February 2006

CHIEF OFFICER TRAINING CURRICULUM

OPERATIONS

INSTRUCTOR GUIDE

MODULES 1-8

Final Version
February 2006
COTC-OPS-IG

Chief Officer Training Curriculum--Operations (Modules 1-8)

February 2006

CHIEF OFFICER TRAINING CURRICULUM

OPERATIONS

INSTRUCTOR GUIDE

MODULES 1-8

Federal Emergency Management Agency
United States Fire Administration
National Fire Academy

The Federal Emergency Management Agency (FEMA) was established in 1979. FEMA's mission is to focus federal effort on preparedness for, mitigation of, response to, and recovery from emergencies encompassing the full range of natural and manmade disasters.

FEMA's National Emergency Training Center (NETC) in Emmitsburg, Maryland, includes the United States Fire Administration (USFA), its National Fire Academy (NFA), and the Emergency Management Institute (EMI).

To achieve the Academy's legislated mandate (under Public Law 93-498, October 29, 1974), "to advance the professional development of fire service personnel and of other persons engaged in fire prevention and control activities," the National Fire Academy has developed an effective program linkage with established fire training systems that exist at the state and local levels. It is the responsibility of this division to support and strengthen these delivery systems. Academy field courses have been sponsored by the respective state fire training systems in every state.

The staff of the National Fire Academy is proud to join with state and local fire agencies in providing educational opportunities to the members of the nation's fire services.

Course Goal

The goal of the Operations course is to provide an educational experience that will help the newly promoted chief officer or battalion chief to perform competently at an emergency incident. Although emergencies have been reduced at varying rates, they are still the most resource intensive and dangerous component of the emergency services today.

Course Objectives

Upon completing this module, students will be able to:

- Make strategic decisions to effectively manage an emergency incident;
- Develop an Incident Action Plan (IAP) for a complex incident; and
- Preplan for target hazards.

Audience

This training program is intended for newly promoted chief officers or battalion chiefs who are in transition from supervisory responsibilities to managerial responsibilities. These officers have a critical need to look at emergency management in a different way than personnel in lower ranks. The training is designed for these chief officers who will be responsible for strategic decision-making at the incident level, leaving the tactical decision-making to lower-level officers they now lead. In career departments, these chief officers may be at the battalion chief level, while in volunteer or combination volunteer and career departments, these chief officers may have another rank, such as Captain or Lieutenant.

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Precourse Assignments

MODULE 2

PRE-ASSIGNMENT

MODULE 2: INCIDENT COMMAND DECISION-MAKING

PRE-ASSIGNMENT

All students are required to complete this pre-assignment.

Directions

1. Review the Pre-incident Planning Priority Matrix-Target Hazards and Category Definitions and Occupancy Types on the next several pages.

2. Review the six sample Pre-incident Planning Priority Matrix Worksheets. Read for understanding of how and why the status categories and values were derived. The examples shown are for a target hazard zone, a five-block area in one community. The definition of a zone will vary within each community. For example, a zone could encompass all of the first-due hazards in a single engine company area of responsibility, all target hazards within a battalion, or all target hazards in a community.

3. Choose six target hazards **in your own community** and fill out one blank matrix worksheet for each target hazard you choose. A target hazard is defined as a facility, structure, operation, process, or situation that may produce or propagate a fire or a related emergency involving large property loss, heavy life loss or personal injury, or significant damage and panic. Typically, we consider target hazards to be lumberyards, refineries/bulk storage tanks, public assemblies, and similar occupancies.

4. Examine the sample Summary Worksheet, filled out for the six sample matrix worksheets. Then fill out the blank Summary Worksheet provided for the six target hazards you have chosen.

Bring your completed pre-assignment with you on the day of class.

Pre-Incident Planning Priority Matrix
Target Hazards

Step 1: Determine the proper value for each category

Step 2: Add values

Step 3: Place in priority, with highest value being the first inspected categories and values

A. OCCUPANCY (PER NFPA 13)

Light Hazard 1

Ordinary Hazard 2

Extra Hazard 3

B. SIZE OF FACILITY (sq. ft.)

Less than 20,000 1

20,000 to 49,999 2

50,000 plus 3

C. PEOPLE EXPOSED

9 or fewer 1

10 to 25 2

26 to 100 3

101 to 250 4

251 plus 5

D. LIFE HAZARD (per NFPA 101)

Unusual 1

Storage 2

Industrial 3

Business 4

Mercantile 5

Detention/Correction 6

Health Care 7

Residential 8

Educational 9

Assembly 10

Note: Definitions of the subcategories of "A" and "D" appear on the following pages.

Pre-Incident Priority Matrix Category Definitions Occupancy (per NFPA 13)—Category "A"

1. Light Hazard Occupancies

Light Hazard—Occupancies or portions of other occupancies where the quantity and/or combustibility of contents is low and fires with relatively low rates of heat release are expected.

Light hazard occupancies include occupancies having conditions similar to:

Churches
Clubs
Eaves and overhangs, if combustible construction with no combustibles beneath
Educational
Hospitals
Institutional
Libraries, except large stack rooms
Museums
Nursing or convalescent homes
Office, including data processing
Residential
Restaurant seating areas
Theaters and auditoriums excluding stages and prosceniums
Unused attics

2. Ordinary Hazard Occupancies

Ordinary Hazard (Group 1)—Occupancies or portions of other occupancies where combustibility is low, quantity of combustibles is moderate, stock piles of combustibles do not exceed 8 ft. (2.4m), and fires with moderate rates of heat release are expected.

Ordinary hazard occupancies (group 1) include occupancies having conditions similar to:

Automobile parking garages
Bakeries
Beverage manufacturing
Canneries
Dairy products manufacturing and processing
Electronic plants

Glass and glass products manufacturing
Laundries
Restaurant service areas

Ordinary Hazard (Group 2)—Occupancies or portions of other occupancies where quantity and combustibility of contents is moderate, stock piles do not exceed 12 ft. (3.7m), and fires with moderate rate of heat release are expected.

Ordinary hazard occupancies (group 2) include occupancies having conditions similar to:

Cereal mills
Chemical plants — ordinary
Cold storage warehouses
Confectionery products
Distilleries
Leather goods manufacturing
Libraries — large stack room areas
Machine shops
Metal working
Mercantiles
Printing and publishing
Textile manufacturing
Tobacco products manufacturing
Wood product assembly

Ordinary Hazard (Group 3)—Occupancies or portions of other occupancies where quantity and/or combustibility of contents is high, and fires of high rate of heat release are expected.

Ordinary hazard occupancies (group 3) include occupancies having conditions similar to:

Feed mills
Paper and pulp mills
Paper process plants
Piers and wharves
Repair garages
Tire manufacturing
Warehouses (having moderate to higher combustibility of content, such as paper, household furniture, paint, general storage, whiskey, etc.)
Wood machining

3. Extra Hazard Occupancies

Extra Hazard—Occupancies or portions of other occupancies where quantity and combustibility of contents is very high, and flammable and combustible liquids, dust, lint, or other materials are present introducing the probability of rapidly developing fires with high rates of heat release.

Extra hazard occupancies involve a wide range of variables which may produce severe fires. The following shall be used to evaluate the severity of extra hazard occupancies.

Extra hazard occupancies include occupancies having conditions similar to:

Combustible hydraulic fluid use areas
Die casting
Metal extruding
Plywood and particleboard manufacturing
Printing (using inks with below 100°F [37.8°C] flashpoints)
Rubber reclaiming, compounding, drying, milling, vulcanizing
Sawmills
Textile picking, opening, blending, garneting, carding, combining of cotton, synthetics, wood shoddy, or burlap
Upholstering with plastic foams
Asphalt saturating
Flammable liquids spraying
Flow coating
Mobile home or modular building assemblies (where finished enclosure is present and has combustible interiors)
Open oil quenching
Solvent cleaning
Varnish and paint dipping

Materials excerpted from NFPA 13, pages 13-6, 13-59, 13-60.

Pre-Incident Priority Matrix Category Definitions Occupancy (per NFPA 101)—Category "D"

1. Unusual Structures

Occupancies in unusual structures include any building or structure that cannot be properly classified in any of the occupancy groups, either by reason of some function not encompassed or some unusual combination of functions necessary to the purpose of the building or structure.

2. Storage

Storage occupancies include all buildings or structures utilized primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals. Included in this occupancy group are:

Barns
Bulk oil storage
Cold storage
Freight terminals
Grain elevators
Hangars
Parking garages
Stables
Truck and marine terminals
Warehouses

Minor storage incidental to another occupancy shall be treated as part of the other occupancy.

3. Industrial

Industrial occupancies include factories making products of all kinds and properties devoted to operations such as processing, assembling, mixing, packaging, finishing or decorating, and repairing, including, among others, the following:

College and university noninstructional laboratories
Creameries
Dry cleaning plants

Factories of all kinds
Gas plants
Laboratories
Laundries
Power plants
Pumping stations
Refineries
Sawmills
Smokehouses

4. Business

Business occupancies are those used for the transaction of business (other than that covered under Mercantile), for the keeping of accounts and records, and similar purposes. Included in this occupancy group are:

City halls
College and university—instructional buildings, classrooms under 50 persons, and instructional laboratories
Courthouses
Dentist offices
Doctor offices
General offices
Outpatient clinics, ambulatory
Town halls

Minor office occupancy incidental to operations in another occupancy shall be considered as a part of the predominating occupancy and shall be subject to the provisions of this code applying to the predominating occupancy.

5. Mercantile

Mercantile occupancies include stores, markets, and other rooms, buildings, or structures for the display and sale of merchandise. Included in this occupancy group are:

Auction rooms
Department stores
Drugstores
Shopping centers
Supermarkets

Minor merchandising operations in buildings predominantly of other occupancies, such as a newsstand in an office building, shall be subject to the exit requirement of the predominant occupancy.

6. Detention and Correctional Occupancies

Detention and correctional occupancies (also known as residential-restrained care institutions) are those used to house occupants under some degree of restraint or security. Detention and correctional occupancies are occupied by persons who are mostly incapable of self-preservation because of security measures not under the occupants' control.

Detention and correctional occupancies include:

Correctional centers
Detention centers
Jails
Penal institutions
Reformatories
Residential-restrained care

7. Health Care

Health care occupancies are those used for purposes such as medical or other treatment or care of persons suffering from physical or mental illness, disease, or infirmity; and for the care of infants, convalescents, or infirm aged persons. Health care occupancies provide sleeping facilities for the occupants or are occupied by persons who are mostly incapable of self-preservation because of age, physical or mental disability, or because of security measures not under the occupants' control.

Health care occupancies include:

(a) Custodial care facilities,
    Nurseries
    Homes for the infirm aged
    Mentally retarded care institutions
(b) Hospitals
(c) Nursing homes

Health care occupancies also include:

(a) Ambulatory care facilities
(b) Supervisory care facilities

8. Residential

Residential occupancies are those occupancies in which sleeping accommodations are provided for normal residential purposes and include all buildings designed to provide sleeping accommodations.

Exception: Those classified under Health Care or Detention and Correctional Occupancies.

Residential occupancies are treated separately in this *Code* in the following groups:

(a) Apartments
(b) Board and care facilities
(c) Hotels
    Motels
    Dormitories
    Orphanages for age 6 years and older
(d) Lodging or rooming houses
(e) One- and two-family dwellings

9. Educational

Educational occupancies include all buildings used for the gathering of groups of six or more persons for purposes of instruction. Educational occupancies include:

Academies
Kindergartens
Nursery schools
Schools

Educational occupancies also include day-care facilities.

Other occupancies associated with educational institutions shall be in accordance with the appropriate parts of this *Code*.

Exception: Licensed day-care facilities shall include those of any capacity.
In cases where instruction is incidental to some other occupancy, the section of this *Code* governing such other occupancy shall apply.

10. Assembly

Assembly occupancies include, but are not limited to, all buildings or portions of buildings used for gathering together 50 or more persons for such purposes as deliberation, worship, entertainment, eating, drinking, amusement, or awaiting transportation. Assembly occupancies include:

Armories
Assembly halls
Auditoriums
Bowling lanes
Churches
Club rooms
College and university classrooms, 50 persons and over
Conference rooms
Courtrooms
Dance halls
Drinking establishments
Exhibition halls
Gymnasiums
Libraries
Mortuary chapels
Motion picture theaters
Museums
Passenger stations and terminals of air, surface, underground, and marine public transportation facilities
Pool rooms
Recreation piers
Restaurants
Skating rinks
Theaters

Occupancy of any room or space for assembly purposes by less than 50 persons in a building of other occupancy and incidental to such other occupancy shall be classed as part of the other occupancy and subject to the provisions applicable thereto.

Materials excerpted from NFPA 101, Pages 101-7 and 101-8.

SAMPLE Pre-Incident Planning Priority Matrix Worksheet

Target Hazard

Name MAIN STREET HOTEL

Location 100 Main Street

Occupancy Hotel

CATEGORY	STATUS	VALUE
Occupancy	light hazard	1
Size	125,000 sq. ft.	3
People Exposed	average 500	5
Life Hazard	assembly	10
	TOTAL	19

COMMENTS: Hotel has convention/conference facilities.

SAMPLE Pre-Incident Planning Priority Matrix Worksheet

Target Hazard

Name ABC Paints, Inc.

