact Number(s)/Frequency	Enter the contact number(s) and frequency for the medical aid station(s).
	• Paramedics on Site? ☐ Yes ☐ No	Indicate (yes or no) if paramedics are at the site indicated.
4	**Transportation** (indicate air or ground)	Enter the following information for ambulance services available to the incident:
	• Ambulance Service	Enter name of ambulance service.
	• Location	Enter the location of the ambulance service.
	• Contact Number(s)/Frequency	Enter the contact number(s) and frequency for the ambulance service.
	• Level of Service ☐ ALS ☐ BLS	Indicate the level of service available for each ambulance, either ALS (Advanced Life Support) or BLS (Basic Life Support).

Block Number	Block Title	Instructions
5	**Hospitals**	Enter the following information for hospital(s) that could serve this incident:
	• Hospital Name	Enter hospital name and identify any predesignated medivac aircraft by name a frequency.
	• Address, Latitude & Longitude if Helipad	Enter the physical address of the hospital and the latitude and longitude if the hospital has a helipad.
	• Contact Number(s)/ Frequency	Enter the contact number(s) and/or communications frequency(s) for the hospital.

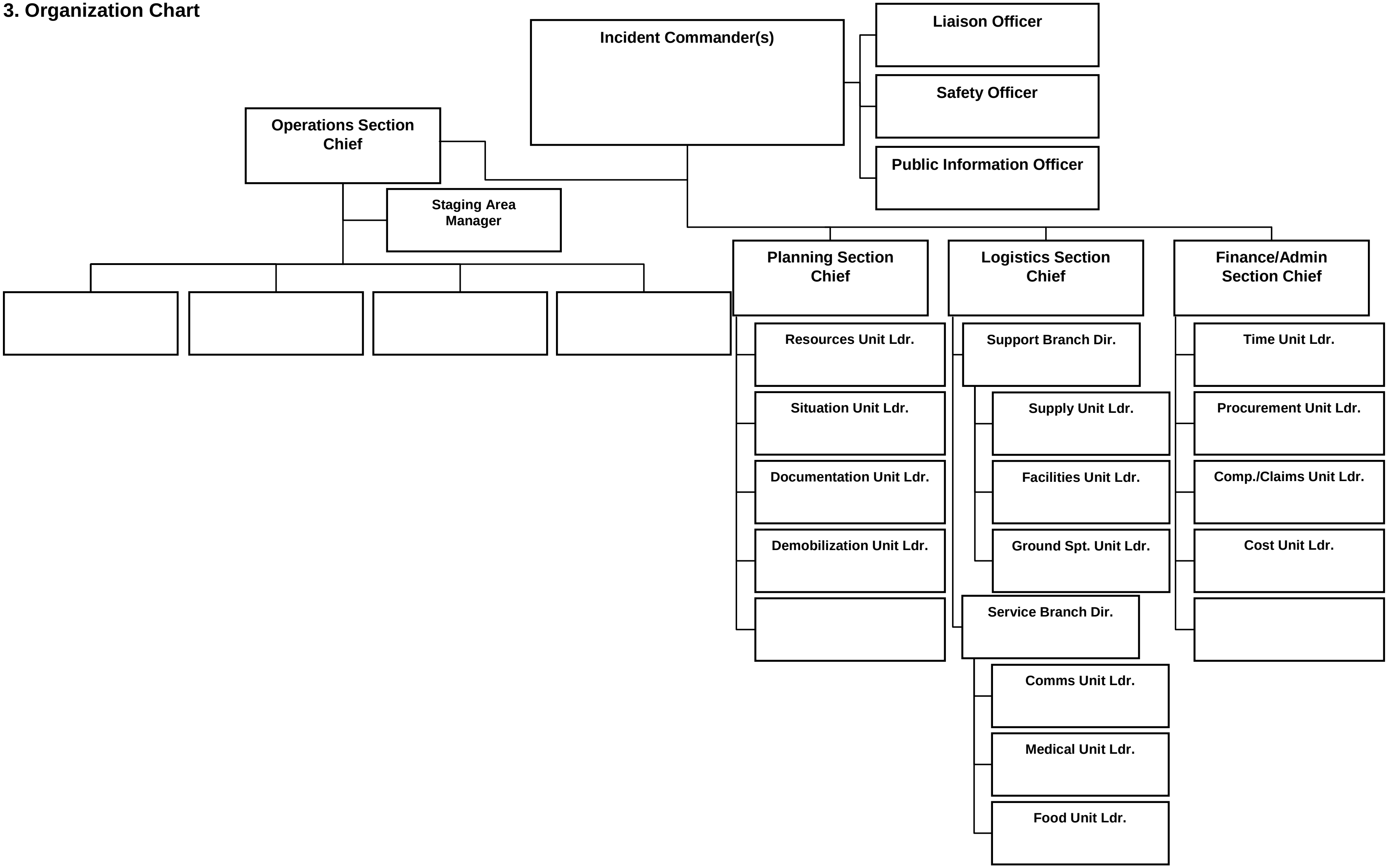
	• Travel Time
	  • Air
	  • Ground
		Enter the travel time by air and ground from the incident to the hospital.

	• Trauma Center ☐ Yes Level:______	Indicate yes and the trauma level if the hospital has a trauma center.
	• Burn Center ☐ Yes ☐ No	Indicate (yes or no) if the hospital has a burn center.
	• Helipad ☐ Yes ☐ No	Indicate (yes or no) if the hospital has a helipad. Latitude and Longitude data format need to compliment Medical Evacuation Helicopters and Medical Air Resources
6	**Special Medical Emergency Procedures**	Note any special emergency instructions for use by incident personnel, including (1) who should be contacted, (2) how should they be contacted; and (3) who manages an incident within an incident due to a rescue, accident, etc. Include procedures for how to report medical emergencies.
	☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.	Self explanatory. Incident assigned aviation assets should be included in ICS 220.
7	**Prepared by** (Medical Unit Leader) • Name • Signature	Enter the name and signature of the person preparing the form, typically the Medical Unit Leader. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by** (Safety Officer) • Name • Signature • Date/Time	Enter the name of the person who approved the plan, typically the Safety Officer. Enter date (month/day/year) and time reviewed (24-hour clock).

INCIDENT ORGANIZATION CHART (ICS 207)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Organization Chart



ICS 207	**IAP Page** ___	**4. Prepared by:** Name:___________ Position/Title: ___________ Signature: ____________ Date/Time: _______

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ICS 207
Incident Organization Chart

Purpose. The Incident Organization Chart (ICS 207) provides a **visual wall chart** depicting the ICS organization position assignments for the incident. The ICS 207 is used to indicate what ICS organizational elements are currently activated and the names of personnel staffing each element. An actual organization will be event-specific. The size of the organization is dependent on the specifics and magnitude of the incident and is scalable and flexible. Personnel responsible for managing organizational positions are listed in each box as appropriate.

Preparation. The ICS 207 is prepared by the Resources Unit Leader and reviewed by the Incident Commander. Complete only the blocks where positions have been activated, and add additional blocks as needed, especially for Agency Representatives and all Operations Section organizational elements. For detailed information about positions, consult the NIMS ICS Field Operations Guide. The ICS 207 is intended to be used as a wall-size chart and printed on a plotter for better visibility. A chart is completed for each operational period, and updated when organizational changes occur.

Distribution. The ICS 207 is intended to be **wall mounted** at Incident Command Posts and other incident locations as needed, and is not intended to be part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 207 is intended to be **wall mounted** (printed on a plotter). Document size can be modified based on individual needs.
- Also available as 8½ x 14 (legal size) chart.
- ICS allows for organizational flexibility, so the Intelligence/Investigative Function can be embedded in several different places within the organizational structure.
- Use additional pages if more than three branches are activated. Additional pages can be added based on individual need (such as to distinguish more Division/Groups and Branches as they are activated).

Block Number	Block Title	Instructions
1	**Incident Name**	Print the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Organization Chart**	• Complete the incident organization chart. • For all individuals, use at least the first initial and last name. • List agency where it is appropriate, such as for Unified Commanders. • If there is a shift change during the specified operational period, list both names, separated by a slash.
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

SAFETY MESSAGE/PLAN (ICS 208)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:
3. Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan:	
4. Site Safety Plan Required? Yes ☐ No ☐ **Approved Site Safety Plan(s) Located At:**	
5. Prepared by: Name: ___________________ Position/Title: _________________ Signature: ____________________	
ICS 208	**IAP Page** _____ Date/Time: ____

ICS 208
Safety Message/Plan

Purpose. The Safety Message/Plan (ICS 208) expands on the Safety Message and Site Safety Plan.

Preparation. The ICS 208 is an optional form that may be included and completed by the Safety Officer for the Incident Action Plan (IAP).

Distribution. The ICS 208, if developed, will be reproduced with the IAP and given to all recipients as part of the IAP. All completed original forms must be given to the Documentation Unit.

Notes:
- The ICS 208 may serve (optionally) as part of the IAP.
- Use additional copies for continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan**	Enter clear, concise statements for safety message(s), priorities, and key command emphasis/decisions/directions. Enter information such as known safety hazards and specific precautions to be observed during this operational period. If needed, additional safety message(s) should be referenced and attached.
4	**Site Safety Plan Required?** Yes ☐ No ☐	Check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter where the approved Site Safety Plan(s) is located.
5	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

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INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**			**2. Incident Number:**	
***3. Report Version** (check one box on left)**:** ☐ Initial ☐ Update ☐ Final Rpt # (if used):	***4. Incident Commander(s) & Agency or Organization:**		**5. Incident Management Organization:**	***6. Incident Start Date/Time:** Date: _____ Time: _____ Time Zone: _____
7. Current Incident Size or Area Involved (use unit label – e.g., "sq mi," "city block")**:**	**8. Percent (%) Contained** _____ **Completed** _____	***9. Incident Definition:**	**10. Incident Complexity Level:**	***11. For Time Period:** From Date/Time: _____ To Date/Time: _____

Approval & Routing Information

***12. Prepared By:** Print Name: _____ ICS Position: _____ Date/Time Prepared: _____	***13. Date/Time Submitted:** **Time Zone:**
***14. Approved By:** Print Name: _____ ICS Position: _____ Signature: _____	***15. Primary Location, Organization, or Agency Sent To:**

Incident Location Information

***16. State:**	***17. County/Parish/Borough:**	***18. City:**
19. Unit or Other:	***20. Incident Jurisdiction:**	**21. Incident Location Ownership** (if different than jurisdiction)**:**
22. Longitude (indicate format)**:** **Latitude** (indicate format)**:**	**23. US National Grid Reference:**	**24. Legal Description** (township, section, range)**:**
***25. Short Location or Area Description** (list all affected areas or a reference point)**:**		**26. UTM Coordinates:**
27. Note any electronic geospatial data included or attached (indicate data format, content, and collection time information and labels)**:**		

Incident Summary

***28. Significant Events for the Time Period Reported** (summarize significant progress made, evacuations, incident growth, etc.)**:**

29. Primary Materials or Hazards Involved (hazardous chemicals, fuel types, infectious agents, radiation, etc.)**:**

30. Damage Assessment Information (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.)**:**	A. Structural Summary	B. # Threatened (72 hrs)	C. # Damaged	D. # Destroyed
	E. Single Residences			
	F. Nonresidential Commercial Property			
	Other Minor Structures			
	Other			

 ** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**	**2. Incident Number:**

Additional Incident Decision Support Information

***31. Public Status Summary:**	A. # This Reporting Period	B. Total # to Date	***32. Responder Status Summary:**	A. # This Reporting Period	B. Total # to Date
C. Indicate Number of Civilians (Public) Below:			*C. Indicate Number of Responders Below:*		
D. Fatalities			D. Fatalities		
E. With Injuries/Illness			E. With Injuries/Illness		
F. Trapped/In Need of Rescue			F. Trapped/In Need of Rescue		
G. Missing *(note if estimated)*			G. Missing		
H. Evacuated *(note if estimated)*			H. Sheltering in Place		
I. Sheltering in Place *(note if estimated)*			I. Have Received Immunizations		
J. In Temporary Shelters *(note if est.)*			J. Require Immunizations		
K. Have Received Mass Immunizations			K. In Quarantine		
L. Require Immunizations *(note if est.)*					
M. In Quarantine					
N. Total # Civilians (Public) Affected:			*N. Total # Responders Affected:*		

33. Life, Safety, and Health Status/Threat Remarks:

35. Weather Concerns (synopsis of current and predicted weather; discuss related factors that may cause concern)**:**

***34. Life, Safety, and Health Threat Management:**	A. Check if Active
A. No Likely Threat	☐
B. Potential Future Threat	☐
C. Mass Notifications in Progress	☐
D. Mass Notifications Completed	☐
E. No Evacuation(s) Imminent	☐
F. Planning for Evacuation	☐
G. Planning for Shelter-in-Place	☐
H. Evacuation(s) in Progress	☐
I. Shelter-in-Place in Progress	☐
J. Repopulation in Progress	☐
K. Mass Immunization in Progress	☐
L. Mass Immunization Complete	☐
M. Quarantine in Progress	☐
N. Area Restriction in Effect	☐
	☐
	☐
	☐
	☐

36. Projected Incident Activity, Potential, Movement, Escalation, or Spread and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour timeframes:

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

37. Strategic Objectives (define planned end-state for incident)**:**

 | ** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**	**2. Incident Number:**

Additional Incident Decision Support Information *(continued)*

38. Current Incident Threat Summary and Risk Information in 12-, 24-, 48-, and 72-hour timeframes and beyond. Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business. Identify corresponding incident-related potential economic or cascading impacts.

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

39. Critical Resource Needs in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives. List resource category, kind, and/or type, and amount needed, in priority order:

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

40. Strategic Discussion: Explain the relation of overall strategy, constraints, and current available information to:

1) critical resource needs identified above,
2) the Incident Action Plan and management objectives and targets,
3) anticipated results.

Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.

41. Planned Actions for Next Operational Period:

42. Projected Final Incident Size/Area (use unit label – e.g., “sq mi”)**:**

43. Anticipated Incident Management Completion Date:

44. Projected Significant Resource Demobilization Start Date:

45. Estimated Incident Costs to Date:

46. Projected Final Incident Cost Estimate:

47. Remarks (or continuation of any blocks above – list block number in notation)**:**

INCIDENT STATUS SUMMARY (ICS 209)

1. Incident Name:	**2. Incident Number:**

Incident Resource Commitment Summary

48. Agency or Organization:	**49. Resources** (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box)**:**																				**50. Additional Personnel** not assigned to a resource**:**	**51. Total Personnel** (includes those associated with resources – e.g., aircraft or engines – *and* individual overhead)**:**
52. Total Resources																						

53. Additional Cooperating and Assisting Organizations Not Listed Above:

ICS 209, Page ___ of ___	** Required when applicable.*

ICS 209
Incident Status Summary

Purpose. The ICS 209 is used for reporting information on significant incidents. It is not intended for every incident, as most incidents are of short duration and do not require scarce resources, significant mutual aid, or additional support and attention. **T**he ICS 209 contains basic information elements needed to support decisionmaking at all levels above the incident to support the incident. Decisionmakers may include the agency having jurisdiction, but also all multiagency coordination system (MACS) elements and parties, such as cooperating and assisting agencies/organizations, dispatch centers, emergency operations centers, administrators, elected officials, and local, tribal, county, State, and Federal agencies. Once ICS 209 information has been submitted from the incident, decisionmakers and others at all incident support and coordination points may transmit and share the information (based on its sensitivity and appropriateness) for access and use at local, regional, State, and national levels as it is needed to facilitate support.

Accurate and timely completion of the ICS 209 is necessary to identify appropriate resource needs, determine allocation of limited resources when multiple incidents occur, and secure additional capability when there are limited resources due to constraints of time, distance, or other factors. The information included on the ICS 209 influences the priority of the incident, and thus its share of available resources and incident support.

The ICS 209 is designed to provide a "snapshot in time" to effectively move incident decision support information where it is needed. It should contain the most accurate and up-to-date information available at the time it is prepared. However, readers of the ICS 209 may have access to more up-to-date or real-time information in reference to certain information elements on the ICS 209. Coordination among communications and information management elements within ICS and among MACS should delineate authoritative sources for more up-to-date and/or real-time information when ICS 209 information becomes outdated in a quickly evolving incident.