Location 500 Main Street

Occupancy Paint Manufacturing

CATEGORY	STATUS	VALUE
Occupancy	extra hazard	3
Size	600,000 sq. ft.	3
People Exposed	275	5
Life Hazard	industrial	3
	TOTAL	14

COMMENTS:

SAMPLE Pre-Incident Planning Priority Matrix Worksheet

Target Hazard

Name County Hospital

Location 200 Main Street

Occupancy Hospital

CATEGORY	STATUS	VALUE
Occupancy	light hazard	1
Size	25,000 sq. ft.	2
People Exposed	200	4
Life Hazard	health care	7
	TOTAL	14

COMMENTS:

SAMPLE Pre-Incident Planning Priority Matrix Worksheet

Target Hazard

Name St. Michael's Church

Location 300 Main Street

Occupancy Church

CATEGORY	STATUS	VALUE
Occupancy	light hazard	1
Size	25,000 sq. ft.	2
People Exposed	300	5
Life Hazard	assembly	10
	TOTAL	18

COMMENTS:

SAMPLE Pre-Incident Planning Priority Matrix Worksheet

Target Hazard

Name Bob's Donuts

Location 400 Main Street

Occupancy Bakery

CATEGORY	STATUS	VALUE
Occupancy	ordinary hazard	2
Size	12,000 sq. ft.	1
People Exposed	5	1
Life Hazard	mercantile	5
	TOTAL	9

COMMENTS:

SAMPLE Pre-Incident Planning Priority Matrix Worksheet

Target Hazard

Name: Town Laundromat

Location: 420 Main Street

Occupancy: Laundry

CATEGORY	STATUS	VALUE
Occupancy	ordinary	2
Size	15,000 sq. ft.	1
People Exposed	8	1
Life Hazard	industrial	3
	TOTAL	7

COMMENTS: Includes dry cleaning

Summary Worksheet

Sample Pre-Incident Planning Priority Matrix Worksheet

Zone: Main Street 100-500 Blocks (right side)

	#100 Hotel	#200 Hospital	#300 Church	#400 Bakery	#420 Laundry	#500 Paint Mfg.
Occupancy	1	1	1	2	2	3
Size	3	2	2	1	1	3
# People	5	4	5	1	1	5
Life Hazard	10*	7	10	5	3	3
Total	19	14	18	9	7	14
Priority	1	3	2	5	6	4

* This assumes an assembly area exists in the hotel for meetings/banquets, etc. This matrix weighs heavily toward life safety issues, as is seen in the priority decision. Your community is the basis for the categories and values. This is simply an example of how to determine priorities for inspection.

Pre-Incident Planning Priority Matrix Worksheet
Target Hazard

Name _____

Location _____

Occupancy _____

CATEGORY	STATUS	VALUE
Occupancy	_____	
Size	_____	
People Exposed	_____	
Life Hazard	_____	
	TOTAL	

COMMENTS:

Pre-Incident Planning Priority Matrix Worksheet
Target Hazard

Name _____

Location _____

Occupancy _____

CATEGORY	STATUS	VALUE
Occupancy	_____	
Size	_____	
People Exposed	_____	
Life Hazard	_____	
	TOTAL	

COMMENTS:

Pre-Incident Planning Priority Matrix Worksheet
Target Hazard

Name _____

Location _____

Occupancy _____

CATEGORY	STATUS	VALUE
Occupancy	_____	
Size	_____	
People Exposed	_____	
Life Hazard	_____	
	TOTAL	

COMMENTS:

Pre-Incident Planning Priority Matrix Worksheet
Target Hazard

Name _____

Location _____

Occupancy _____

CATEGORY	STATUS	VALUE
Occupancy	_____	
Size	_____	
People Exposed	_____	
Life Hazard	_____	
	TOTAL	

COMMENTS:

Pre-Incident Planning Priority Matrix Worksheet

Target Hazard

Name _____

Location _____

Occupancy _____

CATEGORY	STATUS	VALUE
Occupancy	_____	
Size	_____	
People Exposed	_____	
Life Hazard	_____	
	TOTAL	

COMMENTS:

Pre-Incident Planning Priority Matrix Worksheet

Target Hazard

Name _____

Location _____

Occupancy _____

CATEGORY	STATUS	VALUE
Occupancy	_____	
Size	_____	
People Exposed	_____	
Life Hazard	_____	
	TOTAL	

COMMENTS:

Summary Worksheet

Pre-Incident Planning Priority Matrix Worksheet

Zone:

	#	#	#	#	#	#
Occupancy						
Size						
# People						
Life Hazard						
Total						
Priority						

MODULE 0

MODULE 0

INTRODUCTION

MODULE 0:

INTRODUCTION

Conceptual Framework

This course is intended for a third level of management, the battalion chief or newly promoted chief officer, in a typical emergency services organization. The newly promoted chief officer will think in terms of strategy, as opposed to tactics, on an emergency scene. The officer will need a good, basic understanding of tactics as they play into strategic decisions, but will focus on strategic decisions. To this end, it is recommended that students complete Modules 1 through 3 (Application of the Incident Command System [ICS], Incident Command Decision-Making, and Incident Action Plan [IAP]/Planning) before enrolling in any of the simulation exercise modules.

The simulations in this course are designed to provide opportunities for the newly promoted chief officers to develop their skills as incident commanders at emergencies that require more resources than “normal” first-alarm, initial attacks in their communities. This simulation methodology allows the students to transition from the tactical perspective of a company officer to a strategic perspective of a chief officer who makes command level decisions based on strategic objectives required of an incident commander at a major target hazard incident.

The officers attending this course should be familiar with the target hazards found in their communities. Some of these hazards are significant and are known as

target hazards. Target hazards are defined as incidents that:

- Overload fire equipment and personnel resources;
- Involve atypical hazards;
- Produce a significant negative impact on the community;
- Require technical advice for effective strategy development; and
- May initiate multi-agency involvement.

The most serious of these target hazards, for example, a major commercial or high-rise fire, can quickly stretch the capacity of the fire department's resources.

The students should rotate through the various command and general staff positions to see the responsibilities of the incident commander as individual components. The instructor would normally divide the class into groups of six to eight students, assigning each student a position on the Incident Management Team (IMT). An alternate method is to assign more experienced students to the IMT positions and assign other students in deputy or assistant roles, which allows them to shadow their more experienced peers. As the course develops, the instructor may begin to assign additional responsibilities to the command and general staff, including the development of the Incident Action Plan (IAP). The ICS forms needed to complete the IAP are included in the appendix of each simulation exercise module.

Course Goal

The goal of the Operations course is to provide an educational experience that will help the newly promoted chief officer or battalion chief to perform competently at an emergency incident. Although emergencies have been reduced at varying rates, they

are still the most resource intensive and dangerous component of the emergency services today.

Course Objectives

Upon completing this module, students will be able to:

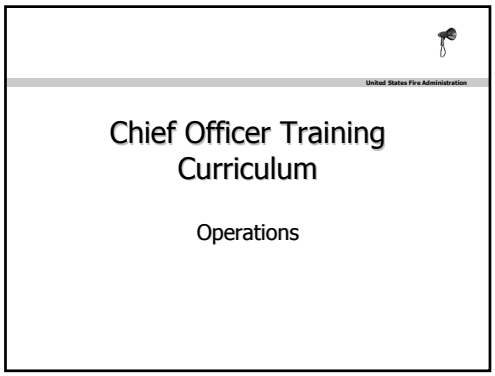
- Make strategic decisions to effectively manage an emergency incident;
- Develop an Incident Action Plan (IAP) for a complex incident; and
- Preplan for target hazards.

Outline [Note: Total time for the Course Introduction may vary for each course in the COTC.]

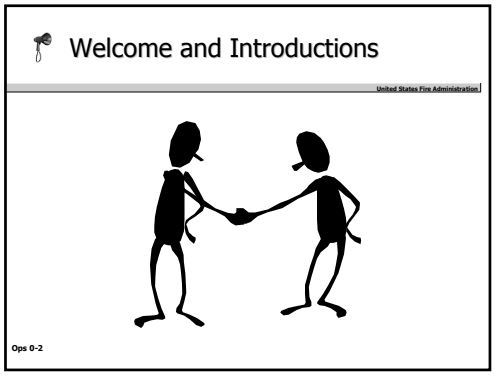
I. Welcome ..... 5 minutes
II. Introductions ..... 15 minutes
III. Administrative Items ..... 5 minutes
IV. Course Overview ..... 5 minutes
30 minutes

Instructor Notes: You may use this module to introduce each training module or session. Depending on the audience, you may not need to complete the introduction section.

Slide 0-1: COTC Operations



Slide 0-2: Welcome and Introductions



I. Welcome

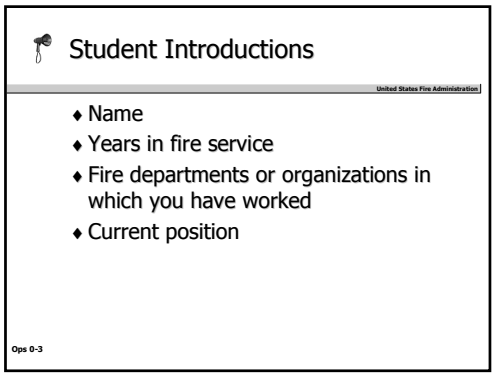
Welcome all participants.

II. Introductions

A. Instructor introductions

Introduce yourself and note your background and experience, and introduce any guests.

Slide 0-3: Student Introductions



B. Student introductions

Ask students to briefly introduce themselves. Students should state:

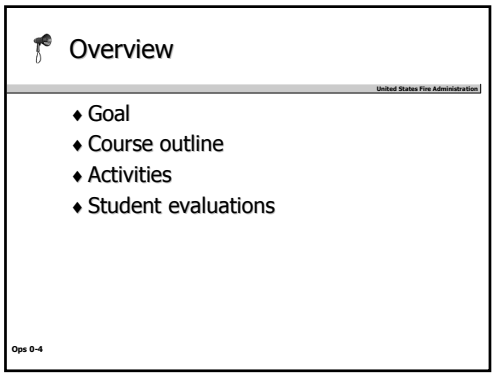
- Their names,
- Years in the fire service,
- Fire department/organization, and
- Current position.

III. Administrative Items

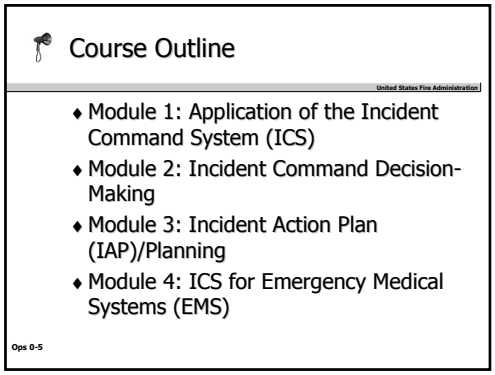
Briefly mention administrative matters, such as:

- Starting times,
- Breaks,
- Materials
- Facility, and
- Classroom rules.

Slide 0-4: Overview



Slide 0-5: Course Outline



IV. Course Overview

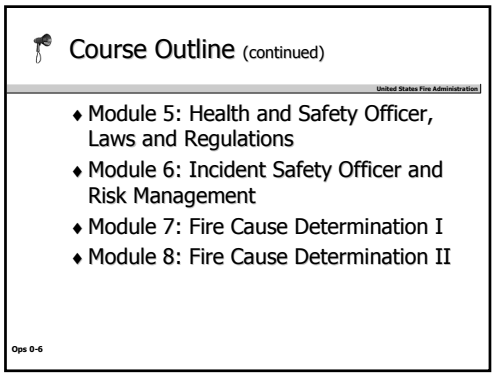
A. Course goal

The goal of the Operations course is to provide an educational experience that will help the newly promoted chief officer or battalion chief to perform competently at an emergency incident. Although emergencies have been reduced at varying rates, they are still the most resource intensive and dangerous component of the emergency services today.

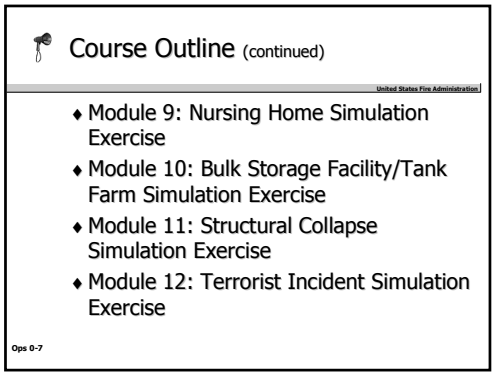
B. Course outline

- Module 1: Application of the Incident Command System (ICS)
- Module 2: Incident Command Decision-Making
- Module 3: Incident Action Plan (IAP)/Planning
- Module 4: ICS for Emergency Medical Services (EMS)

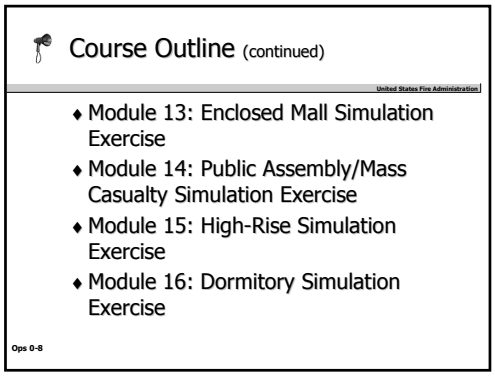
Slide 0-6: Course Outline (continued)



Slide 0-7: Course Outline (continued)

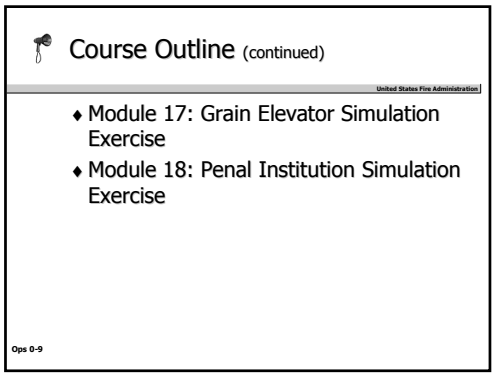


Slide 0-8: Course Outline (continued)



- Module 5: Health and Safety Officer, Laws and Regulations
- Module 6: Incident Safety Officer and Risk Management
- Module 7: Fire Cause Determination I
- Module 8: Fire Cause Determination II
- Module 9: Nursing Home Simulation Exercise
- Module 10: Bulk Storage Facility/Tank Farm Simulation Exercise
- Module 11: Structural Collapse Simulation Exercise
- Module 12: Terrorist Incident Simulation Exercise
- Module 13: Enclosed Mall Simulation Exercise
- Module 14: Public Assembly/Mass Casualty Simulation Exercise
- Module 15: High-Rise Simulation Exercise
- Module 16: Dormitory Simulation Exercise

Slide 0-9: Course Outline (continued)



- Module 17: Grain Elevator Simulation Exercise
- Module 18: Penal Institution Simulation Exercise

C. Activities

The course focuses upon the students' application and demonstration of skills and knowledge gained in the classroom and the opportunity to share views and approaches during discussions.

Instructor presentations and lectures will be kept to a minimum.

The success of each activity depends upon students' placing themselves into the situation presented.

The activities attempt to portray real-world scenarios and provide students a common framework in which to work.

Time for discussion and feedback will be provided following the activities.

D. Student evaluations

Students will complete a standard test at the end of each module.

A certificate of completion of the COTC program will be issued to students who meet local attendance and performance criteria at the site offering the training.

Students will:

- Attend 95 percent of all classes;
- Actively participate in learning;
- Attain locally acceptable scores on standard tests;
- Demonstrate locally acceptable performance on scenario-driven applications; and
- Attain locally acceptable scores on instructor and peer evaluations.

Instructor Note:

Begin the module objectives and overview.

MODULE 1

MODULE 1

APPLICATION OF THE INCIDENT COMMAND SYSTEM (ICS)

MODULE 1:

APPLICATION OF THE INCIDENT COMMAND SYSTEM (ICS)

Terminal Objective

Upon completing the module, students will be able to determine an appropriate Incident Command System (ICS) organization for an emergency incident.

Enabling Objectives

Students will:

- Review ICS functions, elements, and responsibilities;
- Define command presence, assuming command, transferring command, and establishing a Command Post (CP);
- Develop a basic ICS organization for an emergency incident; and
- Develop a full ICS organization for a major emergency incident.

Outside Assignments

None required.

Requirements

Facility

Classroom with tables

Materials

- COTC Operations Instructor Guide
- COTC Operations Student Manual
- PowerPoint® slides

Equipment

- Computer
- LCD projector
- One portable screen or classroom equipped with screen
- Chalkboard/wipeboard
- Easel pads with markers

References

- Student Manual

Instructor Guidelines

This course is intended for a third level of management, the battalion chief or newly promoted chief officer, in a typical emergency services organization. The newly promoted chief officer will think in terms of strategy, as opposed to tactics, on an emergency scene. The officer will need a good, basic understanding of tactics as they play into strategic decisions, but will focus on strategic decisions. To this end, it is recommended that students complete Modules 1 through 3 (Application of the Incident Command System [ICS], Incident Command Decision-Making, and Incident Action Plan [IAP]/Planning) before enrolling in any of the simulation exercise modules.

The simulations in this course are designed to provide opportunities for the newly promoted chief officers to develop their skills as incident commanders at emergencies that require more resources than “normal” first-alarm, initial attacks in their communities. This simulation methodology allows the students to transition from the tactical perspective of a company officer to a strategic perspective of a chief officer who makes command level decisions based on strategic objectives required of an incident commander at a major target hazard incident.

The officers attending this course should be familiar with the target hazards found in their communities. Some of these hazards are significant and are known as target hazards. Target hazards are defined as incidents that:

- Overload fire equipment and personnel resources;
- Involve atypical hazards;
- Produce a significant negative impact on the community;
- Require technical advice for effective strategy development; and
- May initiate multi-agency involvement.

The most serious of these target hazards, for example, a major commercial or high-rise fire, can quickly stretch the capacity of the fire department's resources.

The students should rotate through the various command and general staff positions to see the responsibilities of the incident commander as individual components. The instructor would normally divide the class into groups of six to eight students, assigning each student a position on the Incident Management Team (IMT). An alternate method is to assign more experienced students to the IMT positions and assign other students in deputy or assistant roles, which allows them to shadow their more experienced peers. As the course develops, the instructor may begin to assign additional responsibilities to the command and general staff, including the development of the Incident Action Plan (IAP). The ICS forms needed to complete the IAP are included in the appendix of each simulation exercise module.

The instructor should carefully read the instructor guide and the student manual and become familiar with the content before presenting the course.

This module reviews and delineates the functional elements of the ICS and the application of these functional elements to expanded emergencies.

The ICS is a tool for managing emergency incidents. Effective management of a major incident requires the ability to develop ICS organizations to meet the needs of the incident.

Methodology

This module uses lecture, discussion, and activities to review and delineate the functional elements of the ICS organization and the application of these functional elements to expanded emergency operations.

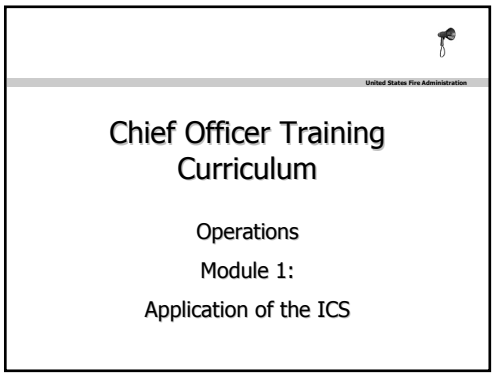
Outline

I.	Objectives and Overview	10 minutes
II.	History of the Incident Command System	5 minutes
III.	ICS Organization at Expanded Incidents	15 minutes
IV.	ICS Command and General Staff Positions	50 minutes
V.	The Operations Section	80 minutes
VI.	Activity 1.1: Application of the Basic ICS Functions	65 minutes
VII.	The Operations Section (continued)	45 minutes
VIII.	The Planning Section	20 minutes
IX.	The Logistics Section	20 minutes
X.	The Finance/Administration Section	20 minutes
XI.	Activity 1.2: Using the ICS at a Major Incident	90 minutes
XII.	Incident Management	50 minutes
XIII.	Module Summary	10 minutes
		Total: 480 minutes

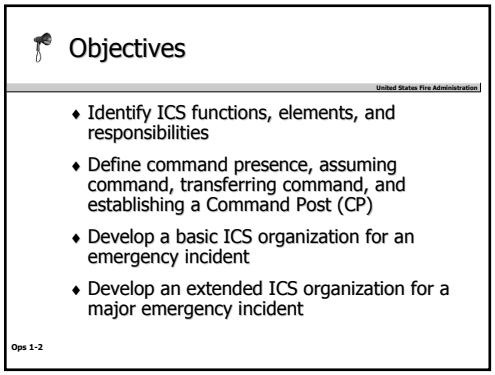
NFPA 1021 Standards Cross-Reference Matrix

3-6, 3-7, 4-6, 4-7

Slide 1-1: Module 1, Application of the ICS



Slide 1-2: Objectives



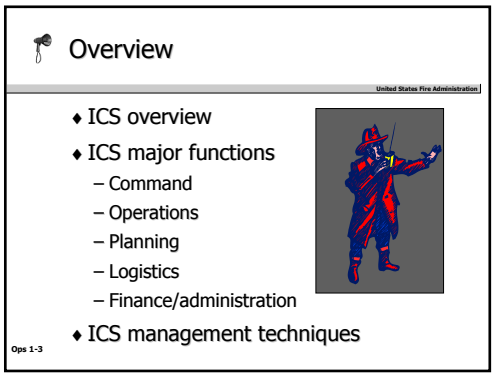
I. Objectives and Overview (10 minutes)

A. Objectives

Having successfully completed this module, you will be able to:

- Identify Incident Command System (ICS) functions, elements, and responsibilities;
- Define command presence, assuming command, transferring command, and establishing a Command Post (CP);
- Develop a basic ICS organization for an emergency incident; and
- Develop an extended ICS organization for a major emergency incident.

Slide 1-3: Overview

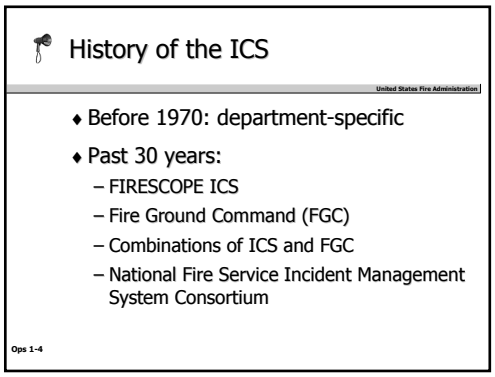


B. Overview

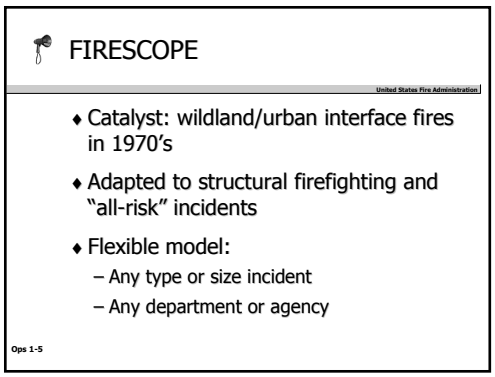
In this module, we will discuss the following topics:

- History of ICS;
- Organization at expanded incidents;
- Major functions and command staff;
- ICS major functions (expanded):
  - Command,
  - Operations section,
  - Planning section,
  - Logistics section, and
  - Finance/administration section.
- ICS management techniques:
  - Assuming command,
  - Transferring command, and
  - Establishing a CP.

Slide 1-4: History of the ICS



Slide 1-5: FIRESCOPE



II. History of the ICS (5 minutes)

Before the 1970's, each department had its own method for commanding incidents. Several formal systems have developed over the past 30 years:

- FIRESCOPE ICS,
- Fire Ground Command system (FGC),
- Combinations of ICS and FGC, and
- National Fire Service Incident Management System Consortium.

A. FIRESCOPE ICS

- Catalyst: serious wildland/urban fires in Southern California in early 1970's.
- FIRESCOPE (**FI**re **RES**ources of **C**alifornia **O**rganized for **P**otential **E**mergencies) organization was formed by seven fire agencies.
  - ∗ Initial funding by grant from the Federal government and
  - ∗ Focused on solutions to a variety of problems associated with large and complex emergency incidents during major wildland fires:

– Command procedures,

– Resource management,

– Terminology, and

– Communications.

* Success of the ICS at wildland fires led to its application to structural firefighting and eventually to its current acceptance as an "all-risk/all-hazard" system:

  – Can be used at any type or size of emergency incident and

  – Can be used by any type or size of department or agency.

* National Fire Academy (NFA) "model ICS" based on FIRESCOPE ICS.

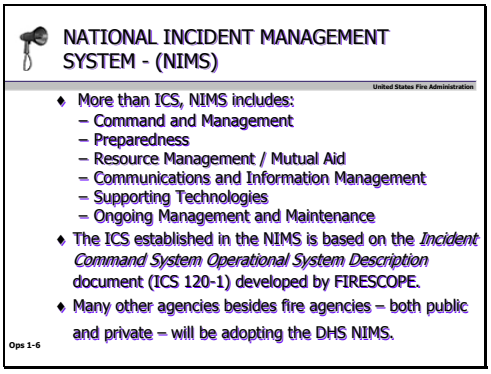
* NFA has adopted the DHS NIMS ICS model.

- **NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS)**

  * Promulgated by DHS

  * NIMS incorporates input from Federal, State, regional, and local response agencies.

Slide 1-6: NATIONAL INCIDENT MANAGEMENT SYSTEM



* More than ICS, NIMS includes:
  - Command and Management
    - ICS
    - Multi-agency Coordinating System
    - Public Information Systems
  - Preparedness
    - Planning – training – exercises
    - Personnel qualification and certification standards
    - Equipment acquisition and certification standards
    - Publication management processes and activities
  - Resource Management/ Mutual Aid
    - Standardized requirements for processes to describe, inventory, mobilize, dispatch, track, and recover resources over the life cycle of an incident.

- Includes resource typing and mutual-aid concerns

– Communications and Information Management

- The 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 impacted by the incident, and those contributing resources to the incident management effort

– Helps ensure that crisis decision-making is better informed

– Supporting Technologies

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

- Supporting inter-operability and compatibility

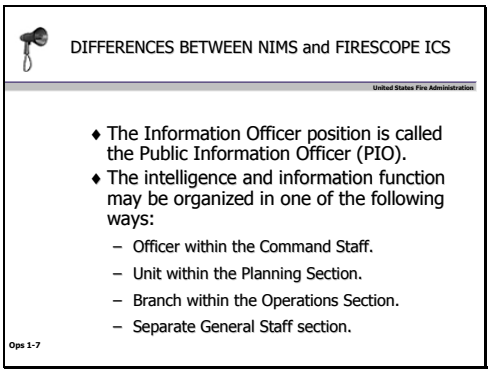
– Ongoing Management and Maintenance

- 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.

- The ICS established in the NIMS is not a new emergency incident management system. It is based on the *Incident Command System Operational System Description* document (ICS 120-1) developed by FIRESCOPE.

Slide 1-7: DIFFERENCES BETWEEN NIMS AND FIRESCOPE ICS



- Many other agencies besides fire agencies – both public and private – will be adopting the National Incident Management System (NIMS) as required by the Department of Homeland Security (DHS).

- **Differences between NIMS and FIRESCOPE ICS**

  * The Information Officer position is called the Public Information Officer (PIO).

  * The intelligence and information function may be organized in one of the following ways:

    – Officer within the Command Staff.

    – Unit within the Planning Section.

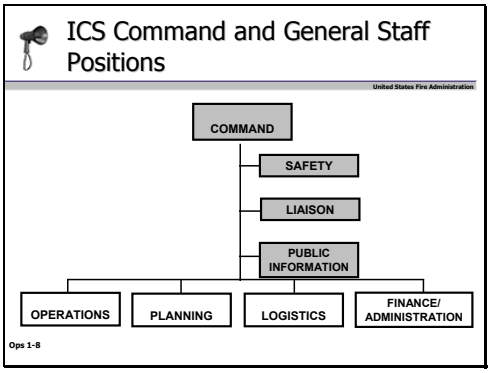
    – Branch within the Operations Section.