Reporting Requirements. The ICS 209 is intended to be used when an incident reaches a certain threshold where it becomes significant enough to merit special attention, require additional resource support needs, or cause media attention, increased public safety threat, etc. Agencies or organizations may set reporting requirements and, therefore, ICS 209s should be completed according to each jurisdiction or discipline's policies, mobilization guide, or preparedness plans. It is recommended that consistent ICS 209 reporting parameters be adopted and used by jurisdictions or disciplines for consistency over time, documentation, efficiency, trend monitoring, incident tracking, etc.

For example, an agency or MAC (Multiagency Coordination) Group may require the submission of an initial ICS 209 when a new incident has reached a certain predesignated level of significance, such as when a given number of resources are committed to the incident, when a new incident is not completed within a certain timeframe, or when impacts/threats to life and safety reach a given level.

Typically, ICS 209 forms are completed either once daily or for each operational period – in addition to the initial submission. Jurisdictional or organizational guidance may indicate frequency of ICS 209 submission for particular definitions of incidents or for all incidents. This specific guidance may help determine submission timelines when operational periods are extremely short (e.g., 2 hours) and it is not necessary to submit new ICS 209 forms for all operational periods.

Any plans or guidelines should also indicate parameters for when it is appropriate to stop submitting ICS 209s for an incident, based upon incident activity and support levels.

Preparation. When an Incident Management Organization (such as an Incident Management Team) is in place, the Situation Unit Leader or Planning Section Chief prepares the ICS 209 at the incident. On other incidents, the ICS 209 may be completed by a dispatcher in the local communications center, or by another staff person or manager. This form should be completed at the incident or at the closest level to the incident.

The ICS 209 should be completed with the best possible, currently available, and verifiable information at the time it is completed and signed.

This form is designed to serve incidents impacting specific geographic areas that can easily be defined. It also has the flexibility for use on ubiquitous events, or those events that cover extremely large areas and that may involve many jurisdictions and ICS organizations. For these incidents, it will be useful to clarify on the form exactly which portion of the larger incident the ICS 209 is meant to address. For example, a particular ICS 209 submitted during a statewide outbreak of mumps may be relevant only to mumps-related activities in Story County, Iowa. This can be indicated in both the incident name, Block 1, and in the Incident Location Information section in Blocks 16–26.

While most of the "Incident Location Information" in Blocks 16–26 is optional, the more information that can be submitted, the better. Submission of multiple location indicators increases accuracy, improves interoperability, and increases information sharing between disparate systems. Preparers should be certain to follow accepted protocols or standards when entering location information, and clearly label all location information. As with other ICS 209 data, geospatial information may be widely shared and utilized, so accuracy is essential.

If electronic data is submitted with the ICS 209, do not attach or send extremely large data files. Incident geospatial data that is distributed with the ICS 209 should be in simple incident geospatial basics, such as the incident perimeter, point of origin, etc. Data file sizes should be small enough to be easily transmitted through dial-up connections or other limited communications capabilities when ICS 209 information is transmitted electronically. Any attached data should be clearly labeled as to format content and collection time, and should follow existing naming conventions and standards.

Distribution. ICS 209 information is meant to be completed at the level as close to the incident as possible, preferably at the incident. Once the ICS 209 has been submitted outside the incident to a dispatch center or MACS element, it may subsequently be transmitted to various incident supports and coordination entities based on the support needs and the decisions made within the MACS in which the incident occurs.

Coordination with public information system elements and investigative/intelligence information organizations at the incident and within MACS is essential to protect information security and to ensure optimal information sharing and coordination. There may be times in which particular ICS 209s contain sensitive information that should not be released to the public (such as information regarding active investigations, fatalities, etc.). When this occurs, the ICS 209 (or relevant sections of it) should be labeled appropriately, and care should be taken in distributing the information within MACS.

All completed and signed original ICS 209 forms MUST be given to the incident's Documentation Unit and/or maintained as part of the official incident record.

Notes:

- To promote flexibility, only a limited number of ICS 209 blocks are typically required, and most of those are required only when applicable.
- Most fields are optional, to allow responders to use the form as best fits their needs and protocols for information collection.
- For the purposes of the ICS 209, responders are those personnel who are assigned to an incident or who are a part of the response community as defined by NIMS. This may include critical infrastructure owners and operators, nongovernmental and nonprofit organizational personnel, and contract employees (such as caterers), depending on local/jurisdictional/discipline practices.
- For additional flexibility only pages 1–3 are numbered, for two reasons:
  - o Possible submission of additional pages for the Remarks Section (Block 47), and
  - o Possible submission of additional copies of the fourth/last page (the "Incident Resource Commitment Summary") to provide a more detailed resource summary.

Block Number	Block Title	Instructions
***1**	**Incident Name**	**REQUIRED BLOCK.** • Enter the full name assigned to the incident. • Check spelling of the full incident name. • For an incident that is a Complex, use the word "Complex" at the end of the incident name. • If the name changes, explain comments in Remarks, Block 47. • Do not use the same incident name for different incidents in the same calendar year.

Block Number	Block Title	Instructions
2	**Incident Number**	• Enter the appropriate number based on current guidance. The incident number may vary by jurisdiction and discipline. • Examples include: o A computer-aided dispatch (CAD) number. o An accounting number. o A county number. o A disaster declaration number. o A combination of the State, unit/agency ID, and a dispatch system number. o A mission number. o Any other unique number assigned to the incident and derived by means other than those above. • Make sure the number entered is correct. • Do not use the same incident number for two different incidents in the same calendar year. • Incident numbers associated with host jurisdictions or agencies and incident numbers assigned by agencies represented in Unified Command should be listed, or indicated in Remarks, Block 47.
***3**	**Report Version** (check one box on left)	**REQUIRED BLOCK.** • This indicates the current version of the ICS 209 form being submitted. • If only one ICS 209 will be submitted, check BOTH "Initial" and "Final" (or check only "Final").
	☐ Initial	Check "Initial" if this is the first ICS 209 for this incident.
	☐ Update	Check "Update" if this is a subsequent report for the same incident. These can be submitted at various time intervals (see "Reporting Requirements" above).
	☐ Final	• Check "Final" if this is the last ICS 209 to be submitted for this incident (usually when the incident requires only minor support that can be supplied by the organization having jurisdiction). • Incidents may also be marked as "Final" if they become part of a new Complex (when this occurs, it can be indicated in Remarks, Block 47).
	Report # (if used)	Use this optional field if your agency or organization requires the tracking of ICS 209 report numbers. Agencies may also track the ICS 209 by the date/time submitted.
***4**	**Incident Commander(s) & Agency or Organization**	**REQUIRED BLOCK.** • Enter both the first and last name of the Incident Commander. • If the incident is under a Unified Command, list all Incident Commanders by first initial and last name separated by a comma, including their organization. For example: L. Burnett – Minneapolis FD, R. Domanski – Minneapolis PD, C. Taylor – St. Paul PD, Y. Martin – St. Paul FD, S. McIntyre – U.S. Army Corps, J. Hartl – NTSB
5	**Incident Management Organization**	Indicate the incident management organization for the incident, which may be a Type 1, 2, or 3 Incident Management Team (IMT), a Unified Command, a Unified Command with an IMT, etc. This block should not be completed unless a recognized incident management organization is assigned to the incident.

Block Number	Block Title	Instructions
***6**	**Incident Start Date/Time**	**REQUIRED.** This is always the start date and time of the incident (not the report date and time or operational period).
	Date	Enter the start date (month/day/year).
	Time	Enter the start time (using the 24-hour clock).
	Time Zone	Enter the time zone of the incident (e.g., EDT, PST).
7	**Current Incident Size or Area Involved** (use unit label – e.g., "sq mi," "city block")	• Enter the appropriate incident descriptive size or area involved (acres, number of buildings, square miles, hectares, square kilometers, etc.). • Enter the total area involved for incident Complexes in this block, and list each sub-incident and size in Remarks (Block 47). • Indicate that the size is an estimate, if a more specific figure is not available. • Incident size may be a population figure rather than a geographic figure, depending on the incident definition and objectives. • If the incident involves more than one jurisdiction or mixed ownership, agencies/organizations may require listing a size breakdown by organization, or including this information in Remarks (Block 47). • The incident may be one part of a much larger event (refer to introductory instructions under "Preparation). Incident size/area depends on the area actively managed within the incident objectives and incident operations, and may also be defined by a delegation of authority or letter of expectation outlining management bounds.
8	**Percent (%) Contained or Completed** (circle one)	• Enter the percent that this incident is completed or contained (e.g., 50%), with a % label. • For example, a spill may be 65% contained, or flood response objectives may be 50% met.
***9**	**Incident Definition**	**REQUIRED BLOCK.** Enter a general definition of the incident in this block. This may be a general incident category or kind description, such as "tornado," "wildfire," "bridge collapse," "civil unrest," "parade," "vehicle fire," "mass casualty," etc.
10	**Incident Complexity Level**	Identify the incident complexity level as determined by Unified/Incident Commanders, if available or used.
***11**	**For Time Period**	**REQUIRED BLOCK.** • Enter the time interval for which the form applies. This period should include all of the time since the last ICS 209 was submitted, or if it is the initial ICS 209, it should cover the time lapsed since the incident started. • The time period may include one or more operational periods, based on agency/organizational reporting requirements.
	From Date/Time	• Enter the start date (month/day/year). • Enter the start time (using the 24-hour clock).
	To Date/Time	• Enter the end date (month/day/year). • Enter the end time (using the 24-hour clock).

Block Number	Block Title	Instructions
APPROVAL & ROUTING INFORMATION		
***12**	**Prepared By**	**REQUIRED BLOCK.** When an incident management organization is in place, this would be the Situation Unit Leader or Planning Section Chief at the incident. On other incidents, it could be a dispatcher in the local emergency communications center, or another staff person or manager.
	Print Name	Print the name of the person preparing the form.
	ICS Position	The ICS title of the person preparing the form (e.g., "Situation Unit Leader").
	Date/Time Prepared	Enter the date (month/day/year) and time (using the 24-hour clock) the form was prepared. Enter the time zone if appropriate.
***13**	**Date/Time Submitted**	**REQUIRED.** Enter the submission date (month/day/year) and time (using the 24-hour clock).
	Time Zone	Enter the time zone from which the ICS 209 was submitted (e.g., EDT, PST).
***14**	**Approved By**	**REQUIRED.** When an incident management organization is in place, this would be the Planning Section Chief or Incident Commander at the incident. On other incidents, it could be the jurisdiction's dispatch center manager, organizational administrator, or other manager.
	Print Name	Print the name of the person approving the form.
	ICS Position	The position of the person signing the ICS 209 should be entered (e.g., "Incident Commander").
	Signature	Signature of the person approving the ICS 209, typically the Incident Commander. The original signed ICS 209 should be maintained with other incident documents.
***15**	**Primary Location, Organization, or Agency Sent To**	**REQUIRED BLOCK.** Enter the appropriate primary location or office the ICS 209 was sent to apart from the incident. This most likely is the entity or office that ordered the incident management organization that is managing the incident. This may be a dispatch center or a MACS element such as an emergency operations center. If a dispatch center or other emergency center prepared the ICS 209 for the incident, indicate where it was submitted initially.
INCIDENT LOCATION INFORMATION		
• Much of the "Incident Location Information" in Blocks 16–26 is optional, but completing as many fields as possible increases accuracy, and improves interoperability and information sharing between disparate systems. • As with all ICS 209 information, accuracy is essential because the information may be widely distributed and used in a variety of systems. Location and/or geospatial data may be used for maps, reports, and analysis by multiple parties outside the incident. • Be certain to follow accepted protocols, conventions, or standards where appropriate when submitting location information, and clearly label all location information. • Incident location information is usually based on the point of origin of the incident, and the majority of the area where the incident jurisdiction is.		
***16**	**State**	**REQUIRED BLOCK WHEN APPLICABLE.** • Enter the State where the incident originated. • If other States or jurisdictions are involved, enter them in Block 25 or Block 44.

Block Number	Block Title	Instructions
*17	**County / Parish / Borough**	**REQUIRED BLOCK WHEN APPLICABLE.** • Enter the county, parish, or borough where the incident originated. • If other counties or jurisdictions are involved, enter them in Block 25 or Block 47.
*18	**City**	**REQUIRED BLOCK WHEN APPLICABLE.** • Enter the city where the incident originated. • If other cities or jurisdictions are involved, enter them in Block 25 or Block 47.
19	**Unit or Other**	Enter the unit, sub-unit, unit identification (ID) number or code (if used), or other information about where the incident originated. This may be a local identifier that indicates primary incident jurisdiction or responsibility (e.g., police, fire, public works, etc.) or another type of organization. Enter specifics in Block 25.
*20	**Incident Jurisdiction**	**REQUIRED BLOCK WHEN APPLICABLE.** Enter the jurisdiction where the incident originated (the entry may be general, such as Federal, city, or State, or may specifically identify agency names such as Warren County, U.S. Coast Guard, Panama City, NYPD).
21	**Incident Location Ownership** (if different than jurisdiction)	• When relevant, indicate the ownership of the area where the incident originated, especially if it is different than the agency having jurisdiction. • This may include situations where jurisdictions contract for emergency services, or where it is relevant to include ownership by private entities, such as a large industrial site.
22	**22. Longitude** (indicate format)**:** **Latitude** (indicate format)**:**	• Enter the longitude and latitude where the incident originated, if available and normally used by the authority having jurisdiction for the incident. • Clearly label the data, as longitude and latitude can be derived from various sources. For example, if degrees, minutes, and seconds are used, label as “33 degrees, 45 minutes, 01 seconds.”
23	**US National Grid Reference**	• Enter the US National Grid (USNG) reference where the incident originated, if available and commonly used by the agencies/jurisdictions with primary responsibility for the incident. • Clearly label the data.
24	**Legal Description** (township, section, range)	• Enter the legal description where the incident originated, if available and commonly used by the agencies/jurisdictions with primary responsibility for the incident. • Clearly label the data (e.g., N 1/2 SE 1/4, SW 1/4, S24, T32N, R18E).
*25	**Short Location or Area Description** (list all affected areas or a reference point)	**REQUIRED BLOCK.** • List all affected areas as described in instructions for Blocks 16–24 above, OR summarize a general location, OR list a reference point for the incident (e.g., “the southern third of Florida,” “in ocean 20 miles west of Catalina Island, CA,” or “within a 5 mile radius of Walden, CO”). • This information is important for readers unfamiliar with the area (or with other location identification systems) to be able to quickly identify the general location of the incident on a map. • Other location information may also be listed here if needed or relevant for incident support (e.g., base meridian).
26	**UTM Coordinates**	Indicate Universal Transverse Mercator reference coordinates if used by the discipline or jurisdiction.

Block Number	Block Title	Instructions
27	**Note any electronic geospatial data included or attached** (indicate data format, content, and collection time information and labels)	• Indicate whether and how geospatial data is included or attached. • Utilize common and open geospatial data standards. • <u>WARNING</u>: Do not attach or send extremely large data files with the ICS 209. Incident geospatial data that is distributed with the ICS 209 should be simple incident geospatial basics, such as the incident perimeter, origin, etc. Data file sizes should be small enough to be easily transmitted through dial-up connections or other limited communications capabilities when ICS 209 information is transmitted electronically. • <u>NOTE</u>: Clearly indicate data content. For example, data may be about an incident perimeter (such as a shape file), the incident origin (a point), a point and radius (such as an evacuation zone), or a line or lines (such as a pipeline). • <u>NOTE</u>: Indicate the data format (e.g., .shp, .kml, .kmz, or .gml file) and any relevant information about projection, etc. • <u>NOTE</u>: Include a hyperlink or other access information if incident map data is posted online or on an FTP (file transfer protocol) site to facilitate downloading and minimize information requests. • <u>NOTE</u>: Include a point of contact for getting geospatial incident information, if included in the ICS 209 or available and supporting the incident.
INCIDENT SUMMARY		
*28	**Significant Events for the Time Period Reported** (summarize significant progress made, evacuations, incident growth, etc.)	**REQUIRED BLOCK.** • Describe significant events that occurred during the period being reported in Block 6. Examples include: o Road closures. o Evacuations. o Progress made and accomplishments. o Incident command transitions. o Repopulation of formerly evacuated areas and specifics. o Containment. • Refer to other blocks in the ICS 209 when relevant for additional information (e.g., "Details on evacuations may be found in Block 33"), or in Remarks, Block 47. • Be specific and detailed in reference to events. For example, references to road closures should include road number and duration of closure (or include further detail in Block 33). Use specific metrics if needed, such as the number of people or animals evacuated, or the amount of a material spilled and/or recovered. • This block may be used for a single-paragraph synopsis of overall incident status.
29	**Primary Materials or Hazards Involved** (hazardous chemicals, fuel types, infectious agents, radiation, etc.)	• When relevant, enter the appropriate primary materials, fuels, or other hazards involved in the incident that are leaking, burning, infecting, or otherwise influencing the incident. • Examples include hazardous chemicals, wildland fuel models, biohazards, explosive materials, oil, gas, structural collapse, avalanche activity, criminal activity, etc.
	Other	Enter any miscellaneous issues which impacted Critical Infrastructure and Key Resources.

Block Number	Block Title	Instructions
30	**Damage Assessment Information** (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.)	• Include a short summary of damage or use/access restrictions/ limitations caused by the incident for the reporting period, and cumulatively. • Include if needed any information on the facility status, such as operational status, if it is evacuated, etc. when needed. • Include any critical infrastructure or key resources damaged/destroyed/ impacted by the incident, the kind of infrastructure, and the extent of damage and/or impact and any known cascading impacts. • Refer to more specific or detailed damage assessment forms and packages when they are used and/or relevant.
	A. Structural Summary	Complete this table as needed based on the definitions for 30B–F below. Note in table or in text block if numbers entered are estimates or are confirmed. Summaries may also include impact to Shoreline and Wildlife, etc.
	B. # Threatened (72 hrs)	Enter the number of structures potentially threatened by the incident within the next 72 hours, based on currently available information.
	C. # Damaged	Enter the number of structures damaged by the incident.
	D. # Destroyed	Enter the number of structures destroyed beyond repair by the incident.
	E. Single Residences	Enter the number of single dwellings/homes/units impacted in Columns 30B–D. Note any specifics in the text block if needed, such as type of residence (apartments, condominiums, single-family homes, etc.).
	F. Nonresidential Commercial Properties	Enter the number of buildings or units impacted in Columns 30B–D. This includes any primary structure used for nonresidential purposes, excluding Other Minor Structures (Block 30G). Note any specifics regarding building or unit types in the text block.
	Other Minor Structures	Enter any miscellaneous structures impacted in Columns 30B–D not covered in 30E–F above, including any minor structures such as booths, sheds, or outbuildings.
	Other	Enter any miscellaneous issues which impacted Critical Infrastructure and Key Resources.

Block Number	Block Title	Instructions
ADDITIONAL INCIDENT DECISION SUPPORT INFORMATION (PAGE 2)		
***31**	**Public Status Summary**	• This section is for summary information regarding incident-related injuries, illness, and fatalities for civilians (or members of the public); see 31C–N below. • Explain or describe the nature of any reported injuries, illness, or other activities in Life, Safety, and Health Status/Threat Remarks (Block 33). • Illnesses include those that may be caused through a biological event such as an epidemic or an exposure to toxic or radiological substances. • NOTE: *Do not estimate any fatality information*. • NOTE: Please use caution when reporting information in this section that may be on the periphery of the incident or change frequently. This information should be reported as accurately as possible as a snapshot in time, as much of the information is subject to frequent change. • NOTE: Do not complete this block if the incident covered by the ICS 209 is *not directly responsible* for these actions (such as evacuations, sheltering, immunizations, etc.) *even if they are related to the incident*. o Only the authority having jurisdiction should submit reports for these actions, to mitigate multiple/conflicting reports. o For example, if managing evacuation shelters is part of the incident operation itself, do include these numbers in Block 31J with any notes in Block 33. • NOTE: When providing an estimated value, denote in parenthesis: "est." **Handling Sensitive Information** • Release of information in this section should be carefully coordinated within the incident management organization to ensure synchronization with public information and investigative/intelligence actions. • Thoroughly review the “Distribution” section in the introductory ICS 209 instructions for details on handling sensitive information. Use caution when providing information in any situation involving fatalities, and verify that appropriate notifications have been made prior to release of this information. Electronic transmission of any ICS 209 may make information available to many people and networks at once. • Information regarding fatalities should be cleared with the Incident Commander and/or an organizational administrator prior to submission of the ICS 209.
	A. # This Reporting Period	Enter the total number of individuals impacted in each category for this reporting period (since the previous ICS 209 was submitted).
	B. Total # to Date	• Enter the total number of individuals impacted in each category for the entire duration of the incident. • This is a cumulative total number that should be adjusted each reporting period.
	C. Indicate Number of Civilians (Public) Below	• For lines 31D–M below, enter the number of civilians affected for each category. • Indicate if numbers are estimates, for those blocks where this is an option. • Civilians are those members of the public who are affected by the incident, but who are not included as part of the response effort through Unified Command partnerships and those organizations and agencies assisting and cooperating with response efforts.
	D. Fatalities	• Enter the number of *confirmed* civilian/public fatalities. • See information in introductory instructions (“Distribution”) and in Block 31 instructions regarding sensitive handling of fatality information.

Block Number	Block Title	Instructions
	E. With Injuries/Illness	Enter the number of civilian/public injuries or illnesses directly related to the incident. Injury or illness is defined by the incident or jurisdiction(s).
***31** (continued)	F. Trapped/In Need of Rescue	Enter the number of civilians who are trapped or in need of rescue due to the incident.
	G. Missing (note if estimated)	Enter the number of civilians who are missing due to the incident. Indicate if an estimate is used.
	H. Evacuated (note if estimated)	Enter the number of civilians who are evacuated due to the incident. These are likely to be best estimates, but indicate if they are estimated.
	I. Sheltering-in-Place (note if estimated)	Enter the number of civilians who are sheltering in place due to the incident. Indicate if estimates are used.
	J. In Temporary Shelters (note if estimated)	Enter the number of civilians who are in temporary shelters as a direct result of the incident, noting if the number is an estimate.
	K. Have Received Mass Immunizations	Enter the number of civilians who have received mass immunizations due to the incident and/or as part of incident operations. Do not estimate.
	L. Require Mass Immunizations (note if estimated)	Enter the number of civilians who require mass immunizations due to the incident and/or as part of incident operations. Indicate if it is an estimate.
	M. In Quarantine	Enter the number of civilians who are in quarantine due to the incident and/or as part of incident operations. Do not estimate.
	N. Total # Civilians (Public) Affected	Enter sum totals for Columns 31A and 31B for Rows 31D–M.
***32**	**Responder Status Summary**	• This section is for summary information regarding incident-related injuries, illness, and fatalities for responders; see 32C–N. • Illnesses include those that may be related to a biological event such as an epidemic or an exposure to toxic or radiological substances directly in relation to the incident. • Explain or describe the nature of any reported injuries, illness, or other activities in Block 33. • NOTE: *Do not estimate any fatality information or responder status information.* • NOTE: Please use caution when reporting information in this section that may be on the periphery of the incident or change frequently. This information should be reported as accurately as possible as a snapshot in time, as much of the information is subject to frequent change. • NOTE: Do not complete this block if the incident covered by the ICS 209 is *not directly responsible* for these actions (such as evacuations, sheltering, immunizations, etc.) even if they are related to the incident. Only the authority having jurisdiction should submit reports for these actions, to mitigate multiple/conflicting reports. **Handling Sensitive Information** • Release of information in this section should be carefully coordinated within the incident management organization to ensure synchronization with public information and investigative/intelligence actions. • Thoroughly review the “Distribution” section in the introductory ICS 209 instructions for details on handling sensitive information. Use caution when providing information in any situation involving fatalities, and verify that appropriate notifications have been made prior to release of this information. Electronic transmission of any ICS 209 may make information available to many people and networks at once. • Information regarding fatalities should be cleared with the Incident Commander and/or an organizational administrator prior to submission of the ICS 209.

Block Number	Block Title	Instructions
***32** (continued)	A. # This Reporting Period	Enter the total number of responders impacted in each category for this reporting period (since the previous ICS 209 was submitted).
	B. Total # to Date	• Enter the total number of individuals impacted in each category for the *entire duration* of the incident. • This is a *cumulative* total number that should be adjusted each reporting period.
	C. Indicate Number of Responders Below	• For lines 32D–M below, enter the number of responders relevant for each category. • Responders are those personnel included as part of Unified Command partnerships and those organizations and agencies assisting and cooperating with response efforts.
	D. Fatalities	• Enter the number of *confirmed* responder fatalities. • See information in introductory instructions ("Distribution") and for Block 32 regarding sensitive handling of fatality information.
	E. With Injuries/Illness	• Enter the number of incident responders with serious injuries or illnesses due to the incident. • *For responders, serious injuries or illness are typically those in which the person is unable to continue to perform in his or her incident assignment,* but the authority having jurisdiction may have additional guidelines on reporting requirements in this area.
	F. Trapped/In Need Of Rescue	Enter the number of incident responders who are in trapped or in need of rescue due to the incident.
	G. Missing	Enter the number of incident responders who are missing due to incident conditions.
	H.	(BLANK; use however is appropriate.)
	I. Sheltering in Place	Enter the number of responders who are sheltering in place due to the incident. Once responders become the victims, this needs to be noted in Block 33 or Block 47 and handled accordingly.
	J.	(BLANK; use however is appropriate.)
	L. Require Immunizations	Enter the number of responders who require immunizations due to the incident and/or as part of incident operations.
	M. In Quarantine	Enter the number of responders who are in quarantine as a direct result of the incident and/or related to incident operations.
	N. Total # Responders Affected	Enter sum totals for Columns 32A and 32B for Rows 32D–M.
33	**Life, Safety, and Health Status/Threat Remarks**	• Enter any details needed for Blocks 31, 32, and 34. Enter any specific comments regarding illness, injuries, fatalities, and threat management for this incident, such as whether estimates were used for numbers given in Block 31. • This information should be reported as accurately as possible as a snapshot in time, as much of the information is subject to frequent change. • Evacuation information can be very sensitive to local residents and officials. Be accurate in the assessment. • Clearly note primary responsibility and contacts for any activities or information in Blocks 31, 32, and 34 that may be caused by the incident, but that are being managed and/or reported by other parties. • Provide additional explanation or information as relevant in Blocks 28, 36, 38, 40, 41, or in Remarks (Block 47).

Block Number	Block Title	Instructions
*34	**Life, Safety, and Health Threat Management**	Note any details in Life, Safety, and Health Status/Threat Remarks (Block 33), and provide additional explanation or information as relevant in Blocks 28, 36, 38, 40, 41, or in Remarks (Block 47). Additional pages may be necessary for notes.
	A. Check if Active	Check any applicable blocks in 34C–P based on currently available information regarding incident activity and potential.
	B. Notes	Note any specific details, or include in Block 33.
	C. No Likely Threat	Check if there is no likely threat to life, health, and safety.
	D. Potential Future Threat	Check if there is a potential future threat to life, health, and safety.
	E. Mass Notifications In Progress	• Check if there are any mass notifications in progress regarding emergency situations, evacuations, shelter in place, or other public safety advisories related to this incident. • These may include use of threat and alert systems such as the Emergency Alert System or a “reverse 911” system. • Please indicate the areas where mass notifications have been completed (e.g., “mass notifications to ZIP codes 50201, 50014, 50010, 50011,” or “notified all residents within a 5-mile radius of Gatlinburg”).
	F. Mass Notifications Completed	Check if actions referred to in Block 34E above have been completed.
	G. No Evacuation(s) Imminent	Check if evacuations are not anticipated in the near future based on current information.
	H. Planning for Evacuation	Check if evacuation planning is underway in relation to this incident.
	I. Planning for Shelter-in-Place	Check if planning is underway for shelter-in-place activities related to this incident.
	J. Evacuation(s) in Progress	Check if there are active evacuations in progress in relation to this incident.
	K. Shelter-In-Place in Progress	Check if there are active shelter-in-place actions in progress in relation to this incident.
	L. Repopulation in Progress	Check if there is an active repopulation in progress related to this incident.
	M. Mass Immunization in Progress	Check if there is an active mass immunization in progress related to this incident.
	N. Mass Immunization Complete	Check if a mass immunization effort has been completed in relation to this incident.
	O. Quarantine in Progress	Check if there is an active quarantine in progress related to this incident.
	P. Area Restriction in Effect	Check if there are any restrictions in effect, such as road or area closures, especially those noted in Block 28.

Block Number	Block Title	Instructions
35	**Weather Concerns** (synopsis of current and predicted weather; discuss related factors that may cause concern)	• Complete a short synopsis/discussion on significant weather factors that could cause concerns for the incident when relevant. • Include current and/or predicted weather factors, and the timeframe for predictions. • Include relevant factors such as: o Wind speed (label units, such as mph). o Wind direction (clarify and label where wind is coming from and going to in plain language – e.g., "from NNW," "from E," or "from SW"). o Temperature (label units, such as F). o Relative humidity (label %). o Watches. o Warnings. o Tides. o Currents. • Any other weather information relative to the incident, such as flooding, hurricanes, etc.
36	**Projected Incident Activity, Potential, Movement, Escalation, or Spread** and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour timeframes **12 hours** **24 hours** **48 hours** **72 hours** **Anticipated after 72 hours**	• Provide an estimate (when it is possible to do so) of the direction/scope in which the incident is expected to spread, migrate, or expand during the next indicated operational period, or other factors that may cause activity changes. • Discuss incident potential relative to values at risk, or values to be protected (such as human life), and the potential changes to those as the incident changes. • Include an estimate of the acreage or area that will likely be affected. • If known, provide the above information in 12-, 24-, 48- and 72-hour timeframes, and any activity anticipated after 72 hours.
37	**Strategic Objectives** (define planned end-state for incident)	Briefly discuss the desired outcome for the incident based on currently available information. Note any high-level objectives and any possible strategic benefits as well (especially for planned events).

Block Number	Block Title	Instructions
ADDITIONAL INCIDENT DECISION SUPPORT INFORMATION (continued) **(PAGE 3)**		
38	**Current Incident Threat Summary and Risk Information in 12-, 24-, 48-, and 72-hour timeframes and beyond.** Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business. Identify corresponding incident-related potential economic or cascading impacts. **12 hours** **24 hours** **48 hours** **72 hours** **Anticipated after 72 hours**	Summarize major or significant threats due to incident activity based on currently available information. Include a breakdown of threats in terms of 12-, 24-, 48-, and 72-hour timeframes.

Block Number	Block Title	Instructions

39	**Critical Resource Needs** in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives. List resource category, kind, and/or type, and amount needed, in priority order:
	12 hours
	24 hours
	48 hours
	72 hours
	Anticipated after 72 hours
		• List the specific critical resources and numbers needed, in order of priority. *Be specific as to the need.*
		• Use plain language and common terminology for resources, and indicate resource category, kind, and type (if available or known) to facilitate incident support.
		• If critical resources are listed in this block, there should be corresponding orders placed for them through appropriate resource ordering channels.
		• Provide critical resource needs in 12-, 24-, 48- and 72-hour increments. List the most critical resources needed for each timeframe, if needs have been identified for each timeframe. Listing critical resources by the time they are needed gives incident support personnel a "heads up" for short-range planning, and assists the ordering process to ensure these resources will be in place when they are needed.
		• More than one resource need may be listed for each timeframe. For example, a list could include:
		  o 24 hrs: 3 Type 2 firefighting helicopters, 2 Type I Disaster Medical Assistance Teams
		  o 48 hrs: Mobile Communications Unit (Law/Fire)
		  o After 72 hrs: 1 Type 2 Incident Management Team
		• Documentation in the ICS 209 can help the incident obtain critical regional or national resources through outside support mechanisms including multiagency coordination systems and mutual aid.
		  o Information provided in other blocks on the ICS 209 can help to support the need for resources, including Blocks 28, 29, 31–38, and 40–42.
		  o Additional comments in the Remarks section (Block 47) can also help explain what the incident is requesting and why it is critical (for example, "Type 2 Incident Management Team is needed in three days to transition command when the current Type 2 Team times out").
		• Do not use this block for noncritical resources.