    – Separate General Staff Section.

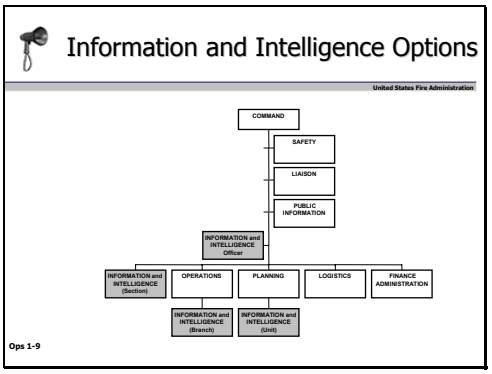
- **Public Information Officer**

  * The Public Information Officer – new title for Information Officer as part of the Command Staff.

Slide 1-8: ICS COMMAND AND GENERAL STAFF POSITIONS



Slide 1-9: INFORMATION AND INTELLIGENCE OPTIONS



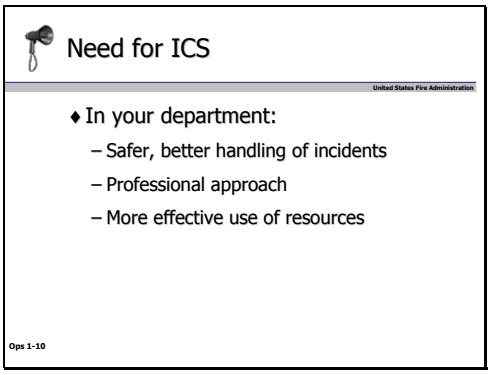
- **Information and Intelligence Management within NIMS**
- **As an Officer in the Command Staff**
  - This option may be most appropriate in incidents with little need for tactical or classified intelligence and in which incident-related intelligence is provided by supporting Agency Representatives, through real-time reach-back capabilities.
- **As a 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.

- **As a 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 Unified Command.
- **As a General Staff Section**
  - This option may be most appropriate when an incident is heavily influenced 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.
- **Information and Intelligence Options in the NIMS - Summary**
  - Regardless of how it is organized, the information and intelligence function also is responsible for developing, conducting, and managing information-related security plans and operations as directed by the IC.

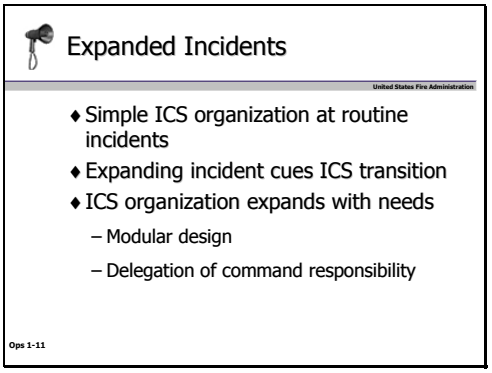
* These can include information security and operational security activities, as well as the complex task of ensuring that sensitive information of all types (e.g., classified information, sensitive law enforcement information, proprietary and personal information, or export-controlled information) is 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.

* The information and intelligence 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.

Slide 1-10: Need for ICS



Slide 1-11: Expanded Incidents



B. Need for ICS

- In your department, a common ICS:
  - Ensures incidents are handled more safely and more effectively;
  - Ensures a professional approach to managing emergency incidents; and
  - Facilitates use of resources from other agencies.

III. ICS Organization at Expanded Incidents (15 minutes)

A. ICS organization at routine incidents

ICS is usually simple (90 percent of the time):

- Relatively few problems,
- Limited number of resources, and
- Normally the Incident Commander (IC) can handle all management functions.

B. Expanding incident

- Expanding incident cues ICS transitions:
  - More problems to deal with,

* Increased number of resources, and

* Additional management concerns.

- The IC may not be able to handle everything.

- Basic ICS organization must expand with the needs of the incident.

- As conditions or needs change, so must the organizational structure.

- Modular design of ICS allows organization to be structured for specific incidents.

C. Overload of the IC

Attempting to deal with all management functions may overload the IC.

- Problems that may result from overload:

  * Important details may be overlooked and

  * Safety may be compromised.

- Functional responsibilities should be delegated when indicated.

- ICS provides a systems approach to effective incident organization.

Instructor Notes:

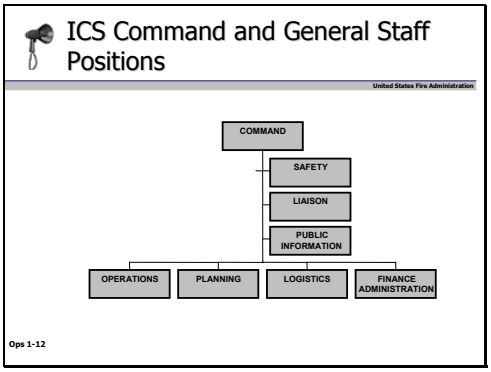
Advise students that ICS 420-1, *Field Operations Guide*, includes position descriptions.

D. Ability to structure appropriate organization

The ability to structure appropriate organization requires that the IC:

- Understand the functional positions and
- Understand the roles and responsibilities of each functional position.

Slide 1-12: ICS Command and General Staff Positions



IV. ICS Command and General Staff Positions (50 minutes)

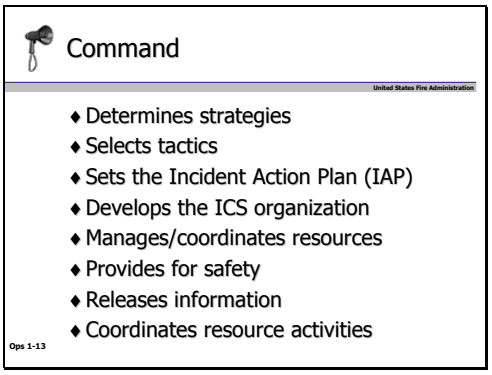
Instructor Notes:

This section is a review of the ICS Self-Study prerequisite course.

A. Incident Commander (IC)

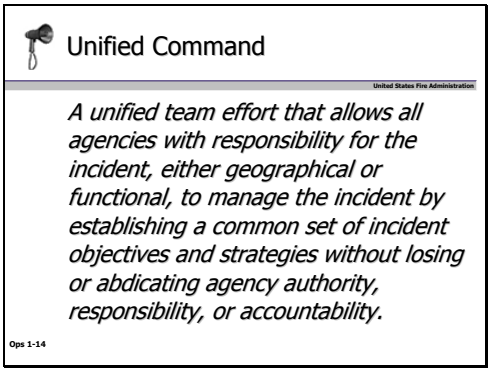
- The IC is responsible for the overall incident management.

Slide 1-13: Command



- Responsibilities of command:
  - Determines strategy,
  - Selects tactics,
  - Sets the Incident Action Plan (IAP),
  - Develops appropriate ICS organization,
  - Manages resources,
  - Provides for responder safety,
  - Releases information, and
  - Coordinates resource activities,

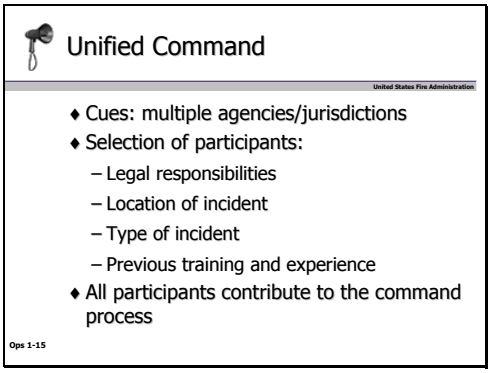
Slide 1-14: Unified Command Definition



B. Unified Command

Definition: In ICS, *unified command* is a team effort that allows all agencies with responsibility for the incident, either geographical or functional, to manage an the incident by establishing a common set of incident objectives and strategies without losing or abdicating agency authority, responsibility, or accountability.

Slide 1-15: Unified Command



- Cues as to the need for unified command:
  - More than one agency is responsible for decision-making within single-jurisdiction incident and
  - Incidents cross jurisdictional boundaries.
- Each jurisdiction should appoint a lead agency for each type of incident.
- All agencies with geographical, functional, or legal responsibility contribute to the command process:
  - Determining overall incident objectives,
  - Selecting strategies,
  - Planning jointly for tactical activities, and
  - Ensuring maximum use of all assigned resources.
- Selection of participants to work within unified command structure:
  - Legal responsibilities;
  - Location of incident:
    - Political jurisdictions involved,

– One key official from each jurisdiction,

– Representatives of different departments within a single jurisdiction, and

– Operations function usually oes to the agency with greatest jurisdictional involvement;

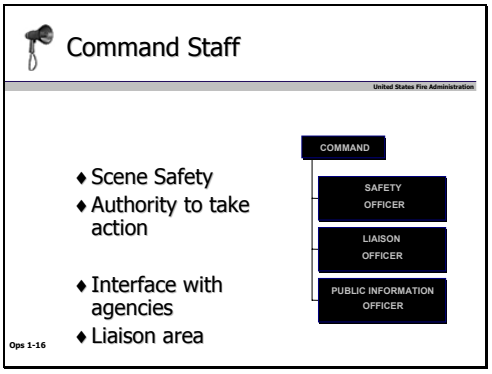
* Type of incident:

  – Functional agencies required and

  – Jurisdictions affected; and

* Previous training and experience.

Slide 1-16: Command Staff



C. Command staff

- Safety officer:

  * The IC is responsible for incident scene safety.

  * When to staff the safety officer position:

    – Normally, when the IC cannot devote sufficient time to safety analysis or

    – As numbers of resources and incident complexity increase.

- Prerequisite knowledge:
  - Fire behavior,
  - Building construction,
  - Strategy and tactics, and
  - Department safety rules.
- The safety officer has authority to take immediate action to "alter, terminate, or suspend an operation" in order to remove personnel from imminent danger.

  The safety officer must notify the IC if he or she takes such action.

- Liaison officer:
  - Interacts with many assisting agencies, acting as a buffer between the IC and the other responding agencies:
    - American Red Cross,
    - Law enforcement, and
    - Public works.
  - When to staff the liaison officer position:
    - Normally, when command cannot devote the time to talk to outside agency representatives or

  - As numbers of resources and incident complexity increase.

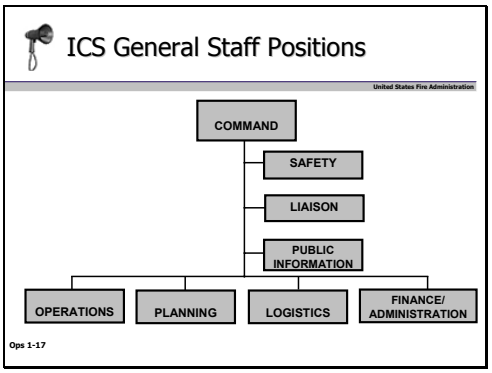
* Who belongs in liaison?
  - Agencies that provide assistance but have no legal responsibility for the outcome and
  - Agencies that provide significant human resources to incident operations.
* Liaison establishes a liaison area near, but not at, the CP.

- Public Information officer:
  * Manages information and media releases and acts as a buffer between the IC and the media:
    - Must obtain approval for release from command,
    - Must update command on media needs, and
    - Must be kept informed by command.
  * When to staff the information officer position:
    - Normally, when command cannot devote the time to talk to the media or

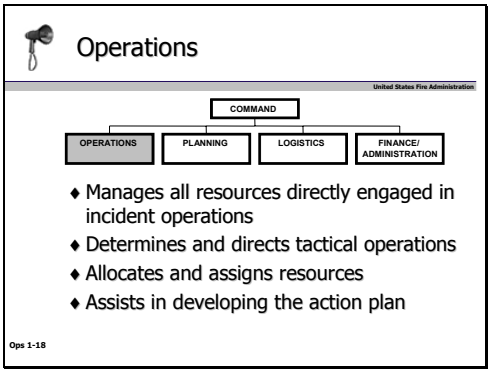
– As numbers of resources and incident complexity increase.

* The information officer establishes an information area away from the CP.

Slide 1-17: General Staff Positions



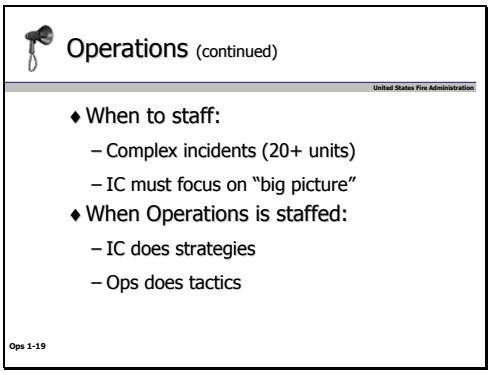
Slide 1-18: Operations



D. Operations

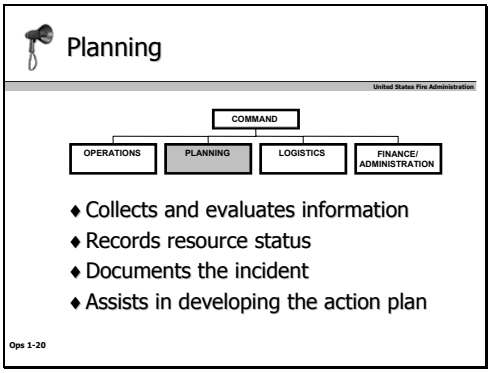
- The operations section chief reports directly to the IC.
- Responsibilities:
  * Manages all resources directly engaged in incident operations;
  * Determines and directs tactical operations;
  * Allocates and assigns resources to accomplish control of the incident; and
  * Participates in the development of the action plan.