40	**Strategic Discussion: Explain the relation of overall strategy, constraints, and current available information to:** 1) critical resource needs identified above, 2) the Incident Action Plan and management objectives and targets, 3) anticipated results. **Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.**	• Wording should be consistent with Block 39 to justify critical resource needs, which should relate to planned actions in the Incident Action Plan. • Give a short assessment of the likelihood of meeting the incident management targets, given the current management strategy and currently known constraints. • Identify when the chosen management strategy will succeed given the current constraints. Adjust the anticipated incident management completion target in Block 43 as needed based on this discussion. • Explain major problems and concerns as indicated.

Block Number	Block Title	Instructions
41	**Planned Actions for Next Operational Period**	• Provide a short summary of actions planned for the next operational period. • Examples: o "The current Incident Management Team will transition out to a replacement IMT." o "Continue to review operational/ engineering plan to facilitate removal of the partially collapsed west bridge supports." o "Continue refining mapping of the recovery operations and damaged assets using GPS." o "Initiate removal of unauthorized food vendors."
42	**Projected Final Incident Size/Area** (use unit label – e.g., "sq mi")	• Enter an estimate of the total area likely to be involved or affected over the course of the incident. • Label the estimate of the total area or population involved, affected, or impacted with the relevant units such as acres, hectares, square miles, etc. • Note that total area involved may not be limited to geographic area (see previous discussions regarding incident definition, scope, operations, and objectives). Projected final size may involve a population rather than a geographic area.
43	**Anticipated Incident Management Completion Date**	• Enter the date (month/day/year) at which time it is expected that incident objectives will be met. This is often explained similar to incident containment or control, or the time at which the incident is expected to be closed or when significant incident support will be discontinued. • Avoid leaving this block blank if possible, as this is important information for managers.
44	**Projected Significant Resource Demobilization Start Date**	Enter the date (month/day/year) when initiation of significant resource demobilization is anticipated.
45	**Estimated Incident Costs to Date**	• Enter the estimated total incident costs to date for the entire incident based on currently available information. • Incident costs include estimates of all costs for the response, including all management and support activities per discipline, agency, or organizational guidance and policy. • This does not include damage assessment figures, as they are impacts from the incident and not response costs. • If costs decrease, explain in Remarks (Block 47). • If additional space is required, please add as an attachment.
46	**Projected Final Incident Cost Estimate**	• Enter an estimate of the total costs for the incident once all costs have been processed based on current spending and projected incident potential, per discipline, agency, or organizational guidance and policy. This is often an estimate of daily costs combined with incident potential information. • This does not include damage assessment figures, as they are impacts from the incident and not response costs. • If additional space is required, please add as an attachment.

Block Number	Block Title	Instructions

47	**Remarks** (or continuation of any blocks above – list block number in notation)	• Use this block to expand on information that has been entered in previous blocks, or to include other pertinent information that has not been previously addressed.
		• List the block number for any information continued from a previous block.
		• Additional information may include more detailed weather information, specifics on injuries or fatalities, threats to critical infrastructure or other resources, more detailed evacuation site locations and number of evacuated, information or details regarding incident cause, etc.
		• For Complexes that include multiple incidents, list all sub-incidents included in the Complex.
		• List jurisdictional or ownership breakdowns if needed when an incident is in more than one jurisdiction and/or ownership area. Breakdown may be:
		  o By size (e.g., 35 acres in City of Gatlinburg, 250 acres in Great Smoky Mountains), and/or
		  o By geography (e.g., incident area on the west side of the river is in jurisdiction of City of Minneapolis; area on east side of river is City of St. Paul jurisdiction; river is joint jurisdiction with USACE).
		• Explain any reasons for incident size reductions or adjustments (e.g., reduction in acreage due to more accurate mapping).
		• This section can also be used to list any additional information about the incident that may be needed by incident support mechanisms outside the incident itself. This may be basic information needed through multiagency coordination systems or public information systems (e.g., a public information phone number for the incident, or the incident Web site address).
		• Attach additional pages if it is necessary to include additional comments in the Remarks section.

INCIDENT RESOURCE COMMITMENT SUMMARY (PAGE 4)

- This last/fourth page of the ICS 209 can be copied and used if needed to accommodate additional resources, agencies, or organizations. Write the actual page number on the pages as they are used.
- Include only resources that have been assigned to the incident and that have arrived and/or been checked in to the incident. Do not include resources that have been ordered but have *not* yet arrived.

For summarizing:

- When there are large numbers of responders, it may be helpful to group agencies or organizations together. Use the approach that works best for the multiagency coordination system applicable to the incident. For example,
  - Group State, local, county, city, or Federal responders together under such headings, or
  - Group resources from one jurisdiction together and list only individual jurisdictions (e.g., list the public works, police, and fire department resources for a city under that city's name).
- On a large incident, it may also be helpful to group similar categories, kinds, or types of resources together for this summary.

Block Number	Block Title	Instructions

48	**Agency or Organization**	• List the agencies or organizations contributing resources to the incident as responders, through mutual aid agreements, etc.
		• List agencies or organizations using clear language so readers who may not be from the discipline or host jurisdiction can understand the information.
		• Agencies or organizations may be listed individually or in groups.
		• When resources are grouped together, individual agencies or organizations may be listed below in Block 53.
		• Indicate in the rows under Block 49 how many resources are assigned to the incident under each resource identified.
		  o These can listed with the number of resources on the top of the box, and the number of personnel associated with the resources on the bottom half of the box.
		  o For example:
		    ▪ *Resource:* Type 2 Helicopters… 3/8 (indicates 3 aircraft, 8 personnel).
		    ▪ *Resource:* Type 1 Decontamination Unit… 1/3 (indicates 1 unit, 3 personnel).
		• Indicate in the rows under Block 51 the total number of personnel assigned for each agency listed under Block 48, including both individual overhead and those associated with other resources such as fire engines, decontamination units, etc.

49	**Resources** (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box)	• List resources using clear language when possible – so ICS 209 readers who may not be from the discipline or host jurisdiction can understand the information.
		  o Examples: Type 1 Fire Engines, Type 4 Helicopters
		• Enter total numbers in columns for each resource by agency, organization, or grouping in the proper blocks.
		  o These can listed with the number of resources on the top of the box, and the number of personnel associated with the resources on the bottom half of the box.
		  o For example:
		    ▪ *Resource:* Type 2 Helicopters… 3/8 (indicates 3 aircraft, 8 personnel).
		    ▪ *Resource:* Type 1 Decontamination Unit… 1/3 (indicates 1 unit, 3 personnel).
		• <u>NOTE</u>: One option is to group similar resources together when it is sensible to do so for the summary.
		  o For example, do not list every type of fire engine – rather, it may be advisable to list two generalized types of engines, such as “structure fire engines” and “wildland fire engines” in separate columns with totals for each.
		• <u>NOTE</u>: It is not advisable to list individual overhead personnel individually in the resource section, especially as this form is intended as a summary. These personnel should be included in the Total Personnel sums in Block 51.

50	**Additional Personnel** not assigned to a resource	List the number of *additional* individuals (or overhead) that are not assigned to a specific resource by agency or organization.

51	**Total Personnel** (includes those associated with resources – e.g., aircraft or engines – *and* individual overhead)	• Enter the total personnel for each agency, organization, or grouping in the Total Personnel column.
		• <u>WARNING</u>: Do not simply add the numbers across!
		• The number of Total Personnel for each row should include <u>both</u>:
		  o The total number of personnel assigned to each of the resources listed in Block 49, and
		  o The total number of additional individual overhead personnel from each agency, organization, or group listed in Block 50.

Block Number	Block Title	Instructions
52	**Total Resources**	Include the sum total of resources for each column, including the total for the column under Blocks 49, 50, and 51. This should include the total number of *resources* in Block 49, as personnel totals will be counted under Block 51.
53	**Additional Cooperating and Assisting Organizations Not Listed Above**	• List all agencies and organizations that are not directly involved in the incident, but are providing support. • Examples may include ambulance services, Red Cross, DHS, utility companies, etc. • Do not repeat any resources counted in Blocks 48–52, unless explanations are needed for groupings created under Block 48 (Agency or Organization).

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RESOURCE STATUS CHANGE (ICS 210)

1. Incident Name:	**2. Operational Period:** Date From: Time From: Date To: Time To:

3. Resource Number	**4. New Status** (Available, Assigned, O/S)	**5. From** (Assignment and Status)**:**	**6. To** (Assignment and Status)**:**	**7. Time and Date of Change:**	

8. Comments:

9. Prepared by: Name: ______________________ Position/Title: ______________________ Signature: ______________________

ICS 210 Date/Time: ____

ICS 210
Resource Status Change

Purpose. The Resource Status Change (ICS 210) is used by the Incident Communications Center Manager to record status change information received on resources assigned to the incident. This information could be transmitted with a General Message (ICS 213). The form could also be used by Operations as a worksheet to track entry, etc.

Preparation. The ICS 210 is completed by radio/telephone operators who receive status change information from individual resources, Task Forces, Strike Teams, and Division/Group Supervisors. Status information could also be reported by Staging Area and Helibase Managers and fixed-wing facilities.

Distribution. The ICS 210 is maintained by the Communications Unit and copied to Resources Unit and filed by Documentation Unit.

Notes:

- The ICS 210 is essentially a message form that can be used to update Resource Status Cards or T-Cards (ICS 219) for incident-level resource management.
- If additional pages are needed, use a blank ICS 210 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Resource Number**	Enter the resource identification (ID) number (this may be a letter and number combination) assigned by either the sending unit or the incident.
4	**New Status** (Available, Assigned, Out of Service)	Indicate the current status of the resource: • Available – Indicates resource is available for incident use immediately. • Assigned – Indicates resource is checked in and assigned a work task on the incident. • Out of Service – Indicates resource is assigned to the incident but unable to respond for mechanical, rest, or personnel reasons. If space permits, indicate the estimated time of return (ETR). It may be useful to indicate the reason a resource is out of service (e.g., “O/S – Mech” (for mechanical issues), “O/S – Rest” (for off shift), or “O/S – Pers” (for personnel issues).
5	**From** (Assignment and Status)	Indicate the current location of the resource (where it came from) and the status. When more than one Division, Staging Area, or Camp is used, identify the specific location (e.g., Division A, Staging Area, Incident Command Post, Western Camp).
6	**To** (Assignment and Status)	Indicate the assigned incident location of the resource and status. When more than one Division, Staging Area, or Camp is used, identify the specific location.
7	**Time and Date of Change**	Enter the time and location of the status change (24-hour clock). Enter the date as well if relevant (e.g., out of service).
8	**Comments**	Enter any special information provided by the resource or dispatch center. This may include details about why a resource is out of service, or individual identifying designators (IDs) of Strike Teams and Task Forces.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

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INCIDENT CHECK-IN LIST (ICS 211)

1. Incident Name:	**2. Incident Number:**	**3. Check-In Location** (complete all that apply): ☐ Base ☐ Staging Area ☐ ICP ☐ Helibase ☐ Other	**4. Start Date/Time:** Date: Time:

Check-In Information (use reverse of form for remarks or comments)

5. List single resource personnel (overhead) by agency and name, OR list resources by the following format:							**6. Order Request #**	**7. Date/Time Check-In**	**8. Leader's Name**	**9. Total Number of Personnel**	**10. Incident Contact Information**	**11. Home Unit or Agency**	**12. Departure Point, Date and Time**	**13. Method of Travel**	**14. Incident Assignment**	**15. Other Qualifications**	**16. Data Provided to Resources Unit**
State	Agency	Category	Kind	Type	Resource Name or Identifier	ST or TF											

ICS 211 | **17. Prepared by:** Name: ______________ Position/Title: ______________ Signature: ______________ Date/Time: ______________

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ICS 211
Incident Check-In List

Purpose. Personnel and equipment arriving at the incident can check in at various incident locations. Check-in consists of reporting specific information, which is recorded on the Check-In List (ICS 211). The ICS 211 serves several purposes, as it: (1) records arrival times at the incident of all overhead personnel and equipment, (2) records the initial location of personnel and equipment to facilitate subsequent assignments, and (3) supports demobilization by recording the home base, method of travel, etc., for resources checked in.

Preparation. The ICS 211 is initiated at a number of incident locations including: Staging Areas, Base, and Incident Command Post (ICP). Preparation may be completed by: (1) overhead at these locations, who record the information and give it to the Resources Unit as soon as possible, (2) the Incident Communications Center Manager located in the Communications Center, who records the information and gives it to the Resources Unit as soon as possible, (3) a recorder from the Resources Unit during check-in to the ICP. As an option, the ICS 211 can be printed on colored paper to match the designated Resource Status Card (ICS 219) colors. The purpose of this is to aid the process of completing a large volume of ICS 219s. The ICS 219 colors are:

- 219-1: Header Card – Gray (used only as label cards for T-Card racks)
- 219-2: Crew/Team Card – Green
- 219-3: Engine Card – Rose
- 219-4: Helicopter Card – Blue
- 219-5: Personnel Card – White
- 219-6: Fixed-Wing Card – Orange
- 219-7: Equipment Card – Yellow
- 219-8: Miscellaneous Equipment/Task Force Card – Tan
- 219-10: Generic Card – Light Purple

Distribution. ICS 211s, which are completed by personnel at the various check-in locations, are provided to the Resources Unit, Demobilization Unit, and Finance/Administration Section. The Resources Unit maintains a master list of all equipment and personnel that have reported to the incident.

Notes:
- Also available as 8½ x 14 (legal size) or 11 x 17 chart.
- Use reverse side of form for remarks or comments.
- If additional pages are needed for any form page, use a blank ICS 211 and repaginate as needed.
- Contact information for sender and receiver can be added for communications purposes to confirm resource orders. Refer to 213RR example (Appendix B)

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Check-In Location** ☐ Base ☐ Staging Area ☐ ICP ☐ Helibase ☐ Other	Check appropriate box and enter the check-in location for the incident. Indicate specific information regarding the locations under each checkbox. ICP is for Incident Command Post. Other may include…
4	**Start Date/Time** • Date • Time	Enter the date (month/day/year) and time (using the 24-hour clock) that the form was started.

Block Number	Block Title	Instructions
	Check-In Information	Self explanatory.
5	**List single resource personnel (overhead) by agency and name, OR list resources by the following format**	Enter the following information for resources: OPTIONAL: Indicate if resource is a single resource versus part of Strike Team or Task Force. Fields can be left blank if not necessary.
	• State	Use this section to list the home State for the resource.
	• Agency	Use this section to list agency name (or designator), and individual names for all single resource personnel (e.g., ORC, ARL, NYPD).
	• Category	Use this section to list the resource category based on NIMS, discipline, or jurisdiction guidance.
	• Kind	Use this section to list the resource kind based on NIMS, discipline, or jurisdiction guidance.
	• Type	Use this section to list the resource type based on NIMS, discipline, or jurisdiction guidance.
	• Resource Name or Identifier	Use this section to enter the resource name or unique identifier. If it is a Strike Team or a Task Force, list the unique Strike Team or Task Force identifier (if used) on a single line with the component resources of the Strike Team or Task Force listed on the following lines. For example, for an Engine Strike Team with the call sign "XLT459" show "XLT459" in this box and then in the next five rows, list the unique identifier for the five engines assigned to the Strike Team.
	• ST or TF	Use ST or TF to indicate whether the resource is part of a Strike Team or Task Force. See above for additional instructions.
6	**Order Request #**	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline, since several incident numbers may be used for the same incident.
7	**Date/Time Check-In**	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
8	**Leader's Name**	• For equipment, enter the operator's name. • Enter the Strike Team or Task Force leader's name. • Leave blank for single resource personnel (overhead).
9	**Total Number of Personnel**	Enter total number of personnel associated with the resource. Include leaders.
10	**Incident Contact Information**	Enter available contact information (e.g., radio frequency, cell phone number, etc.) for the incident.
11	**Home Unit or Agency**	Enter the home unit or agency to which the resource or individual is normally assigned (may not be departure location).
12	**Departure Point, Date and Time**	Enter the location from which the resource or individual departed for this incident. Enter the departure time using the 24-hour clock.
13	**Method of Travel**	Enter the means of travel the individual used to bring himself/herself to the incident (e.g., bus, truck, engine, personal vehicle, etc.).
14	**Incident Assignment**	Enter the incident assignment at time of dispatch.
15	**Other Qualifications**	Enter additional duties (ICS positions) pertinent to the incident that the resource/individual is qualified to perform. Note that resources should not be reassigned on the incident without going through the established ordering process. This data may be useful when resources are demobilized and remobilized for another incident.

Block Number	Block Title	Instructions
16	**Data Provided to Resources Unit**	Enter the date and time that the information pertaining to that entry was transmitted to the Resources Unit, and the initials of the person who transmitted the information.
17	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

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GENERAL MESSAGE (ICS 213)

1. Incident Name (Optional)**:**		
2. To (Name and Position)**:**		
3. From (Name and Position)**:**		
4. Subject:	**5. Date:**	**6. Time**
7. Message:		
8. Approved by: Name: __________________ Signature: ___________________ Position/Title: _________________		
9. Reply:		
10. Replied by: Name: __________________ Position/Title: __________________ Signature: __________________		
ICS 213	Date/Time: ____	

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ICS 213
General Message

Purpose. The General Message (ICS 213) is used by the incident dispatchers to record incoming messages that cannot be orally transmitted to the intended recipients. The ICS 213 is also used by the Incident Command Post and other incident personnel to transmit messages (e.g., resource order, incident name change, other ICS coordination issues, etc.) to the Incident Communications Center for transmission via radio or telephone to the addressee. This form is used to send any message or notification to incident personnel that requires hard-copy delivery.

Preparation. The ICS 213 may be initiated by incident dispatchers and any other personnel on an incident.

Distribution. Upon completion, the ICS 213 may be delivered to the addressee and/or delivered to the Incident Communication Center for transmission.

Notes:

- The ICS 213 is a three-part form, typically using carbon paper. The sender will complete Part 1 of the form and send Parts 2 and 3 to the recipient. The recipient will complete Part 2 and return Part 3 to the sender.
- A copy of the ICS 213 should be sent to and maintained within the Documentation Unit.
- Contact information for the sender and receiver can be added for communications purposes to confirm resource orders. Refer to 213RR example (Appendix B)

Block Number	Block Title	Instructions
1	**Incident Name** (Optional)	Enter the name assigned to the incident. This block is optional.
2	**To** (Name and Position)	Enter the name and position the General Message is intended for. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
3	**From** (Name and Position)	Enter the name and position of the individual sending the General Message. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
4	**Subject**	Enter the subject of the message.
5	**Date**	Enter the date (month/day/year) of the message.
6	**Time**	Enter the time (using the 24-hour clock) of the message.
7	**Message**	Enter the content of the message. Try to be as concise as possible.
8	**Approved by** • Name • Signature • Position/Title	Enter the name, signature, and ICS position/title of the person approving the message.
9	**Reply**	The intended recipient will enter a reply to the message and return it to the originator.
10	**Replied by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person replying to the message. Enter date (month/day/year) and time prepared (24-hour clock).

ACTIVITY LOG (ICS 214)

1. **Incident Name:**	2. **Operational Period:** Date From: Time From:	Date To: Time To:

3. Name:	**4. ICS Position:**	**5. Home Agency** (and Unit)**:**

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities

8. Prepared by: Name: ____________________ Position/Title: ____________________ Signature: ____________________

Date/Time: ____

ACTIVITY LOG (ICS 214)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

7. Activity Log (continuation)**:**

Date/Time	Notable Activities

8. Prepared by: Name: ____________________ Position/Title: ____________________ Signature: ____________________

ICS 214, Page 2 Date/Time: ____________________

ICS 214
Activity Log

Purpose. The Activity Log (ICS 214) records details of notable activities at any ICS level, including single resources, equipment, Task Forces, etc. These logs provide basic incident activity documentation, and a reference for any after-action report.

Preparation. An ICS 214 can be initiated and maintained by personnel in various ICS positions as it is needed or appropriate. Personnel should document how relevant incident activities are occurring and progressing, or any notable events or communications.

Distribution. Completed ICS 214s are submitted to supervisors, who forward them to the Documentation Unit. All completed original forms must be given to the Documentation Unit, which maintains a file of all ICS 214s. It is recommended that individuals retain a copy for their own records.

Notes:

- The ICS 214 can be printed as a two-sided form.
- Use additional copies as continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Name**	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
4	**ICS Position**	Enter the name and ICS position of the individual in charge of the Unit.
5	**Home Agency** (and Unit)	Enter the home agency of the individual completing the ICS 214. Enter a unit designator if utilized by the jurisdiction or discipline.
6	**Resources Assigned**	Enter the following information for resources assigned:
	• Name	Use this section to enter the resource's name. For all individuals, use at least the first initial and last name. Cell phone number for the individual can be added as an option.
	• ICS Position	Use this section to enter the resource's ICS position (e.g., Finance Section Chief).
	• Home Agency (and Unit)	Use this section to enter the resource's home agency and/or unit (e.g., Des Moines Public Works Department, Water Management Unit).
7	**Activity Log** • Date/Time • Notable Activities	• Enter the time (24-hour clock) and briefly describe individual notable activities. Note the date as well if the operational period covers more than one day. • Activities described may include notable occurrences or events such as task assignments, task completions, injuries, difficulties encountered, etc. • This block can also be used to track personal work habits by adding columns such as "Action Required," "Delegated To," "Status," etc.
8	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

OPERATIONAL PLANNING WORKSHEET (ICS 215)

1. Incident Name:

2. Operational Period: Date From: Date To:
Time From: Time To:

3. Branch	4. Division, Group, or Other	5. Work Assignment & Special Instructions	6. Resources													7. Overhead Position(s)	8. Special Equipment & Supplies	9. Reporting Location	10. Requested Arrival Time
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																

11. Total Resources Required														
12. Total Resources Have on Hand														
13. Total Resources Need To Order														

14. Prepared by:
Name: ______________________
Position/Title: ________________
Signature: ___________________
Date/Time: ___________________

ICS 215

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ICS 215
Operational Planning Worksheet

Purpose. The Operational Planning Worksheet (ICS 215) communicates the decisions made by the Operations Section Chief during the Tactics Meeting concerning resource assignments and needs for the next operational period. The ICS 215 is used by the Resources Unit to complete the Assignment Lists (ICS 204) and by the Logistics Section Chief for ordering resources for the incident.

Preparation. The ICS 215 is initiated by the Operations Section Chief and often involves logistics personnel, the Resources Unit, and the Safety Officer. The form is shared with the rest of the Command and General Staffs during the Planning Meeting. It may be useful in some disciplines or jurisdictions to prefill ICS 215 copies prior to incidents.

Distribution. When the Branch, Division, or Group work assignments and accompanying resource allocations are agreed upon, the form is distributed to the Resources Unit to assist in the preparation of the ICS 204. The Logistics Section will use a copy of this worksheet for preparing requests for resources required for the next operational period.

Notes:
- This worksheet can be made into a wall mount.
- Also available as 8½ x 14 (legal size) and 11 x 17 chart.
- If additional pages are needed, use a blank ICS 215 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Branch**	Enter the Branch of the work assignment for the resources.
4	**Division, Group, or Other**	Enter the Division, Group, or other location (e.g., Staging Area) of the work assignment for the resources.
5	**Work Assignment & Special Instructions**	Enter the specific work assignments given to each of the Divisions/Groups and any special instructions, as required.
6	**Resources**	Complete resource headings for category, kind, and type as appropriate for the incident. The use of a slash indicates a single resource in the upper portion of the slash and a Strike Team or Task Force in the bottom portion of the slash.
	• Required	Enter, for the appropriate resources, the number of resources by type (engine, squad car, Advanced Life Support ambulance, etc.) required to perform the work assignment.
	• Have	Enter, for the appropriate resources, the number of resources by type (engines, crew, etc.) available to perform the work assignment.
	• Need	Enter the number of resources needed by subtracting the number in the "Have" row from the number in the "Required" row.
7	**Overhead Position(s)**	List any supervisory and nonsupervisory ICS position(s) not directly assigned to a previously identified resource (e.g., Division/Group Supervisor, Assistant Safety Officer, Technical Specialist, etc.).
8	**Special Equipment & Supplies**	List special equipment and supplies, including aviation support, used or needed. This may be a useful place to monitor span of control.
9	**Reporting Location**	Enter the specific location where the resources are to report (Staging Area, location at incident, etc.).
10	**Requested Arrival Time**	Enter the time (24-hour clock) that resources are requested to arrive at the reporting location.

Block Number	Block Title	Instructions
11	**Total Resources Required**	Enter the total number of resources required by category/kind/type as preferred (e.g., engine, squad car, ALS ambulance, etc.). A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/ Task Forces in the bottom portion of the slash.
12	**Total Resources Have on Hand**	Enter the total number of resources on hand that are assigned to the incident for incident use. A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/Task Forces in the bottom portion of the slash.
13	**Total Resources Need To Order**	Enter the total number of resources needed. A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/Task Forces in the bottom portion of the slash.
14	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT ACTION PLAN SAFETY ANALYSIS (ICS 215A)

1. Incident Name:	**2. Incident Number:**

3. Date/Time Prepared: Date: Time:	**4. Operational Period:** Date From: Date To: Time From: Time To:

5. Incident Area	**6. Hazards/Risks**	**7. Mitigations**

8. Prepared by (Safety Officer)**:** Name: ______________________________ Signature: ______________________________

Prepared by (Operations Section Chief)**:** Name: _________________________ Signature: _________________________

ICS 215A	Date/Time: ____

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ICS 215A
Incident Action Plan Safety Analysis

Purpose. The purpose of the Incident Action Plan Safety Analysis (ICS 215A) is to aid the Safety Officer in completing an operational risk assessment to prioritize hazards, safety, and health issues, and to develop appropriate controls. This worksheet addresses communications challenges between planning and operations, and is best utilized in the planning phase and for Operations Section briefings.

Preparation. The ICS 215A is typically prepared by the Safety Officer during the incident action planning cycle. When the Operations Section Chief is preparing for the tactics meeting, the Safety Officer collaborates with the Operations Section Chief to complete the Incident Action Plan Safety Analysis. This worksheet is closely linked to the Operational Planning Worksheet (ICS 215). Incident areas or regions are listed along with associated hazards and risks. For those assignments involving risks and hazards, mitigations or controls should be developed to safeguard responders, and appropriate incident personnel should be briefed on the hazards, mitigations, and related measures. Use additional sheets as needed.

Distribution. When the safety analysis is completed, the form is distributed to the Resources Unit to help prepare the Operations Section briefing. All completed original forms must be given to the Documentation Unit.

Notes:
- This worksheet can be made into a wall mount, and can be part of the IAP.
- If additional pages are needed, use a blank ICS 215A and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Prepared**	Enter date (month/day/year) and time (using the 24-hour clock) prepared.
4	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (24-hour clock) and end date and time for the operational period to which the form applies.
5	**Incident Area**	Enter the incident areas where personnel or resources are likely to encounter risks. This may be specified as a Branch, Division, or Group.
6	**Hazards/Risks**	List the types of hazards and/or risks likely to be encountered by personnel or resources at the incident area relevant to the work assignment.
7	**Mitigations**	List actions taken to reduce risk for each hazard indicated (e.g., specify personal protective equipment or use of a buddy system or escape routes).
8	**Prepared by** (Safety Officer and Operations Section Chief) • Name • Signature • Date/Time	Enter the name of both the Safety Officer and the Operations Section Chief, who should collaborate on form preparation. Enter date (month/day/year) and time (24-hour clock) reviewed.

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SUPPORT VEHICLE/EQUIPMENT INVENTORY (ICS 218)

1. Incident Name:	**2. Incident Number:**	**3. Date/Time Prepared:** Date: Time:	**4. Vehicle/Equipment Category:**

5. Vehicle/Equipment Information

Order Request Number	Incident ID No.	Vehicle or Equipment Classification	Vehicle or Equipment Make	Category/ Kind/Type, Capacity, or Size	Vehicle or Equipment Features	Agency or Owner	Operator Name or Contact	Vehicle License or ID No.	Incident Assignment	Incident Start Date and Time	Incident Release Date and Time

ICS 218	**6. Prepared by:** Name: _____________________ Position/Title: _____________________ Signature: _____________________

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ICS 218
Support Vehicle/Equipment Inventory

Purpose. The Support Vehicle/Equipment Inventory (ICS 218) provides an inventory of all transportation and support vehicles and equipment assigned to the incident. The information is used by the Ground Support Unit to maintain a record of the types and locations of vehicles and equipment on the incident. The Resources Unit uses the information to initiate and maintain status/resource information.

Preparation. The ICS 218 is prepared by Ground Support Unit personnel at intervals specified by the Ground Support Unit Leader.

Distribution. Initial inventory information recorded on the form should be given to the Resources Unit. Subsequent changes to the status or location of transportation and support vehicles and equipment should be provided to the Resources Unit immediately.

Notes:
- If additional pages are needed, use a blank ICS 218 and repaginate as needed.
- Also available as 8½ x 14 (legal size) and 11 x 17 chart.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Prepared**	Enter the date (month/day/year) and time (using the 24-hour clock) the form is prepared.
4	**Vehicle/Equipment Category**	Enter the specific vehicle or equipment category (e.g., buses, generators, dozers, pickups/sedans, rental cars, etc.). Use a separate sheet for each vehicle or equipment category.
5	**Vehicle/Equipment Information**	Record the following information:
	Order Request Number	Enter the order request number for the resource as used by the jurisdiction or discipline, or the relevant EMAC order request number.
	Incident Identification Number	Enter any special incident identification numbers or agency radio identifier assigned to the piece of equipment used only during the incident, if this system if used (e.g., “Decontamination Unit 2,” or “Water Tender 14”).
	Vehicle or Equipment Classification	Enter the specific vehicle or equipment classification (e.g., bus, backhoe, Type 2 engine, etc.) as relevant.
	Vehicle or Equipment Make	Enter the vehicle or equipment manufacturer name (e.g., “GMC,” “International”).
	Category/Kind/Type, Capacity, or Size	Enter the vehicle or equipment category/kind/type, capacity, or size (e.g., 30-person bus, 3/4-ton truck, 50 kW generator).
	Vehicle or Equipment Features	Indicate any vehicle or equipment features such as 2WD, 4WD, towing capability, number of axles, heavy-duty tires, high clearance, automatic vehicle locator (AVL), etc.
	Agency or Owner	Enter the name of the agency or owner of the vehicle or equipment.
	Operator Name or Contact	Enter the operator name and/or contact information (cell phone, radio frequency, etc.).
	Vehicle License or Identification Number	Enter the license plate number or another identification number (such as a serial or rig number) of the vehicle or equipment.
	Incident Assignment	Enter where the vehicle or equipment will be located at the incident and its function (use abbreviations per discipline or jurisdiction).

Block Number	Block Title	Instructions
5 (continued)	Incident Start Date and Time	Indicate start date (month/day/year) and time (using the 24-hour clock) for driver or for equipment as may be relevant.
	Incident Release Date and Time	Enter the date (month/day/year) and time (using the 24-hour clock) the vehicle or equipment is released from the incident.
6	**Prepared by** • Name • Position/Title • Signature	Enter the name, ICS position/title, and signature of the person preparing the form.

ICS 219
Resource Status Card (T-Card)

Purpose. Resource Status Cards (ICS 219) are also known as "T-Cards," and are used by the Resources Unit to record status and location information on resources, transportation, and support vehicles and personnel. These cards provide a visual display of the status and location of resources assigned to the incident.