Slide 1-19: Operations (continued)



- When to staff the operations section:
  - On complex incidents involving, or projected to involve, more than 20 single resources/units; or
  - When IC must focus on the "big picture" and avoid getting involved in the details of tactical operations.
- When command staffs the operations section chief position, the IC focuses on strategy, and the operations chief focuses on tactics. The IC no longer talks to the operational companies.

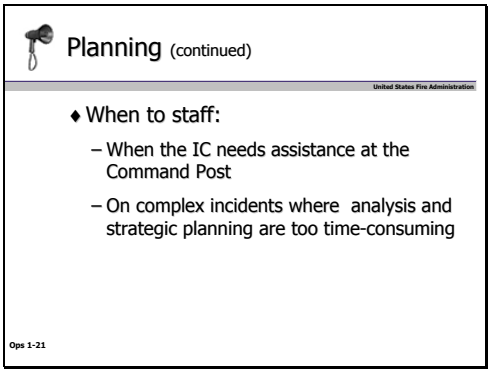
Slide 1-20: Planning



E. Planning

- The planning section chief reports directly to the IC.
- Responsibilities:
  - Collects, evaluates, and uses information to:
    - Understand the current situation,
    - Predict probable course of events, and
    - Prepare optional strategies/tactics;

Slide 1-21: Planning (continued)



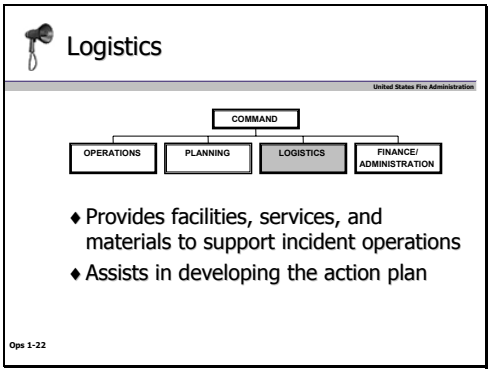
- ∗ Records resource status;
- ∗ Documents the incident; and
- ∗ Participates in the development of the action plan.

- When to staff the planning section:
  - ∗ When the IC needs assistance at the CP to determine the appropriate strategy and tactics:
    - – Can be the result of having little prior experience with the incident type and
    - – Two heads may be better than one; or
  - ∗ On complex incidents where information analysis and strategic options cannot be accomplished by one person in a timely manner.

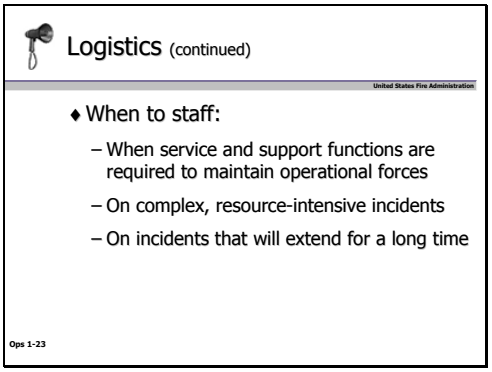
Instructor Notes:

Ask the student if they have SOGs for staffing the planning section. Ask the class to provide examples of when to staff the planning section.

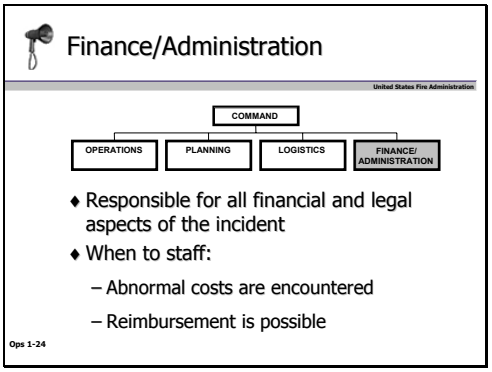
Slide 1-22: Logistics



Slide 1-23: Logistics (continued)



Slide 1-24: Finance/Administration



F. Logistics

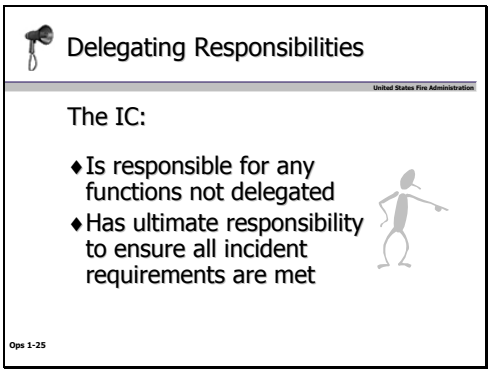
- The logistics section chief reports directly to command.
- Responsibilities:
  - Provides facilities, services, and materials to support incident activities; and
  - Participates in the development of the action plan.
- When to staff the logistics section:
  - When service and support functions are needed to maintain operational forces;
  - On complex, resource-intensive incidents; or
  - On incidents that will extend for an unusual length of time.

G. Finance/administration

- The finance/administration section chief reports directly to the IC.
- Responsibilities:
  - Financial and cost analysis and
  - Legal risks of the incident.

- When to staff the finance/administration section:
  - On incidents where unusual costs will be encountered;
  - On incidents where reimbursement is a possibility:
    - Federally declared disasters and
    - Haz mat incidents—carrier's, shipper's, and manufacturer's insurance reimbursement.

Slide 1-25: Delegating Responsibilities



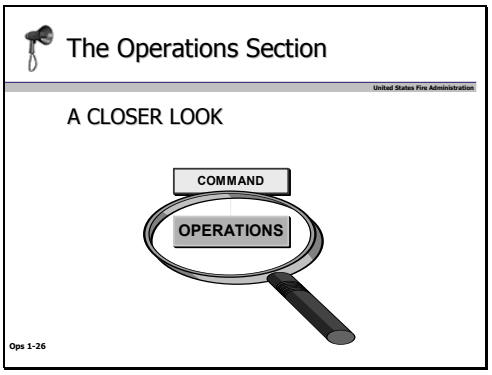
H. If functions are not delegated:

- The IC is responsible for any functions not delegated.
- The IC has ultimate responsibility for ensuring that all incident requirements are met.

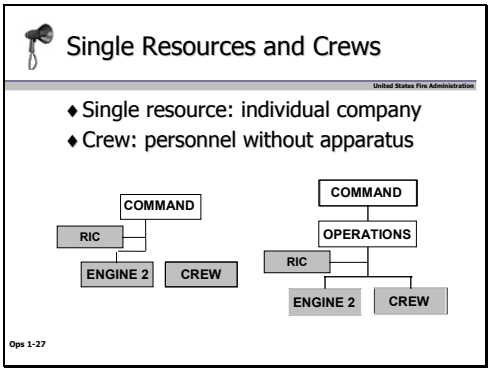
Instructor Notes:

Explain to students that the next section of the module provides **expanded** information on each of the four major ICS functions.

Slide 1-26: The Operations Section



Slide 1-27: Single Resources and Crews



V. The Operations Section (80 minutes)

A. Terminology

Instructor Notes:

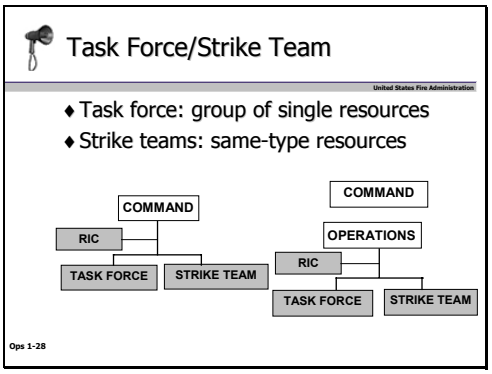
Tell the students that the terms *engine* and *truck* are used in this module to represent personnel who do specific tasks at the scene of an incident. Someone needs to perform these tasks even if a department does not have truck companies.

- A **single resource** is an individual company (for example, engine, truck, or rescue squad) or crew.
  - Rapid Intervention Crew (RIC):
    - Designated to stand by in a state of readiness to perform a rescue of firefighters;
    - Initial stage of incident may be a crew with as few as two firefighters;
    - As complexity of incident grows, the crew may expand to a company or multiple companies operating under a group supervisor; and

– Reports to the IC or, if operations is established, the operations section chief.

- **Crews**
  - ∗ Definition:
    - – Personnel without apparatus (for example, arriving in Privately Owned Vehicles [POVs] or off-duty personnel) or
    - – A specified number of personnel assembled for a task with a leader.
  - ∗ Crew size should conform to normal span-of-control guidelines.
  - ∗ Crews are designated by name or function.
  - ∗ Crews are used as any other single resource.

Slide 1-28: Task Force/Strike Team



- **Task force**
  - ∗ Definition: a group of resources, with common communications and a leader, that may be pre-established and sent to an incident or formed at an incident;
  - ∗ Operate under the direct supervision of a task force leader;

- Common communications; and
- Number of individual resources should not exceed the recommended span-of-control (five) but may be fewer.

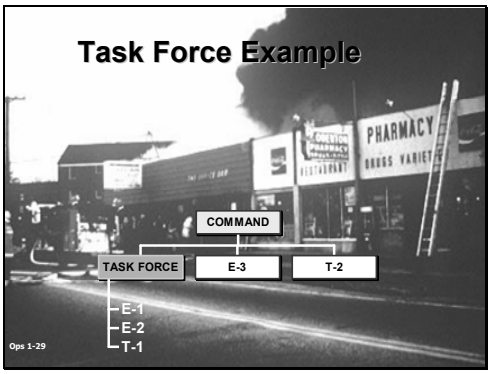
- **Engine Strike team**
  - Definition: specified combinations of the same kind and type of resources with common communications and a leader;
  - Concept frequently used at wildland fires;
  - Operate under the direct supervision of a strike team leader;
  - Common communications;
  - Typically comprises engine companies, but can be any type of resource; and
  - Fewer than five same-type units is a task force (for example, three engines).

Instructor Notes:

In the following two examples, briefly describe and discuss the purpose and advantages of establishing a task force or strike team at the incidents depicted in the slides.

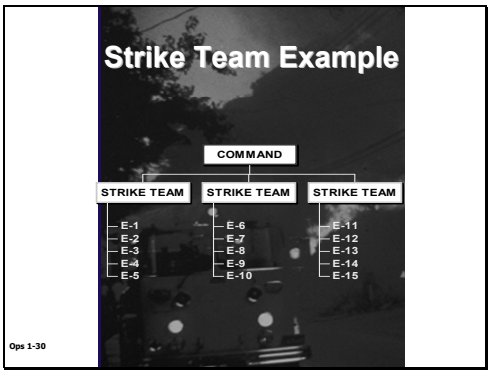
Tell students the ICS charts shown are only one way of managing the incident scene. The ICS organization is flexible; students should apply their own resources and tactics. The ICS structures shown are accurate, but are not the only way to manage an incident scene.

Slide 1-29: Task Force Example



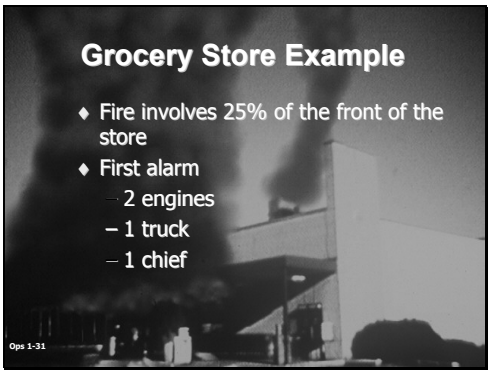
- Task force example

Slide 1-30: Strike Team Example

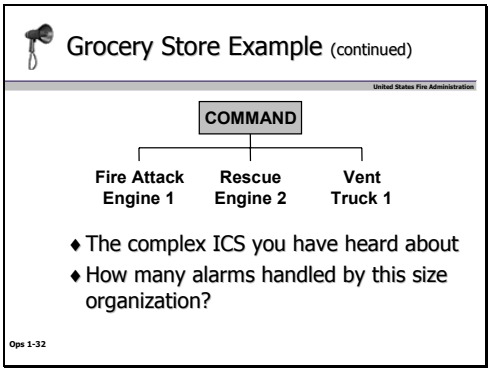


- Strike team example

Slide 1-31: Grocery Store Example



Slide 1-32: Grocery Store Example (continued)



B. Example of a structure fire—grocery store

- Fire involves 25 percent of the structure.
- First alarm is two engines, one truck, and one chief.
- This is the complex ICS you have heard about.

Ask the questions:

Why is this an example of ICS?

Suggested response:

When the person in charge is called, that person is not Chief 1, Car 101, or anything other than Command or IC. When you assume a position in the ICS, your radio designator becomes that functional title.

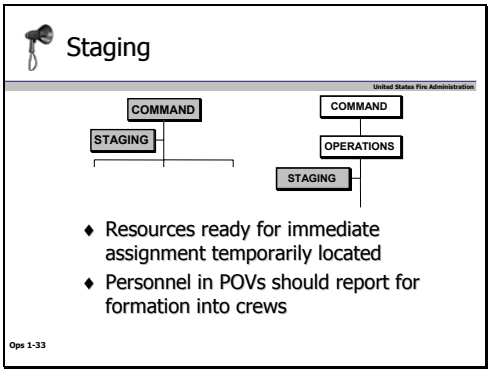
Ask the question:

How many of your alarms can be handled by this organization?

Suggested response:

90 to 95 percent

Slide 1-33: Staging



C. Staging (staging area manager)

- The staging area manager is responsible for control of an area where resources ready for immediate assignment are staged.
- In incidents where personnel report in POVs for formation into crews, another option is the CP.
- Two levels of staging are applicable to structural firefighting. In the pure ICS, there is usually only a single level of staging.