Preparation. Information to be placed on the cards may be obtained from several sources including, but not limited to:

- Incident Briefing (ICS 201).
- Incident Check-In List (ICS 211).
- General Message (ICS 213).
- Agency-supplied information or electronic resource management systems.

Distribution. ICS 219s are displayed in resource status or "T-Card" racks where they can be easily viewed, retrieved, updated, and rearranged. The Resources Unit typically maintains cards for resources assigned to an incident until demobilization. At demobilization, all cards should be turned in to the Documentation Unit.

Notes. There are eight different status cards (see list below) and a header card, to be printed front-to-back on cardstock. Each card is printed on a different color of cardstock and used for a different resource category/kind/type. The format and content of information on each card varies depending upon the intended use of the card.

- 219-1: Header Card – Gray (used only as label cards for T-Card racks)
- 219-2: Crew/Team Card – Green
- 219-3: Engine Card – Rose
- 219-4: Helicopter Card – Blue
- 219-5: Personnel Card – White
- 219-6: Fixed-Wing Card – Orange
- 219-7: Equipment Card – Yellow
- 219-8: Miscellaneous Equipment/Task Force Card – Tan
- 219-10: Generic Card – Light Purple

Acronyms. Abbreviations utilized on the cards are listed below:

- AOV: Agency-owned vehicle
- ETA: Estimated time of arrival
- ETD: Estimated time of departure
- ETR: Estimated time of return
- O/S Mech: Out-of-service for mechanical reasons
- O/S Pers: Out-of-service for personnel reasons
- O/S Rest: Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft
- POV: Privately owned vehicle

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Prepared by:
Date/Time:
ICS 219-1 HEADER CARD (GRAY)

Prepared by:
Date/Time:
ICS 219-1 HEADER CARD (GRAY)

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ICS 219-1: Header Card

Block Title	Instructions
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

This page intentionally left blank.

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Crew/Team ID #(s) or Name(s):

Manifest: ☐ Yes ☐ No	**Total Weight:**

Method of Travel to Incident:
☐ AOV ☐ POV ☐ Bus ☐ Air ☐ Other

Home Base:

Departure Point:

ETD:	**ETA:**

Transportation Needs at Incident:
☐ Vehicle ☐ Bus ☐ Air ☐ Other

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time:

ICS 219-2 CREW/TEAM (GREEN)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location:	**Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	**Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	**Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	**Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Prepared by:

Date/Time:

ICS 219-2 CREW/TEAM (GREEN)

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ICS 219-2: Crew/Team Card

Block Title	Instructions
ST/Unit	Enter the State and/or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work
# Pers	Enter total number of personnel associated with the crew/team. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline, since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Crew/Team ID #(s) or Name(s)	Provide the identifier number(s) or name(s) for this crew/team (e.g., Air Monitoring Team 2, Entry Team 3).
Manifest ☐ Yes ☐ No	Use this section to enter whether or not the resource or personnel has a manifest. If they do, indicate the manifest number.
Total Weight	Enter the total weight for the crew/team. This information is necessary when the crew/team are transported by charter air.
Method of Travel to Incident ☐ AOV ☐ POV ☐ Bus ☐ Air ☐ Other	Check the box(es) for the appropriate method(s) of travel the individual used to bring himself/herself to the incident. AOV is "agency-owned vehicle." POV is "privately owned vehicle."
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the crew/team's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the crew/team's estimated time of arrival (using the 24-hour clock) at the incident.

Block Title	Instructions
Transportation Needs at Incident ☐ Vehicle ☐ Bus ☐ Air ☐ Other	Check the box(es) for the appropriate method(s) of transportation at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the crew/team was ordered to the incident.
Remarks	Enter any additional information pertaining to the crew/team.
BACK OF FORM	
Incident Location	Enter the location of the crew/team.
Time	Enter the time (24-hour clock) the crew/team reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the crew/team's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the crew/team's current location or status.
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Resource ID #(s) or Name(s):

Home Base:

Departure Point:

ETD: **ETA:**

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time:

ICS 219-3 ENGINE (ROSE)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location: **Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers

☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location: **Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers

☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location: **Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers

☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location: **Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers

☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Prepared by:

Date/Time:

ICS 219-3 ENGINE (ROSE)

This page intentionally left blank.

ICS 219-3: Engine Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work
# Pers	Enter total number of personnel associated with the resource. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Resource ID #(s) or Name(s)	Provide the identifier number(s) or name(s) for the resource(s).
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.

Block Title	Instructions
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Pilot Name:

Home Base:

Departure Point:

ETD:	**ETA:**

Destination Point:

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time:

ICS 219-4 HELICOPTER (BLUE)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location:	**Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	**Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	**Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	**Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Prepared by:

Date/Time:

ICS 219-4 HELICOPTER (BLUE)

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ICS 219-4: Helicopter Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include the pilot.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier.
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Pilot Name:	Enter pilot's name (use at least the first initial and last name).
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the destination point.
Destination Point	Use this section to enter the location at the incident where the resource has been requested to report.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: ______	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

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ST/Unit:	Name:	Position/Title:

Front

Date/Time Checked In:

Name:

Primary Contact Information:

Manifest: ☐ Yes ☐ No

Total Weight:

Method of Travel to Incident:

☐ AOV ☐ POV ☐ Bus ☐ Air ☐ Other

Home Base:

Departure Point:

ETD: **ETA:**

Transportation Needs at Incident:

☐ Vehicle ☐ Bus ☐ Air ☐ Other

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time:

ICS 219-5 PERSONNEL (WHITE CARD)

ST/Unit:	Name:	Position/Title:

Back

Incident Location: **Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers

☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location: **Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers

☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location: **Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers

☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location: **Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers

☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Prepared by:

Date/Time:

ICS 219-5 PERSONNEL (WHITE CARD)

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ICS 219-5: Personnel Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
Name	Enter the individual's first initial and last name.
Position/Title	Enter the individual's ICS position/title.
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Name	Enter the individual's full name.
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Manifest ☐ Yes ☐ No	Use this section to enter whether or not the resource or personnel has a manifest. If they do, indicate the manifest number.
Total Weight	Enter the total weight for the crew. This information is necessary when the crew are transported by charter air.
Method of Travel to Incident ☐ AOV ☐ POV ☐ Bus ☐ Air ☐ Other	Check the box(es) for the appropriate method(s) of travel the individual used to bring himself/herself to the incident. AOV is "agency-owned vehicle." POV is "privately owned vehicle."
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the crew's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the crew's estimated time of arrival (using the 24-hour clock) at the incident.
Transportation Needs at Incident ☐ Vehicle ☐ Bus ☐ Air ☐ Other	Check the box(es) for the appropriate method(s) of transportation at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the crew was ordered to the incident.
Remarks	Enter any additional information pertaining to the crew.
BACK OF FORM	
Incident Location	Enter the location of the crew.
Time	Enter the time (24-hour clock) the crew reported to this location.

Block Title	Instructions
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: ______	Enter the crew's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the crew's current location or status.
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked-In:

Pilot Name:

Home Base:

Departure Point:

ETD:	ETA:

Destination Point:

Date/Time Ordered:

Manufacturer:

Remarks:

Prepared by:

Date/Time:

ICS 219-6 FIXED-WING (ORANGE)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location:	Time:

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	Time:

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	Time:

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	Time:

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Prepared by:

Date/Time:

ICS 219-6 FIXED-WING (ORANGE)

This page intentionally left blank.

ICS 219-6: Fixed-Wing Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include the pilot.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier.
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Pilot Name:	Enter pilot's name (use at least the first initial and last name).
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the destination point.
Destination Point	Use this section to enter the location at the incident where the resource has been requested to report.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Manufacturer	Enter the manufacturer of the aircraft.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

This page intentionally left blank.

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Resource ID #(s) or Name(s):

Home Base:

Departure Point:

ETD:	**ETA:**

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time:

ICS 219-7 EQUIPMENT (YELLOW)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location:	**Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	**Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	**Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	**Time:**

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Prepared by:

Date/Time:

ICS 219-7 EQUIPMENT (YELLOW)

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ICS 219-7: Equipment Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Resource ID #(s) or Name(s)	Provide the identifier number(s) or name(s) for this resource.
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.

Block Title	Instructions
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Resource ID #(s) or Name(s):

Home Base:

Departure Point:

ETD:	ETA:

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time:

ICS 219-8 MISCELLANEOUS EQUIPMENT/TASK FORCE (TAN)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location:	Time:

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	Time:

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	Time:

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Incident Location:	Time:

Status:

☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: ____

Notes:

Prepared by:

Date/Time:

ICS 219-8 MISCELLANEOUS EQUIPMENT/TASK FORCE (TAN)

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ICS 219-8: Miscellaneous Equipment/Task Force Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available work day that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Resource ID #(s) or Name(s)	Provide the identifier number or name for this resource.
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.

Block Title	Instructions
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Resource ID #(s) or Name(s):

Home Base:

Departure Point:

ETD:	ETA:

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time:

ICS 219-10 GENERIC (LIGHT PURPLE)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location:	Time:

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	Time:

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	Time:

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Incident Location:	Time:

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: _____

Notes:

Prepared by:

Date/Time:

ICS 219-10 GENERIC (LIGHT PURPLE)

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ICS 219-10: Generic Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Resource ID #(s) or Name(s)	Provide the identifier number(s) or name(s) for this resource.
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.

Block Title	Instructions
Prepared by **Date/Time**	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

AIR OPERATIONS SUMMARY (ICS 220)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:	**3. Sunrise:** **Sunset:**

4. Remarks (safety notes, hazards, air operations special equipment, etc.)**:**	**5. Ready Alert Aircraft:** Medivac: New Incident:	**6. Temporary Flight Restriction Number:** Altitude: Center Point:

8. Frequencies:	AM	FM	**9. Fixed-Wing** (category/kind/type, make/model, N#, base)**:**
Air/Air Fixed-Wing			Air Tactical Group Supervisor Aircraft:
Air/Air Rotary-Wing – Flight Following			
Air/Ground			
Command			Other Fixed-Wing Aircraft:
Deck Coordinator			
Take-Off & Landing Coordinator			
Air Guard			

7. Personnel:	Name:	Phone Number:
Air Operations Branch Director		
Air Support Group Supervisor		
Air Tactical Group Supervisor		
Helicopter Coordinator		
Helibase Manager		

10. Helicopters (use additional sheets as necessary)**:**

FAA N#	Category/Kind/Type	Make/Model	Base	Available	Start	Remarks

11. Prepared by: Name: ______________________ Position/Title: ______________________ Signature: ______________________

ICS 220, Page 1 Date/Time: ______________________

AIR OPERATIONS SUMMARY (ICS 220)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:	**3. Sunrise:** **Sunset:**

12. Task/Mission/Assignment (category/kind/type and function includes: air tactical, reconnaissance, personnel transport, search and rescue, etc.)**:**

Category/Kind/Type and Function	Name of Personnel or Cargo (if applicable) or Instructions for Tactical Aircraft	Mission Start	Fly From	Fly To

11. Prepared by: Name: ______________________ Position/Title: ______________________ Signature: ______________________

 Date/Time: ______________________

ICS 220
Air Operations Summary

Purpose. The Air Operations Summary (ICS 220) provides the Air Operations Branch with the number, type, location, and specific assignments of helicopters and air resources.

Preparation. The ICS 220 is completed by the Operations Section Chief or the Air Operations Branch Director during each Planning Meeting. General air resources assignment information is obtained from the Operational Planning Worksheet (ICS 215), which also is completed during each Planning Meeting. Specific designators of the air resources assigned to the incident are provided by the Air and Fixed-Wing Support Groups. If aviation assets would be utilized for rescue or are referenced on the Medical Plan (ICS 206), coordinate with the Medical Unit Leader and indicate on the ICS 206.

Distribution. After the ICS 220 is completed by Air Operations personnel, the form is given to the Air Support Group Supervisor and Fixed-Wing Coordinator personnel. These personnel complete the form by indicating the designators of the helicopters and fixed-wing aircraft assigned missions during the specified operational period. This information is provided to Air Operations personnel who, in turn, give the information to the Resources Unit.

Notes:
- If additional pages are needed for any form page, use a blank ICS 220 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Sunrise/Sunset**	Enter the sunrise and sunset times.
4	**Remarks** (safety notes, hazards, air operations special equipment, etc.)	Enter special instructions or information, including safety notes, hazards, and priorities for Air Operations personnel.
5	**Ready Alert Aircraft** • Medivac • New Incident	Identify ready alert aircraft that will be used as Medivac for incident assigned personnel and indicate on the Medical Plan (ICS 206). Identify aircraft to be used for new incidents within the area or new incident(s) within an incident.
6	**Temporary Flight Restriction Number** • Altitude • Center Point	Enter Temporary Flight Restriction Number, altitude (from the center point), and center point (latitude and longitude). This number is provided by the Federal Aviation Administration (FAA) or is the order request number for the Temporary Flight Restriction.
7	**Personnel** • Name • Phone Number	Enter the name and phone number of the individuals in Air Operations.
	Air Operations Branch Director	
	Air Support Group Supervisor	
	Air Tactical Group Supervisor	
	Helicopter Coordinator	
	Helibase Manager	

Block Number	Block Title	Instructions
8	**Frequencies** • AM • FM	Enter primary air/air, air/ground (if applicable), command, deck coordinator, take-off and landing coordinator, and other radio frequencies to be used during the incident.
	Air/Air Fixed-Wing	
	Air/Air Rotary-Wing – Flight Following	Flight following is typically done by Air Operations.
	Air/Ground	
	Command	
	Deck Coordinator	
	Take-Off & Landing Coordinator	
	Air Guard	
9	**Fixed-Wing** (category/kind/type, make/model, N#, base)	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance, make/model, N#, and base of air assets allocated to the incident.
	Air Tactical Group Supervisor Aircraft	
	Other Fixed-Wing Aircraft	
10	**Helicopters**	Enter the following information about the helicopter resources allocated to the incident.
	FAA N#	Enter the FAA N#.
	Category/Kind/Type	Enter the helicopter category/kind/type based on NIMS, discipline, or jurisdiction guidance.
	Make/Model	Enter the make and model of the helicopter.
	Base	Enter the base where the helicopter is located.
	Available	Enter the time the aircraft is available.
	Start	Enter the time the aircraft becomes operational.
	Remarks	
11	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
12	**Task/Mission/Assignment** (category/kind/type and function includes: air tactical, reconnaissance, personnel transport, search and rescue, etc.)	Enter the specific assignment (e.g., water or retardant drops, logistical support, or availability status for a specific purpose, support backup, recon, Medivac, etc.). If applicable, enter the primary air/air and air/ground radio frequency to be used. Mission assignments may be listed by priority.
	Category/Kind/Type and Function	
	Name of Personnel or Cargo (if applicable) or Instructions for Tactical Aircraft	
	Mission Start	
	Fly From	Enter the incident location or air base the aircraft is flying from.
	Fly To	Enter the incident location or air base the aircraft is flying to.

DEMOBILIZATION CHECK-OUT (ICS 221)

1. Incident Name:	**2. Incident Number:**	
3. Planned Release Date/Time: Date: Time:	**4. Resource or Personnel Released:**	**5. Order Request Number:**

6. Resource or Personnel:
You and your resources are in the process of being released. Resources are not released until the checked boxes below have been signed off by the appropriate overhead and the Demobilization Unit Leader (or Planning Section representative).

LOGISTICS SECTION

	Unit/Manager	**Remarks**	**Name**	**Signature**
☐	Supply Unit			
☐	Communications Unit			
☐	Facilities Unit			
☐	Ground Support Unit			
☐	Security Manager			
☐				

FINANCE/ADMINISTRATION SECTION

	Unit/Leader	**Remarks**	**Name**	**Signature**
☐	Time Unit			
☐				
☐				

OTHER SECTION/STAFF

	Unit/Other	**Remarks**	**Name**	**Signature**
☐				
☐				

PLANNING SECTION

	Unit/Leader	**Remarks**	**Name**	**Signature**
☐				
☐	Documentation Leader			
☐	Demobilization Leader			

7. Remarks:

8. Travel Information:

Room Overnight: ☐ Yes ☐ No

Estimated Time of Departure: ______________________

Actual Release Date/Time: ______________________

Destination: ______________________

Estimated Time of Arrival: ______________________

Travel Method: ______________________

Contact Information While Traveling: ______________________

Manifest: ☐ Yes ☐ No
Number: ______________________

Area/Agency/Region Notified:
____

9. Reassignment Information: ☐ Yes ☐ No

Incident Name: ______________________

Incident Number: ______________________

Location: ______________________

Order Request Number: ______________________

10. Prepared by: Name: ______________ Position/Title: ______________ Signature: ______________

ICS 221 Date/Time: ______________________

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ICS 221
Demobilization Check-Out

Purpose. The Demobilization Check-Out (ICS 221) ensures that resources checking out of the incident have completed all appropriate incident business, and provides the Planning Section information on resources released from the incident. Demobilization is a planned process and this form assists with that planning.

Preparation. The ICS 221 is initiated by the Planning Section, or a Demobilization Unit Leader if designated. The Demobilization Unit Leader completes the top portion of the form and checks the appropriate boxes in Block 6 that may need attention after the Resources Unit Leader has given written notification that the resource is no longer needed. The individual resource will have the appropriate overhead personnel sign off on any checked box(es) in Block 6 prior to release from the incident.

Distribution. After completion, the ICS 221 is returned to the Demobilization Unit Leader or the Planning Section. All completed original forms must be given to the Documentation Unit. Personnel may request to retain a copy of the ICS 221.

Notes:
- Members are not released until form is complete when all of the items checked in Block 6 have been signed off.
- If additional pages are needed for any form page, use a blank ICS 221 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Planned Release Date/Time**	Enter the date (month/day/year) and time (using the 24-hour clock) of the planned release from the incident.
4	**Resource or Personnel Released**	Enter name of the individual or resource being released.
5	**Order Request Number**	Enter order request number (or agency demobilization number) of the individual or resource being released.
6	**Resource or Personnel** You and your resources are in the process of being released. Resources are not released until the checked boxes below have been signed off by the appropriate overhead and the Demobilization Unit Leader (or Planning Section representative). • Unit/Leader/Manager/Other • Remarks • Name • Signature	Resources are not released until the checked boxes below have been signed off by the appropriate overhead. Blank boxes are provided for any additional unit requirements as needed (e.g., Safety Officer, Agency Representative, etc.).
	Logistics Section ☐ Supply Unit ☐ Communications Unit ☐ Facilities Unit ☐ Ground Support Unit ☐ Security Manager	The Demobilization Unit Leader will enter an "X" in the box to the left of those Units requiring the resource to check out. Identified Unit Leaders or other overhead are to sign the appropriate line to indicate release.

Block Number	Block Title	Instructions
6 (continued)	**Finance/Administration Section** ☐ Time Unit	The Demobilization Unit Leader will enter an "X" in the box to the left of those Units requiring the resource to check out. Identified Unit Leaders or other overhead are to sign the appropriate line to indicate release.
	Other Section/Staff ☐	The Demobilization Unit Leader will enter an "X" in the box to the left of those Units requiring the resource to check out. Identified Unit Leaders or other overhead are to sign the appropriate line to indicate release.
	Planning Section ☐ Documentation Leader ☐ Demobilization Leader	The Demobilization Unit Leader will enter an "X" in the box to the left of those Units requiring the resource to check out. Identified Unit Leaders or other overhead are to sign the appropriate line to indicate release.
7	**Remarks**	Enter any additional information pertaining to demobilization or release (e.g., transportation needed, destination, etc.). This section may also be used to indicate if a performance rating has been completed as required by the discipline or jurisdiction.
8	**Travel Information**	Enter the following travel information:
	Room Overnight	Use this section to enter whether or not the resource or personnel will be staying in a hotel overnight prior to returning home base and/or unit.
	Estimated Time of Departure	Use this section to enter the resource's or personnel's estimated time of departure (using the 24-hour clock).
	Actual Release Date/Time	Use this section to enter the resource's or personnel's actual release date (month/day/year) and time (using the 24-hour clock).
	Destination	Use this section to enter the resource's or personnel's destination.
	Estimated Time of Arrival	Use this section to enter the resource's or personnel's estimated time of arrival (using the 24-hour clock) at the destination.
	Travel Method	Use this section to enter the resource's or personnel's travel method (e.g., POV, air, etc.).
	Contact Information While Traveling	Use this section to enter the resource's or personnel's contact information while traveling (e.g., cell phone, radio frequency, etc.).
	Manifest ☐ Yes ☐ No Number	Use this section to enter whether or not the resource or personnel has a manifest. If they do, indicate the manifest number.
	Area/Agency/Region Notified	Use this section to enter the area, agency, and/or region that was notified of the resource's travel. List the name (first initial and last name) of the individual notified and the date (month/day/year) he or she was notified.
9	**Reassignment Information** ☐ Yes ☐ No	Enter whether or not the resource or personnel was reassigned to another incident. If the resource or personnel was reassigned, complete the section below.
	Incident Name	Use this section to enter the name of the new incident to which the resource was reassigned.
	Incident Number	Use this section to enter the number of the new incident to which the resource was reassigned.
	Location	Use this section to enter the location (city and State) of the new incident to which the resource was reassigned.
	Order Request Number	Use this section to enter the new order request number assigned to the resource or personnel.

Block Number	Block Title	Instructions
10	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (using the 24-hour clock).

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INCIDENT PERSONNEL PERFORMANCE RATING (ICS 225)

THIS RATING IS TO BE USED **ONLY** FOR DETERMINING AN INDIVIDUAL'S PERFORMANCE ON AN INCIDENT/EVENT		
1. Name:	**2. Incident Name:**	**3. Incident Number:**

4. Home Unit Name and Address:	**5. Incident Agency and Address:**

6. Position Held on Incident:	**7. Date(s) of Assignment:** From: To:	**8. Incident Complexity Level:** ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5	**9. Incident Definition:**

10. Evaluation

Rating Factors	**N/A**	**1 – Unacceptable**	**2**	**3 – Met Standards**	**4**	**5 – Exceeded Expectations**
11. Knowledge of the Job/ Professional Competence: Ability to acquire, apply, and share technical and administrative knowledge and skills associated with description of duties. (Includes operational aspects such as marine safety, seamanship, airmanship, SAR, etc., as appropriate.)	☐	Questionable competence and credibility. Operational or specialty expertise inadequate or lacking in key areas. Made little effort to grow professionally. Used knowledge as power against others or bluffed rather than acknowledging ignorance. Effectiveness reduced due to limited knowledge of own organizational role and customer needs. ☐	☐	Competent and credible authority on specialty or operational issues. Acquired and applied excellent operational or specialty expertise for assigned duties. Showed professional growth through education, training, and professional reading. Shared knowledge and information with others clearly and simply. Understood own organizational role and customer needs. ☐	☐	Superior expertise; advice and actions showed great breadth and depth of knowledge. Remarkable grasp of complex issues, concepts, and situations. Rapidly developed professional growth beyond expectations. Vigorously conveyed knowledge, directly resulting in increased workplace productivity. Insightful knowledge of own role, customer needs, and value of work. ☐
12. Ability To Obtain Performance/Results: Quality, quantity, timeliness, and impact of work.	☐	Routine tasks accomplished with difficulty. Results often late or of poor quality. Work had a negative impact on department or unit. Maintained the status quo despite opportunities to improve. ☐	☐	Got the job done in all routine situations and in many unusual ones. Work was timely and of high quality; required same of subordinates. Results had a positive impact on IMT. Continuously improved services and organizational effectiveness. ☐	☐	Maintained optimal balance among quality, quantity, and timeliness of work. Quality of own and subordinates' work surpassed expectations. Results had a significant positive impact on the IMT. Established clearly effective systems of continuous improvement. ☐
13. Planning/ Preparedness: Ability to anticipate, determine goals, identify relevant information, set priorities and deadlines, and create a shared vision of the Incident Management Team (IMT).	☐	Got caught by the unexpected; appeared to be controlled by events. Set vague or unrealistic goals. Used unreasonable criteria to set priorities and deadlines. Rarely had plan of action. Failed to focus on relevant information. ☐	☐	Consistently prepared. Set high but realistic goals. Used sound criteria to set priorities and deadlines. Used quality tools and processes to develop action plans. Identified key information. Kept supervisors and stakeholders informed. ☐	☐	Exceptional preparation. Always looked beyond immediate events or problems. Skillfully balanced competing demands. Developed strategies with contingency plans. Assessed all aspects of problems, including underlying issues and impact. ☐
14. Using Resources: Ability to manage time, materials, information, money, and people (i.e., all IMT components as well as external publics).	☐	Concentrated on unproductive activities or often overlooked critical demands. Failed to use people productively. Did not follow up. Mismanaged information, money, or time. Used ineffective tools or left subordinates without means to accomplish tasks. Employed wasteful methods. ☐	☐	Effectively managed a variety of activities with available resources. Delegated, empowered, and followed up. Skilled time manager, budgeted own and subordinates' time productively. Ensured subordinates had adequate tools, materials, time, and direction. Cost conscious, sought ways to cut waste. ☐	☐	Unusually skilled at bringing scarce resources to bear on the most critical of competing demands. Optimized productivity through effective delegation, empowerment, and follow-up control. Found ways to systematically reduce cost, eliminate waste, and improve efficiency. ☐
15. Adaptability/Attitude: Ability to maintain a positive attitude and modify work methods and priorities in response to new information, changing conditions, political realities, or unexpected obstacles.	☐	Unable to gauge effectiveness of work, recognize political realities, or make adjustments when needed. Maintained a poor outlook. Overlooked or screened out new information. Ineffective in ambiguous, complex, or pressured situations. ☐	☐	Receptive to change, new information, and technology. Effectively used benchmarks to improve performance and service. Monitored progress and changed course as required. Maintained a positive approach. Effectively dealt with pressure and ambiguity. Facilitated smooth transitions. Adjusted direction to accommodate political realities. ☐	☐	Rapidly assessed and confidently adjusted to changing conditions, political realities, new information, and technology. Very skilled at using and responding to measurement indicators. Championed organizational improvements. Effectively dealt with extremely complex situations. Turned pressure and ambiguity into constructive forces for change. ☐
16. Communication Skills: Ability to speak effectively and listen to understand. Ability to express facts and ideas clearly and convincingly.	☐	Unable to effectively articulate ideas and facts; lacked preparation, confidence, or logic. Used inappropriate language or rambled. Nervous or distracting mannerisms detracted from message. Failed to listen carefully or was too argumentative. Written material frequently unclear, verbose, or poorly organized. Seldom proofread. ☐	☐	Effectively expressed ideas and facts in individual and group situations; nonverbal actions consistent with spoken message. Communicated to people at all levels to ensure understanding. Listened carefully for intended message as well as spoken words. Written material clear, concise, and logically organized. Proofread conscientiously. ☐	☐	Clearly articulated and promoted ideas before a wide range of audiences; accomplished speaker in both formal and extemporaneous situations. Adept at presenting complex or sensitive issues. Active listener; remarkable ability to listen with open mind and identify key issues. Clearly and persuasively expressed complex or controversial material, directly contributing to stated objectives. ☐

INCIDENT PERSONNEL PERFORMANCE RATING (ICS 225)

1. Name:	**2. Incident Name:**	**3. Incident Number:**

10. Evaluation

Rating Factors	N/A	1 – Unacceptable	2	3 – Met Standards	4	5 – Exceeded Expectations
17. Ability To Work on a Team: Ability to manage, lead and participate in teams, encourage cooperation, and develop esprit de corps.	☐	Used teams ineffectively or at wrong times. Conflicts mismanaged or often left unresolved, resulting in decreased team effectiveness. Excluded team members from vital information. Stifled group discussions or did not contribute productively. Inhibited cross functional cooperation to the detriment of unit or service goals. ☐	☐	Skillfully used teams to increase unit effectiveness, quality, and service. Resolved or managed group conflict, enhanced cooperation, and involved team members in decision process. Valued team participation. Effectively negotiated work across functional boundaries to enhance support of broader mutual goals. ☐	☐	Insightful use of teams raised unit productivity beyond expectations. Inspired high level of esprit de corps, even in difficult situations. Major contributor to team effort. Established relationships and networks across a broad range of people and groups, raising accomplishments of mutual goals to a remarkable level. ☐
18. Consideration for Personnel/Team Welfare: Ability to consider and respond to others' personal needs, capabilities, and achievements; support for and application of worklife concepts and skills.	☐	Seldom recognized or responded to needs of people; left outside resources untapped despite apparent need. Ignorance of individuals' capabilities increased chance of failure. Seldom recognized or rewarded deserving subordinates or other IMT members. ☐	☐	Cared for people. Recognized and responded to their needs; referred to outside resources as appropriate. Considered individuals' capabilities to maximize opportunities for success. Consistently recognized and rewarded deserving subordinates or other IMT members. ☐	☐	Always accessible. Enhanced overall quality of life. Actively contributed to achieving balance among IMT requirements and professional and personal responsibilities. Strong advocate for subordinates; ensured appropriate and timely recognition, both formal and informal. ☐
19. Directing Others: Ability to influence or direct others in accomplishing tasks or missions.	☐	Showed difficulty in directing or influencing others. Low or unclear work standards reduced productivity. Failed to hold subordinates accountable for shoddy work or irresponsible actions. Unwilling to delegate authority to increase efficiency of task accomplishment. ☐	☐	A leader who earned others' support and commitment. Set high work standards; clearly articulated job requirements, expectations, and measurement criteria; held subordinates accountable. When appropriate, delegated authority to those directly responsible for the task. ☐	☐	An inspirational leader who motivated others to achieve results not normally attainable. Won people over rather than imposing will. Clearly articulated vision; empowered subordinates to set goals and objectives to accomplish tasks. Modified leadership style to best meet challenging situations. ☐
20. Judgment/Decisions Under Stress: Ability to make sound decisions and provide valid recommendations by using facts, experience, political acumen, common sense, risk assessment, and analytical thought.	☐	Decisions often displayed poor analysis. Failed to make necessary decisions, or jumped to conclusions without considering facts, alternatives, and impact. Did not effectively weigh risk, cost, and time considerations. Unconcerned with political drivers on organization. ☐	☐	Demonstrated analytical thought and common sense in making decisions. Used facts, data, and experience, and considered the impact of alternatives and political realities. Weighed risk, cost, and time considerations. Made sound decisions promptly with the best available information. ☐	☐	Combined keen analytical thought, an understanding of political processes, and insight to make appropriate decisions. Focused on the key issues and the most relevant information. Did the right thing at the right time. Actions indicated awareness of impact of decisions on others. Not afraid to take reasonable risks to achieve positive results. ☐
21. Initiative Ability to originate and act on new ideas, pursue opportunities to learn and develop, and seek responsibility without guidance and supervision.	☐	Postponed needed action. Implemented or supported improvements only when directed to do so. Showed little interest in career development. Feasible improvements in methods, services, or products went unexplored. ☐	☐	Championed improvement through new ideas, methods, and practices. Anticipated problems and took prompt action to avoid or resolve them. Pursued productivity gains and enhanced mission performance by applying new ideas and methods. ☐	☐	Aggressively sought out additional responsibility. A self-learner. Made worthwhile ideas and practices work when others might have given up. Extremely innovative. Optimized use of new ideas and methods to improve work processes and decisionmaking. ☐
22. Physical Ability for the Job: Ability to invest in the IMT's future by caring for the physical health and emotional well-being of self and others.	☐	Failed to meet minimum standards of sobriety. Tolerated or condoned others' alcohol abuse. Seldom considered subordinates' health and well-being. Unwilling or unable to recognize and manage stress despite apparent need. ☐	☐	Committed to health and well-being of self and subordinates. Enhanced personal performance through activities supporting physical and emotional well-being. Recognized and managed stress effectively. ☐	☐	Remarkable vitality, enthusiasm, alertness, and energy. Consistently contributed at high levels of activity. Optimized personal performance through involvement in activities that supported physical and emotional well-being. Monitored and helped others deal with stress and enhance health and well-being. ☐
23. Adherence to Safety: Ability to invest in the IMT's future by caring for the safety of self and others.	☐	Failed to adequately identify and protect personnel from safety hazards. ☐	☐	Ensured that safe operating procedures were followed. ☐	☐	Demonstrated a significant commitment toward safety of personnel. ☐

24. Remarks:

25. Rated Individual (This rating has been discussed with me)**:**

Signature: ______________________ Date/Time: ______________________

26. Rated by: Name: ______________________ Signature: ______________________

Home Unit: ______________________ Position Held on This Incident: ______________________

ICS 225 Date/Time: ______________________

ICS 225
Incident Personnel Performance Rating

Purpose. The Incident Personnel Performance Rating (ICS 225) gives supervisors the opportunity to evaluate subordinates on incident assignments. THIS RATING IS TO BE USED ONLY FOR DETERMINING AN INDIVIDUAL'S PERFORMANCE ON AN INCIDENT/EVENT.