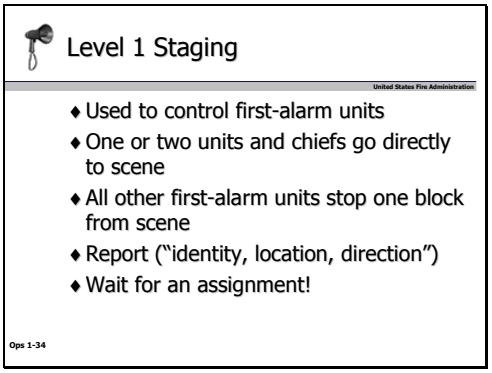
Ask students to consider the following situations:

- You have responded to a small kitchen fire—a pot of burned food on the stove. The dispatch included three to six pieces of apparatus, which are all parked in front of the dwelling. Personnel from those units are trekking through the house, over the nice white carpet, to see the burned food. What a mess!
- Your department has the problem of companies assigning themselves upon arrival—freelancing.
- You are the IC and all the units responding to this working fire are calling you for assignments. You are not ready to make assignments, but they keep calling every 20 seconds

until you give them an assignment or they assign themselves.

Fire officers can eliminate all of these problems by establishing a Standard Operating Guideline (SOG) for Level 1 staging.

Slide 1-34: Level 1 Staging

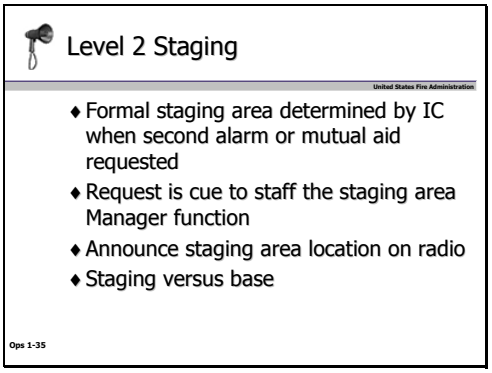


- **Level 1 staging**
  - Level 1 staging is used to control the first-alarm or initially dispatched units.
  - Assignments and positioning:
    - The first one or two units from the first alarm go directly to the scene.
    - Chief may go directly to the scene.
    - All other first-alarm units are required to stop one block from the scene, in the direction of travel.
    - Each unit reports, "ID, location, compass direction" (for example, "Engine 3, one block west").
    - Wait for an assignment!
    - At a working fire, if not assigned within 2 minutes, units repeat the message.

– After 2 additional minutes, the officer should walk the block to the CP and ask for an assignment.

– Units cannot go to the scene without an order from the IC or operations.

Slide 1-35: Level 2 Staging



- **Level 2 staging**
  - ∗ A formal staging area is determined by the IC when a second alarm or mutual aid is requested.
  - ∗ This is the cue to staff the staging area manager function.
  - ∗ Announce the staging area location on the radio.

Ask the question:

To whom does staging report if there is no operations chief?

Suggested response:

Tell students that staging should not be thought of as a place to park apparatus. Staging at a high-rise could be on the 12th floor.

- Staging versus base

Instructor Notes:

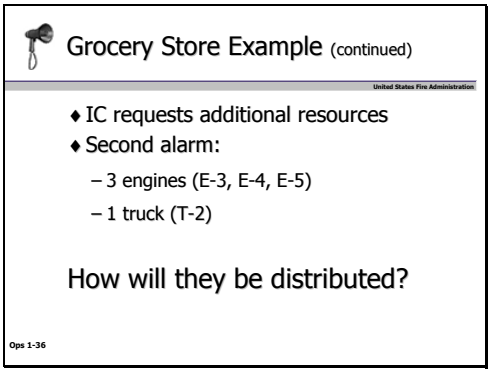
Briefly define *base* and its use with staging at wildland, haz mat, and high-rise incidents, noting the following points.

* Base is a marshaling area for incoming resources during large, complex incidents. At base, resources are organized and then sent to staging.

* Base can also be used to rehab personnel. A high school—with cafeteria, showers, and an auditorium—makes a good base.

* At high-rise incidents, base is located 200 feet or more from the high-rise (to be away from falling glass). All companies report to base and are sent to staging (two floors below the fire floor).

Slide 1-36: Grocery Store Example (continued)

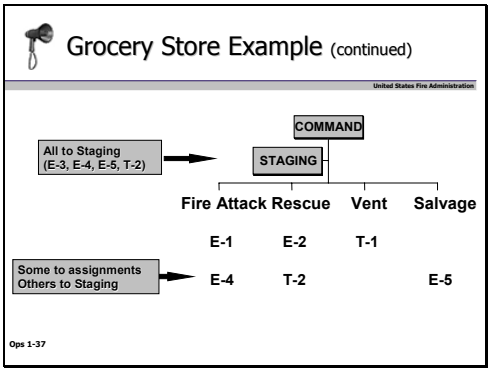


- Grocery store example:
  - ∗ Assume additional resources were requested: three engines, one truck.

Instructor Notes:

The initial response to most incidents, regardless of complexity, is limited. Response starts small even if the incident is large. The organization grows as resources arrive and are placed in service.

Slide 1-37: Grocery Store Example (continued)



Ask the question:

How will they be distributed?

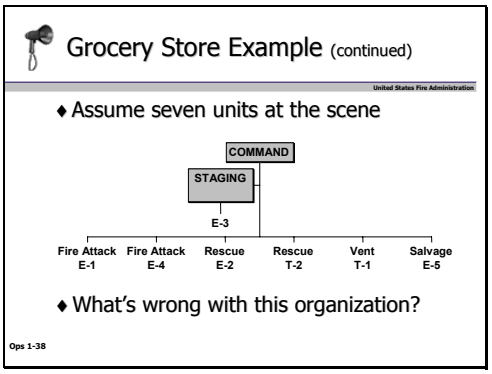
Facilitate a brief discussion of options.

Suggested responses:

- All units to staging,
- All units to fire, and
- Some units to staging and some to fire.

  - ∗ Assume a total of seven units at the scene organized according to the ICS chart shown.

Slide 1-38: Grocery Store Example (continued)



Ask the question:

What is wrong with the structure depicted in the ICS chart on the slide?

Suggested response:

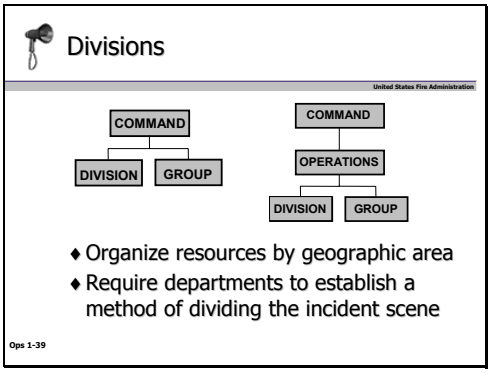
Span-of-control exceeds five.

Ask the question:

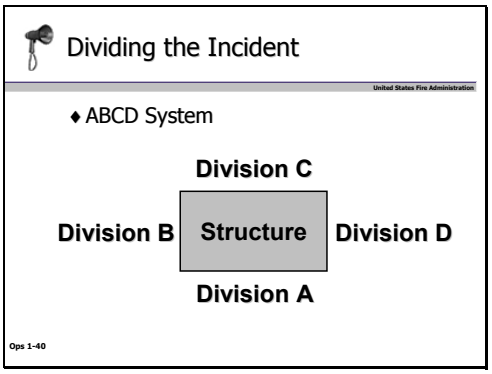
What can be done about it?

Suggested responses are presented below.

Slide 1-39: Divisions



Slide 1-40: Dividing the Incident



D. Division (division supervisor)

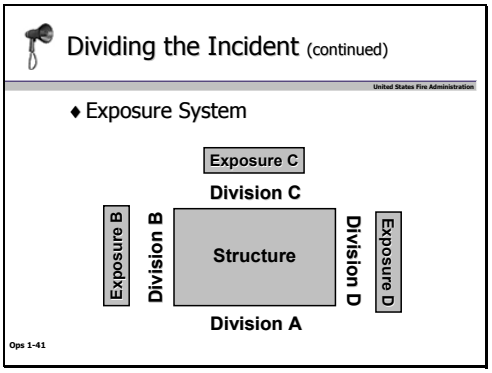
The division supervisor directs resources within a **geographic** area of responsibility.

- To use the geographic terminology effectively, departments must have a method of dividing the incident scene.

- Examples of geographic methods:

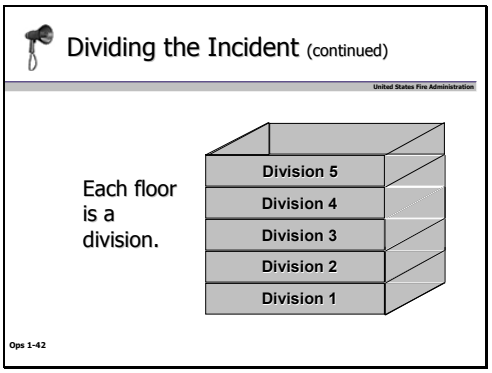
  * Around the outside of a structure,

Slide 1-41: Dividing the Incident (continued)



* Exposure buildings or areas, and

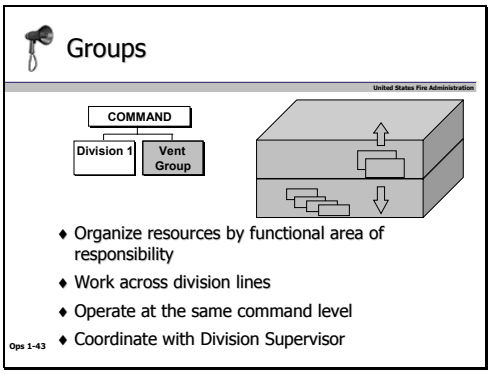
Slide 1-42: Dividing the Incident (continued)



* Floors of a building.

- The division supervisor is responsible for considering all problems and solutions in that geographic area.

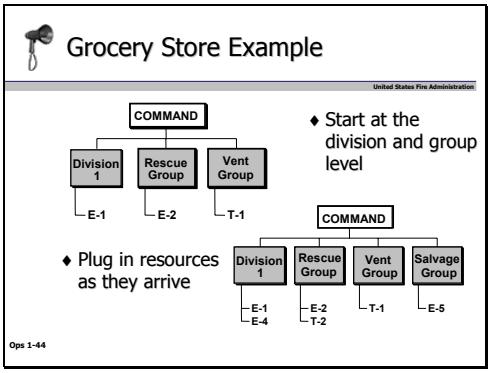
Slide 1-43: Groups



E. Group (group supervisor)

- Directs resources within a **functional** area of responsibility (for example, vent group, salvage group, rescue group, medical group, water supply group).
- Groups work across division lines, relieving divisions of specific functional responsibilities.
- Divisions and groups operate on the same organizational (power) level.
- Group supervisors coordinate with division supervisors **before** taking any action that can affect division personnel.

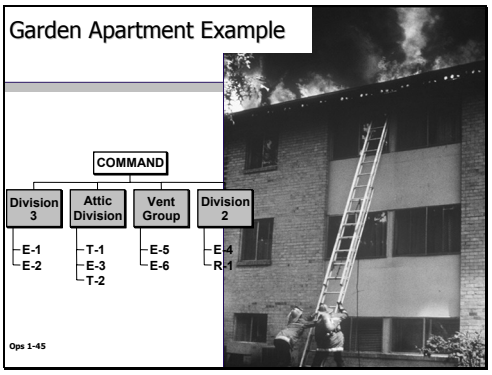
Slide 1-44: Grocery Store Example



F. Example: previous grocery store fire

- The following is a more effective method of implementing the ICS with the first alarm, especially if your department responds to fewer than 500 fire calls per year.
- At initial arrival and assignment of the first alarm units, begin at the division and group level.
- Then simply assign additional resources as they arrive.

Slide 1-45: Garden Apartment Example



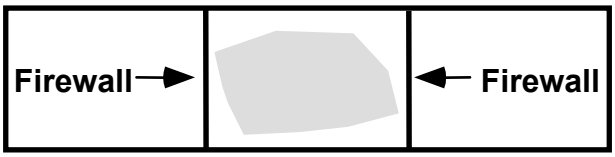
G. Example: A garden apartment fire

- Six engines, two trucks, and a rescue unit have arrived:
  - Approximately 34 personnel in 9 crews;
  - Engines—four people; trucks—four people; rescue—two people; and
  - Other units responding.
- The attic and third floor are heavily involved (about 50 percent).

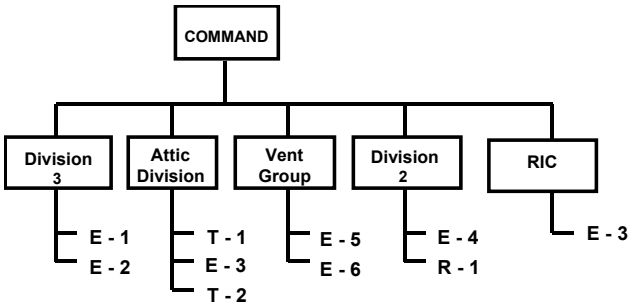
Instructor Notes:

Walk students through this scenario, resource by resource, to show how the organization builds as resources arrive and are put to work.

Three-Story Garden Apartment



Center Section 50- to 75-percent involved
3rd floor and attic



- **E-1 arrives:**

  * The officer gives a Brief Initial Report (BIR) and directs the E-1 crew to attack the fire with a 1¾ -inch hose line from the third floor and do primary search on that floor.

  * The officer assumes command.

  * Command requests a second and third alarm.

- **E-2 arrives:**

  * Command directs the officer of E-2 to assume Division 3.

  * Command assigns E-1 crew to Division 3.

- **Truck 1 arrives:**

  * Command directs T-1 officer to assume attic division and stop the fire from spreading past the firewalls on Sides B and D.

* Attic division requests one additional engine and one additional truck.

- **Chief 1 arrives:**

  * Chief 1 assumes command.

  * Chief retains the officer of E-1 to assist at the CP.

- **E-3 arrives**—Command assigns E-3 to RIC.

- **E-4 arrives**—Command directs E-4 to report to attic division.

- **T-2 arrives**—Command directs T-2 to report to attic division.