Preparation. The ICS 225 is normally prepared by the supervisor for each subordinate, using the evaluation standard given in the form. The ICS 225 will be reviewed with the subordinate, who will sign at the bottom. It will be delivered to the Planning Section before the rater leaves the incident

Distribution. The ICS 225 is provided to the Planning Section Chief before the rater leaves the incident.

Notes:
- Use a blank ICS 225 for each individual.
- Additional pages can be added based on individual need.

Block Number	Block Title	Instructions
1	**Name**	Enter the name of the individual being rated.
2	**Incident Name**	Enter the name assigned to the incident.
3	**Incident Number**	Enter the number assigned to the incident.
4	**Home Unit Address**	Enter the physical address of the home unit for the individual being rated.
5	**Incident Agency and Address**	Enter the name and address of the authority having jurisdiction for the incident.
6	**Position Held on Incident**	Enter the position held (e.g., Resources Unit Leader, Safety Officer, etc.) by the individual being rated.
7	**Date(s) of Assignment** • From • To	Enter the date(s) (month/day/year) the individual was assigned to the incident.
8	**Incident Complexity Level** ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5	Indicate the level of complexity for the incident.
9	**Incident Definition**	Enter a general definition of the incident in this block. This may be a general incident category or kind description, such as "tornado," "wildfire,", "bridge collapse,", "civil unrest," "parade," "vehicle fire," "mass casualty," etc.
10	**Evaluation**	Enter "X" under the appropriate column indicating the individual's level of performance for each duty listed.
	N/A	The duty did not apply to this incident.
	1 – Unacceptable	Does not meet minimum requirements of the individual element. Deficiencies/Improvements needed must be identified in Remarks.
	2 – Needs Improvement	Meets some or most of the requirements of the individual element. IDENTIFY IMPROVEMENT NEEDED IN REMARKS.
	3 – Met Standards	Satisfactory. Employee meets all requirements of the individual element.

Block Number	Block Title	Instructions
	4 – Fully Successful	Employee meets all requirements and exceeds one or several of the requirements of the individual element.
10	5 – Exceeded Expectations	Superior. Employee consistently exceeds the performance requirements.
11	**Knowledge of the Job/ Professional Competence:**	Ability to acquire, apply, and share technical and administrative knowledge and skills associated with description of duties. (Includes operational aspects such as marine safety, seamanship, airmanship, SAR, etc., as appropriate.)
12	**Ability To Obtain Performance/Results:**	Quality, quantity, timeliness, and impact of work.
13	**Planning/Preparedness:**	Ability to anticipate, determine goals, identify relevant information, set priorities and deadlines, and create a shared vision of the Incident Management Team (IMT).
14	**Using Resources:**	Ability to manage time, materials, information, money, and people (i.e., all IMT components as well as external publics).
15	**Adaptability/Attitude:**	Ability to maintain a positive attitude and modify work methods and priorities in response to new information, changing conditions, political realities, or unexpected obstacles.
16	**Communication Skills:**	Ability to speak effectively and listen to understand. Ability to express facts and ideas clearly and convincingly.
17	**Ability To Work on a Team:**	Ability to manage, lead and participate in teams, encourage cooperation, and develop esprit de corps.
18	**Consideration for Personnel/Team Welfare:**	Ability to consider and respond to others' personal needs, capabilities, and achievements; support for and application of worklife concepts and skills.
19	**Directing Others:**	Ability to influence or direct others in accomplishing tasks or missions.
20	**Judgment/Decisions Under Stress:**	Ability to make sound decisions and provide valid recommendations by using facts, experience, political acumen, common sense, risk assessment, and analytical thought.
21	**Initiative**	Ability to originate and act on new ideas, pursue opportunities to learn and develop, and seek responsibility without guidance and supervision.
22	**Physical Ability for the Job:**	Ability to invest in the IMT's future by caring for the physical health and emotional well-being of self and others.
23	**Adherence to Safety:**	Ability to invest in the IMT's future by caring for the safety of self and others.
24	**Remarks**	Enter specific information on why the individual received performance levels.
25	**Rated Individual** (This rating has been discussed with me) • Signature • Date/Time	Enter the signature of the individual being rated. Enter the date (month/day/year) and the time (24-hour clock) signed.
26	**Rated by** • Name • Signature • Home Unit • Position Held on This Incident • Date/Time	Enter the name, signature, home unit, and position held on the incident of the person preparing the form and rating the individual. Enter the date (month/day/year) and the time (24-hour clock) prepared.

Appendix A

BAYVIEW TORNADO ICS-209

***1. Incident Name: Bayview Tornado**			**2. Incident Number: 0502 (from F and A)**	
***3. Report Version** (check one box on left)**:** X Initial ☐ Update ☐ Final Rpt # (if used):	***4. Incident Commander(s) & Agency or Organization:** N. Kempfer-Needland Fire, D. Roberts-Needland EMS, K. Anthony-Granger Co. Sheriff's Office, J. Davila-Needland PD, D.Doan-Granger		**5. Incident Management Organization:** Unified Command	***6. Incident Start Date/Time:** Date: 5-2-2009 Time: 1719 hours Time Zone: Central
7. Current Incident Size or Area Involved (use unit label – e.g., “sq mi,” “city block”)**:** 9 Block area	**8. Percent (%) Contained** **Completed** 20%	***9. Incident Definition:** Tornado	**10. Incident Complexity Level:** Type 3	***11. For Time Period:** From Date/Time: 5-2-2009/2029hrs To Date/Time: 5-3-2009/0600hrs

Approval & Routing Information

***12. Prepared By:** Print Name: SL Gaithe ICS Position: Planning Deputy Date/Time Prepared: May 09, 2009 / 2249 hours	***13. Date/Time Submitted:** 5-3-2009 0600 hrs **Time Zone:** Central
***14. Approved By:** Print Name: A. Archer ICS Position: Planning Chief Signature: ______________________	***15. Primary Location, Organization, or Agency Sent To:** EOC

Incident Location Information

***16. State:** Columbia	***17. County/Parish/Borough:** Granger County	***18. City:** Needland
19. Unit or Other: Needland EMS, Needland Police, Needland Fire	***20. Incident Jurisdiction:** City of Needland	**21. Incident Location Ownership** (if different than jurisdiction)**:** N/A
22. Longitude (indicate format)**:** -97 23’ 38.30 **Latitude** (indicate format)**:** 27 47’ 38.99	**23. US National Grid Reference:** N/A	**24. Legal Description** (township, section, range)**:** Bayview area encompassing Bayview Convention Cntr
***25. Short Location or Area Description** (list all affected areas or a reference point)**:** City of Needland in Granger County, State of Columbia. The tornado struck the downtown area new the Bayview Convention Center.		**26. UTM Coordinates:** N/A
27. Note any electronic geospatial data included or attached (indicate data format, content, and collection time information and labels)**:** N/A		

Incident Summary

***28. Significant Events for the Time Period Reported** (summarize significant progress made, evacuations, incident growth, etc.)**:**

Responders call to the scene of a tornado touchdown that damaged many building in a 9 block area of Baytown, Evacuation as well as search and rescue efforts are underway. As of 23:50 42 victims have been confirmed deceased and 983 injuries.

29. Primary Materials or Hazards Involved (hazardous chemicals, fuel types, infectious agents, radiation, etc.)**:**

None known at this time. Mostly Structural Damage and poor weather is hampering rescue/recovery efforts.

30. Damage Assessment Information (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.)**:**	A. Structural Summary	B. # Threatened (72 hrs)	C. # Damaged	D. # Destroyed
	E. Single Residences			
	F. Nonresidential Commercial Property	50	12	5
	Other Minor			

	Structures			
	Other			

ICS 209, Page 1 of ___	** Required when applicable.*

BAYVIEW TORNADO ICS-209

***1. Incident Name:** Bayview Tornado	**2. Incident Number:** 0502

Additional Incident Decision Support Information

***31. Public Status Summary:**	A. # This Reporting Period	B. Total # to Date	***32. Responder Status Summary:**	A. # This Reporting Period	B. Total # to Date
C. Indicate Number of Civilians (Public) Below:			*C. Indicate Number of Responders Below:*		
D. Fatalities	102		D. Fatalities	0	
E. With Injuries/Illness	1837		E. With Injuries/Illness	4	
F. Trapped/In Need of Rescue			F. Trapped/In Need of Rescue	0	
G. Missing *(note if estimated)*			G. Missing	0	
H. Evacuated *(note if estimated)*			H.		
I. Sheltering in Place *(note if estimated)*			I. Sheltering in Place	0	
J. In Temporary Shelters *(note if est.)*	700		J.		
K. Have Received Mass Immunizations	0		K. Have Received Immunizations	0	
L. Require Immunizations *(note if est.)*	0		L. Require Immunizations	0	
M. In Quarantine	0		M. In Quarantine	0	
N. Total # Civilians (Public) Affected:			*N. Total # Responders Affected:*		

33. Life, Safety, and Health Status/Threat Remarks:

May trapped and missing victims

35. Weather Concerns (synopsis of current and predicted weather; discuss related factors that may cause concern)**:**

Heavy rain and severe weather

***34. Life, Safety, and Health Threat Management:**	A. Check if Active
A. No Likely Threat	☐
B. Potential Future Threat	X
C. Mass Notifications in Progress	☐
D. Mass Notifications Completed	☐
E. No Evacuation(s) Imminent	☐
F. Planning for Evacuation	☐
G. Planning for Shelter-in-Place	☐
H. Evacuation(s) in Progress	X
I. Shelter-in-Place in Progress	X
J. Repopulation in Progress	X
K. Mass Immunization in Progress	☐
L. Mass Immunization Complete	☐
M. Quarantine in Progress	☐
N. Area Restriction in Effect	X
	☐
	☐
	☐
	☐

36. Projected Incident Activity, Potential, Movement, Escalation, or Spread and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour timeframes:

12 hours: Search and rescue, looting, shelter for 1st responders, demobilization

24 hours: Treatment and transport of victims, restore utilities

48 hours: Area clean up

72 hours: Restore business

Anticipated after 72 hours: Rebuild

37. Strategic Objectives (define planned end-state for incident)**:**

The desired outcome is to restore life and property to normal operation as soon as possible.

** Required when applicable.*

BAYVIEW TORNADO ICS-209

***1. Incident Name:** Bayview Tornado incident	**2. Incident Number:** 0502

Additional Incident Decision Support Information *(continued)*

38. Current Incident Threat Summary and Risk Information in 12-, 24-, 48-, and 72-hour timeframes and beyond. Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business. Identify corresponding incident-related potential economic or cascading impacts.

12 hours: Heavy casualties taxing the EMS system. Severe weather, need for additional Engines

24 hours: N/A

48 hours: Need for relief teams, supplies and equipment

72 hours: Need for supplies, food and drink

Anticipated after 72 hours: Same

39. Critical Resource Needs in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives. List resource category, kind, and/or type, and amount needed, in priority order:

12 hours: Loss of 6 Engines that are needed by to their community

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

40. Strategic Discussion: Explain the relation of overall strategy, constraints, and current available information to:

1) critical resource needs identified above,
2) the Incident Action Plan and management objectives and targets,
3) anticipated results.

Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.

41. Planned Actions for Next Operational Period:

Continue with search, rescue and safety operations

42. Projected Final Incident Size/Area (use unit label – e.g., "sq mi")**:** 9 Sq blocks

43. Anticipated Incident Management Completion Date: Unknown

44. Projected Significant Resource Demobilization Start Date: 4 May 2009

45. Estimated Incident Costs to Date: 277,578

46. Projected Final Incident Cost Estimate: Unknown

47. Remarks (or continuation of any blocks above – list block number in notation)**:**

BAYVIEW TORNADO ICS-209

1. Incident Name: Bayview Tornado	**2. Incident Number:** 0502

Incident Resource Commitment Summary

48. Agency or Organization:	**49. Resources** (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box)**:**																					**50. Additional Personnel** not assigned to a resource**:**	**51. Total Personnel** (includes those associated with resources – e.g., aircraft or engines – *and* individual overhead)**:**
	Police Motor units	ALS Ambulance	BLS Ambulance	Engine	Ladder Truck	Bus - 45 Pass	Medic	Animal Cont. Off	Backhoe	EMS Res. Team	Rescue	DPW Sedan	Dump Truck	DPW Light Plant	Structural Eng.	Street Sweeper	Heavy Rescue	Police Officer	Medical Examiner	Buses – 20 Pass	Portable Morgue		
City of Needland	33 / 33	16 / 32	4 / 8	22 / 88	7 / 28		12 / 24	5 / 5	7 / 7	3 / 45		4 / 4	5 / 5	11 / 11	3 / 3	4 / 4	3 / 15	40 / 40	2 / 1		1 / 9	19	302
Granger County Fire Department				15 / 60	7 / 28																	8	96
Arkansas Pass Fire Department	3 / 3	3 / 6		3 / 12	2 / 8		8 / 8				3 / 6							5 / 5				6	54
Boise Fire Department			2 / 4	2 / 8	2 / 8		6 / 6				2 / 8											4	38
Calvinton Fire Department		2 / 4		3 / 12	2 / 8		4 / 4															2	30
Columbia State Police	6 / 6																	7 / 7				1	14
Granger Area Transit Enterprise						18 / 18														12 / 12		3	33
Granger County EMS		21 / 42	9 / 18				16 / 16															4	80
Granger County Sherriff	12 / 12																	23 / 23				15	50
City of Pleasant Grove	17 / 17			5 / 20	2 / 8		6 / 6				1 / 4		2 / 4	2 / 4				11 / 11				9	83
MED STAT										3 / 20													30
Port Arkansas	5 / 5																						5
Taft Police Department	3 / 3																4 / 4						7
Granger County DPW									4 / 4				6 / 6	7 / 7		8 / 8						14	39
52. Total Resources	**79**	**42**	**15**	**50**	**22**	**18**	**52**	**5**	**11**	**5**	**6**	**4**	**13**	**20**	**3**	**12**	**3**	**90**	**2**	**12**	**1**	**85**	**861**

53. Additional Cooperating and Assisting Organizations Not Listed Above:

ICS 209, Page ___ of ___	** Required when applicable.*

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RESOURCE REQUEST MESSAGE (ICS 213 RR)

1. Incident Name:	**2. Date/Time**	**3. Resource Request Number:**

Requestor

4. Order (Use additional forms when requesting different resource sources of supply.)**:**

Qty.	Kind	Type	Detailed Item Description: (Vital characteristics, brand, specs, experience, size, etc.)	Arrival Date and Time		Cost
				Requested	Estimated	

5. Requested Delivery/Reporting Location:

6. Suitable Substitutes and/or Suggested Sources:

7. Requested by Name/Position:	**8. Priority:** ☐ Urgent ☐ Routine ☐ Low	**9. Section Chief Approval:**

Logistics

10. Logistics Order Number:	**11. Supplier Phone/Fax/Email:**
12. Name of Supplier/POC:	

13. Notes:

14. Approval Signature of Auth Logistics Rep:	**15. Date/Time:**

16. Order placed by (check box): ☐ SPUL ☐ PROC

Finance

17. Reply/Comments from Finance:

18. Finance Section Signature:	**19. Date/Time:**

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