- **E-5 arrives:**

  * Command directs E-5 to assume Division 2 and conduct primary search and check for downward extension.

  * Division 2 requests one additional company.

- **E-6 arrives:**

  * Command directs E-6 officer to assume vent group and perform horizontal ventilation where needed.

  * Vent group requests one additional company.

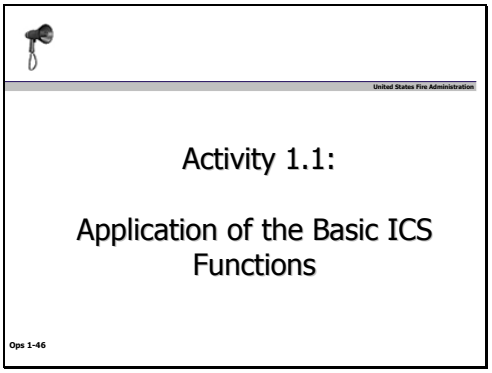
- **R-1 arrives**—Command directs R-1 to report to Division 2.

- **E-7 arrives**—Command directs E-7 to report to vent group.

Instructor Notes:

Note that this is a reasonable organization. The additional companies responding can be plugged into the existing organization or additional divisions and groups can be assigned as needed. If desired, ask students if other approaches for ongoing resources might work for this incident.

Slide 1-46: Activity 1.1: Application of the Basic ICS Functions



VI. Activity 1.1: Application the of Basic ICS Functions (65 minutes)

Instructor Notes:

The following pages contain the instructor and student activity pages. Refer students to Activity 1.1, Application of the Basic ICS Functions, in their student manuals.

Activity 1.1:
Application of the Basic ICS Functions

Time: 65 minutes

Purpose:

To provide students practice in using the components of the ICS structure to develop an appropriate organizational structure for an emergency incident.

Materials:

- Easel pads
- Markers
- Student Activity Worksheets (provided in the student manuals)

Directions:

1. Divide the class into four groups. Each group represents the IC who is responding to an emergency incident.

2. Refer students to the Student Activity Worksheet. Review the following scenarios and assign one to each group.

3. Instruct students to analyze the situation and develop an ICS organization appropriate for the situation. Students will use easel pads to develop their ICS charts.

4. Students may use only the ICS positions that have been discussed to this point:

    - Command;
    - Command staff (safety, information, and liaison);
    - Staging;
    - RIC;
    - Divisions/groups; and
    - Single resources, task forces, and strike teams.

    Instructor Notes:

    Students may use the resources typical for their areas.

5. Small groups select a spokesperson to present a brief explanation of the group's results to the class.

Allow 35 minutes for group work. During this time, circulate among the groups to provide direction and answer questions.

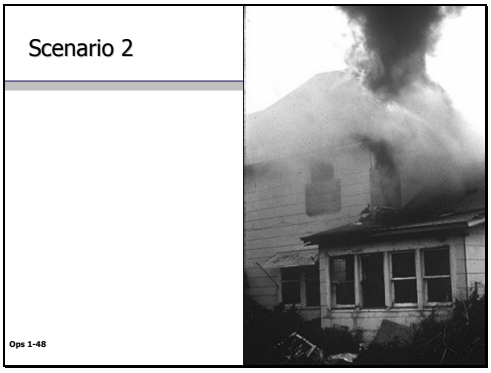
Slide 1-47: Scenario 1

Scenario 1:

A two-story ordinary construction building has fire showing on Side A on the second floor. The occupancy is a 35' x 75' rooming/boarding house with a center corridor configuration. The first floor lobby area is 35' x 18'. There is an open stair shaft behind the lobby. The second floor fire room directly above the lobby is the same size as the lobby. Both floors have heavy smoke conditions.

The building to the left (Exposure B) houses a credit corporation on the first floor and small offices on the second floor. (The common wall between the two buildings is directly behind the telephone pole on the outside.) The first floor is completely clear of smoke. Heavy smoke shows from the second floor window. There are no exposures on Sides C and D.

Slide 1-48: Scenario 2



Scenario 2:

A two-story occupied dwelling with an attic fire.

Activity 1.1:
Application of the Basic ICS Functions
Instructor Answer Key

Group presentations:

Allow group spokespersons about 5 minutes each to review their organizational structures. You should expect variations in the ICS organizational structures developed by different groups. This diversity reinforces the point that ICS is flexible in its modular approach to handling incidents.

Discuss and correct any under-management or over-management depicted on the organizational charts. Examples of under-management include organizations that exceed a reasonable span-of-control by failing to activate enough ICS elements or by failing to have critical functions in place. Over-management might be indicated by activating elements that are not required for the incident, such as operations, logistics, or finance.

Consider the following factors when evaluating the groups' ICS organization charts:

- Proper terminology;
- Proper span-of-control;
- Proper protocol;
- "Normal" usage: no task forces, no strike teams, and no branches; and
- Placing all functions in boxes.

Ask the question:

Was it worthwhile to develop formal written ICS organization charts for these incidents? Why or why not?

Summarize by discussing the benefits of this scene-management tool, stressing the following factors:

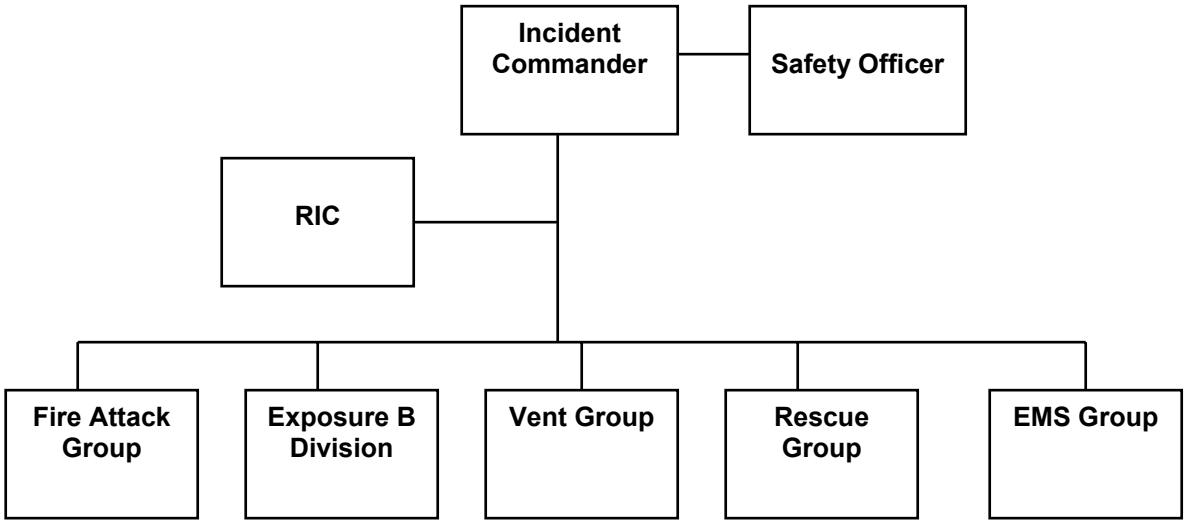
- Logical organization of resources according to needs;
- Clear lines of authority and communication;
- Flexibility for different incidents and strategies; and
- Ease of use.

Sample ICS Organization

Application of Basic ICS Functions

Instructor Note:

Emphasize the use of a RIC team: 2-in, 2-out.



Activity 1.1:
Application of the Basic ICS Functions
Student Activity Worksheet

Time: 65 minutes

Purpose:

To provide you practice in using the components of the ICS structure to develop an appropriate organizational structure for an emergency incident.

Directions:

1. Work in small groups to review the scenario assigned. You will have approximately 35 minutes for group work.

2. Analyze the situation presented in your assigned scenario and develop an ICS organization appropriate for the situation and the resources involved.

3. Prepare an ICS organizational chart on an easel pad. Use only the ICS positions that have been discussed to this point:

    - Command;
    - Command staff (safety, information, and liaison);
    - Staging;
    - RIC;
    - Divisions/groups; and
    - Single resources, task forces, and strike teams. (You may use the resources typical for your area.)

4. Select a spokesperson to present your group's results and a brief explanation to the class.

Scenario 1:

A two-story ordinary construction building has fire showing on Side A on the second floor. The occupancy is a 35' x 75' rooming/boarding house with a center corridor

configuration. The first floor lobby area is 35’ x 18’. There is an open stair shaft behind the lobby. The second floor fire room directly above the lobby is the same size as the lobby. Both floors have heavy smoke conditions.

The building to the left (Exposure B) houses a credit corporation on the first floor and small offices on the second floor. (The common wall between the two buildings is directly behind the telephone pole on the outside.) The first floor is completely clear of smoke. Heavy smoke shows from the second floor window. There are no exposures on Sides C and D.

Scenario 2:

A two-story occupied dwelling with an attic fire.

Notes:

Activity 1.1:
Application of the Basic ICS Functions
Student Assessment Sheet

Group presentations:

You will notice variations in the ICS organizational structures developed by different groups. This diversity reinforces the point that ICS is flexible in its modular approach to handling incidents.

However, you should correct any under-management or over-management depicted on your organizational chart. Examples of under-management include organizations that exceed a reasonable span-of-control by failing to activate enough ICS elements or by failing to have critical functions in place. Over-management might be indicated by activating elements that are not required for the incident, such as operations, logistics, or finance.

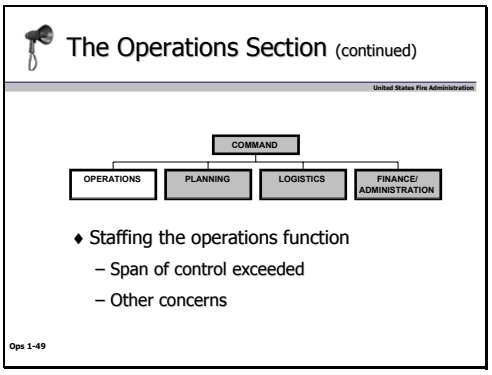
Consider the following factors when developing your ICS organization chart:

- Proper terminology;
- Proper span-of-control;
- Proper protocol;
- "Normal" usage: no task forces, no strike teams, and no branches; and
- Placing all functions in boxes.

The benefits of this scene-management tool include:

- Logical organization of resources according to needs;
- Clear lines of authority and communication;
- Flexibility for different incidents and strategies; and
- Ease of use.

Slide 1-49: The Operations Section (continued)



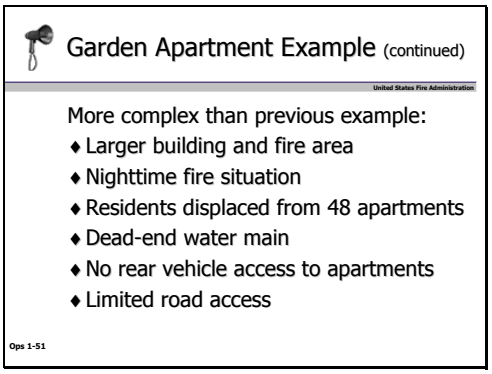
Slide 1-50: Garden Apartment Example

VII. The Operations Section (continued) (45 minutes)

A. Staffing the operations section chief function

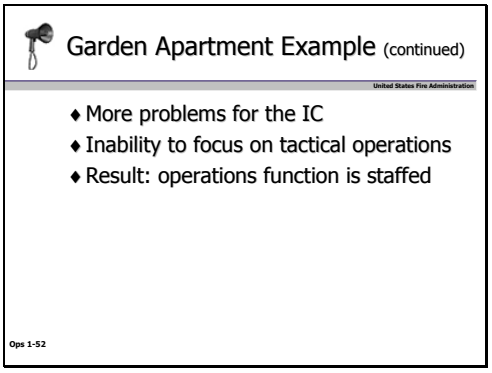
- When to staff:
  - When the IC's span-of-control is exceeded or
  - When the IC, because of other concerns, cannot focus full attention on tactical operations.

Slide 1-51: Garden Apartment Example (continued)



- Example—four-story garden apartment:
  - ∗ Compared to the previous example, this incident is more complex:
    - – Larger building and fire area,
    - – Nighttime fire situation,
    - – Residents displaced from 48 apartments,
    - – Dead-end water main,
    - – No vehicle access to rear of apartments, and
    - – Limited road access to the apartment complex.
  - ∗ More problems demand the IC's attention.

Slide 1-52: Garden Apartment Example (continued)



Ask the question:

What problems do you expect?

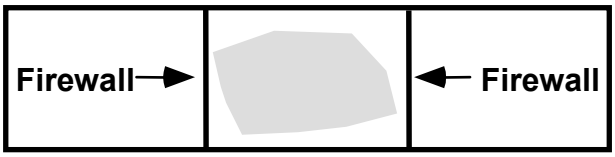
Suggested response:

Be sure to make the following points:

- Planning,
- Relocation of and care for displaced residents,
- Liaison with other agencies,
- Initial water-supply problems, and
- Logistics for fire and EMS units.

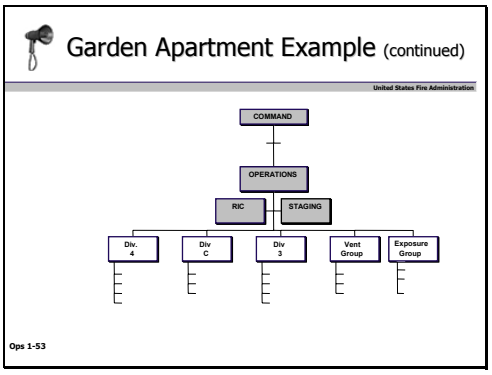
* The IC could not focus attention on the tactical operations, so he or she chose to staff the operations chief function.

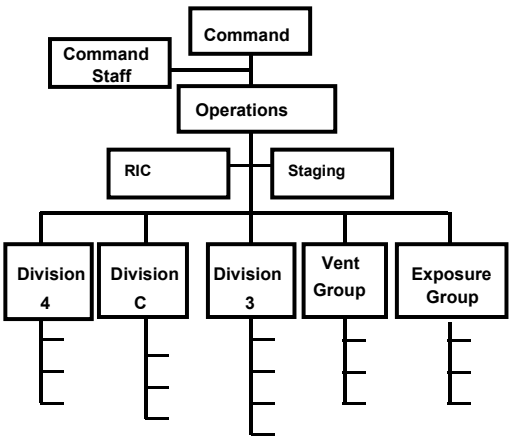
Four-Story Garden Apartment



Center Section 50- to 75-percent involved
4th floor and attic

Slide 1-53: Garden Apartment Example (continued)



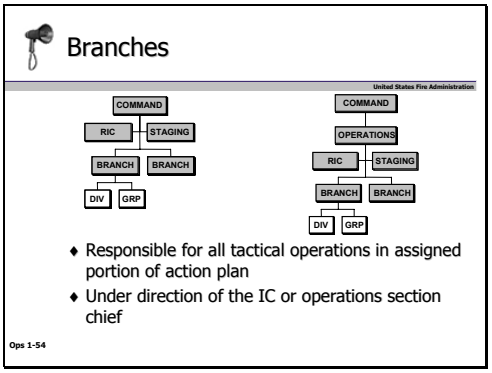


- **E-1 arrives:**
  - The officer gives a BIR and directs the E-1 crew to attack the fire with a 1¾ -inch hose line from the fourth floor and conduct a primary search on that floor.
  - The officer assumes command and requests a second and third alarm.
- **The IC initiates** Division 4, Division C, 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.

* Command will deal with the 48 families, the poor water supply, and access problems, while operations handles tactics.

- The IC could have assigned the E-1 officer to planning/logistics, and assigned another chief officer arriving on the scene to operations. However, the goal is to show how to establish the operations section.

Slide 1-54: Branches



B. Branches (branch directors)

Instructor Notes:

Tell students that for the four-story apartment fire, the operations chief now wants to add a Division 2 and a salvage group.

Ask the question:

What has happened to the organization?

Suggested response:

Reasonable span-of-control is exceeded.

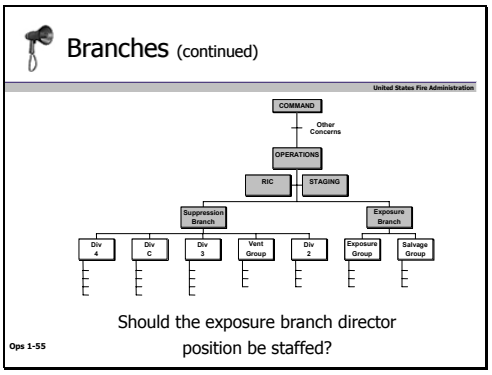
Ask the question:

Would the same thing occur if there were no operations?

Suggested response:

Yes, command would have too many divisions and groups reporting.

Slide 1-55: Branches (continued)



- ICS allows the operations section chief or IC to create **branches** when the span-of-control is exceeded.
- Branches implement an assigned portion of the IAP.
- Branch directors, when activated, are under the direction of the IC or operations section chief.

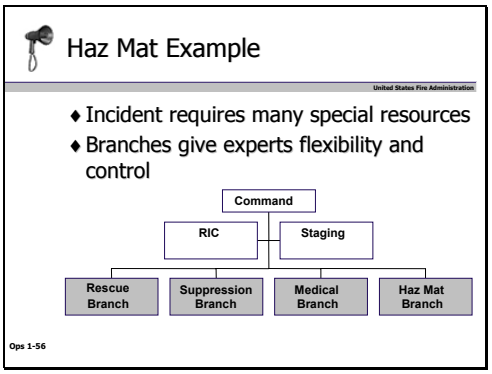
Ask the question:

Does the exposure branch have to be staffed?

Suggested response:

No, the operations section chief would still have only three subordinates.

Slide 1-56: Haz Mat Example

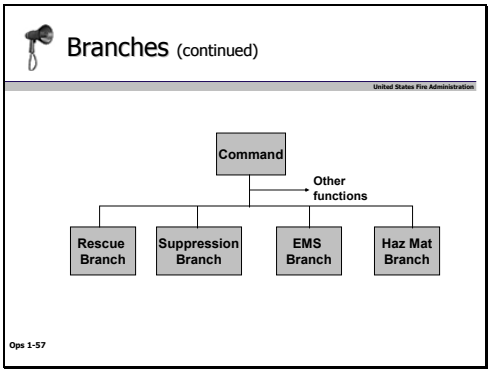


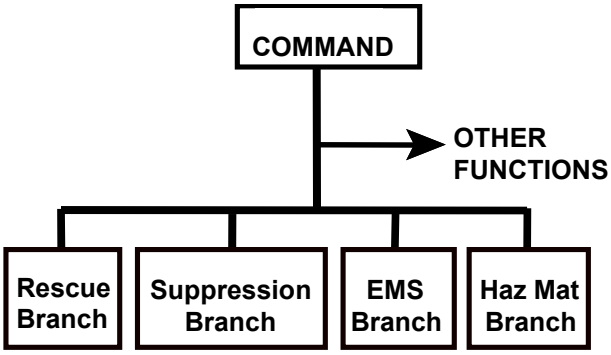
- If an incident is known to be very complex when units first arrive, the initial IC should start at the branch level instead of assigning divisions and groups.
- Example—A multicasualty situation with possible haz mat:
  - This incident will require numerous resources. It started out large, and the number and specialties of required resources demand immediate attention.

* Rescue requires very different resources than EMS or haz mat. The technical knowledge, expertise, tools, and equipment are considerably different.

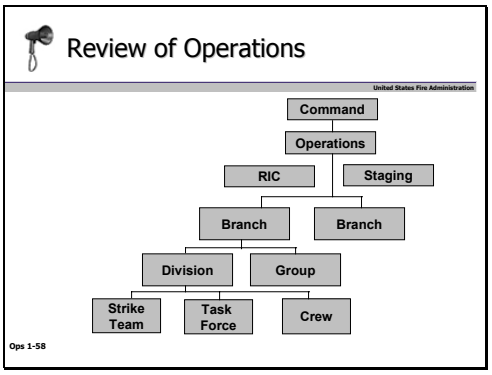
* By immediately appointing on-scene experts in those fields as branch directors, the IC gives them the greatest flexibility in organizing their part of the operation. Command is not bothered with such mundane requests as changes in subordinate command structures.

Slide 1-57: Branches (continued)





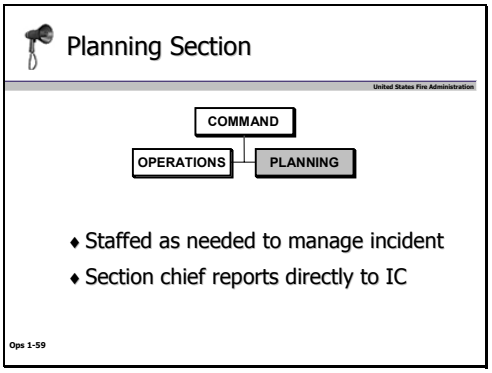
Slide 1-58: Review of Operations



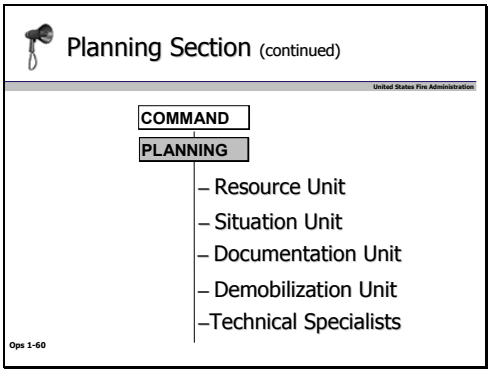
Instructor Notes:

Summarize this section by reviewing all of the components and relationships in the operations section of the ICS as shown on the slide.

Slide 1-59: Planning Section



Slide 1-60: Planning Section (continued)



VIII. The Planning Section (20 minutes)

A. Staffing the planning section

- The planning section chief function is staffed as needed to manage the incident effectively.
- The planning section chief reports directly to command.

B. Planning section units or responsibilities:

- **Resource unit**—maintains resource status information.
- **Situation unit**:
  - Develops incident status information,
  - Gathers information (size-up),
  - Predicts where incident will go, and

* Provides control options.

- **Documentation unit (DOC)**—maintains accurate and complete incident records for legal, analytical, and historic purposes.

- **Demobilization unit (DEMOB)**—determines methodology for de-escalation and release of resources at the close of the incident.
- **Technical specialists**—anyone from anywhere with expertise needed to control the incident:

  * Water resources,

  * Environmental experts,

  * Haz mat experts,

  * Building construction experts,

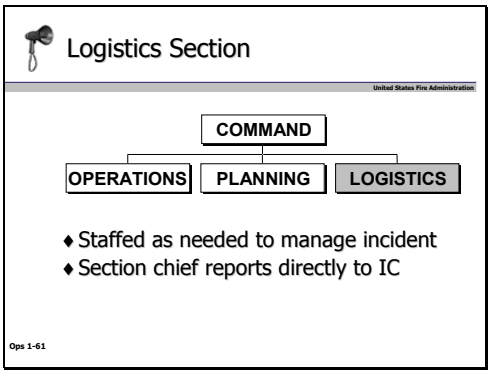
  * Legal experts, or

  * GIS experts.

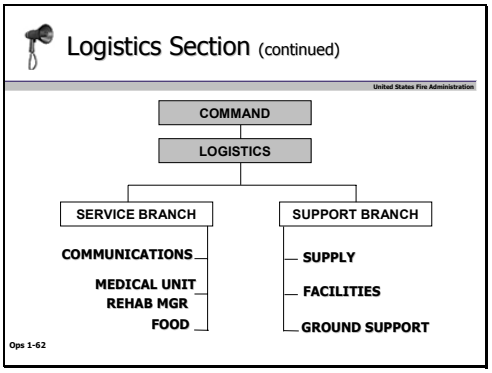
Instructor Notes:

If time permits, discuss examples of incidents from your experience in which a planning section was activated and the role it performed. Alternatively, solicit examples from the class.

Slide 1-61: Logistics Section



Slide 1-62: Logistics Section (continued)



IX. The Logistics Section (20 minutes)

A. Staffing the logistics section

- The logistics section has two branches because of the span-of-control problem presented by six units. Staff as needed to manage the incident.
- The branch director functions are not staffed unless the logistics section chief has most of the units in each branch staffed.

B. Service—responsible for all service activities at incidents.

- **Communications unit**—responsible for effective use of incident communications, equipment, and facilities.
- **Medical unit**—responsible for medical treatment and transportation for injured firefighters and other responders:
  - Not EMS for civilian injuries and
  - Also responsible for firefighter rehabilitation.
- **Food unit**—responsible for feeding of operational force members at incident facilities.

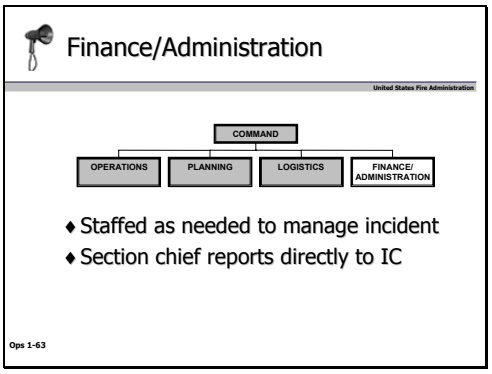
C. **Support branch—**responsible for developing and implementing logistics plans in support of the IAP.

- **Supply unit**—responsible for ordering non-fire-service personnel, equipment, and supplies.
- **Facilities unit**—responsible for layout and activation of facilities, for example, CP, and base camps.
- **Ground support unit**—responsible for service and repair of vehicles, transportation of personnel and supplies, for example.

Instructor Notes:

If desired, discuss the benefits of activating the logistics section at incidents that you have experienced.

Slide 1-63: Finance/Administration

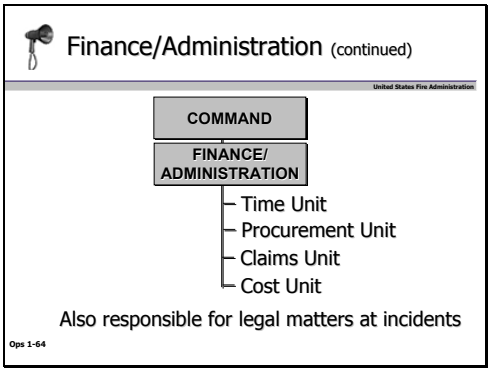


X. The Finance/Administration Section (20 minutes)

A. Staffing the finance/ administration section

- The function is staffed as needed for effective management of the incident.
- The section chief reports directly to command.

Slide 1-64: Finance/Administration (continued)



- The finance/administration section is also responsible for all legal risks of the incident.

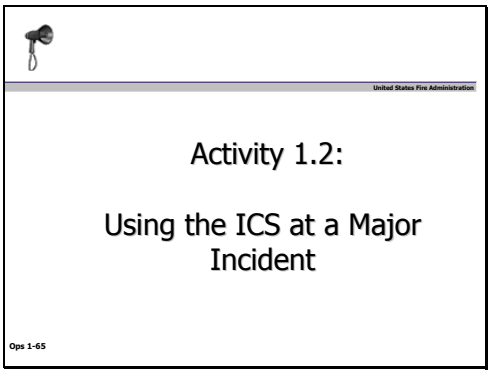
B. Finance/administration units and responsibilities

- **Time unit**—responsible for recording personnel time (on and off duty).
- **Procurement unit**—responsible for vendor contracts and purchases.
- **Claims unit**—responsible for processing all claims arising from the incident.
- **Cost unit**—responsible for collecting all cost data, providing cost estimates, and cost savings recommendations.

Instructor Notes:

Refer students to Figure 1-1, Comprehensive ICS Organization Chart, in their student manuals (a copy is provided in the instructor guide). If time permits, give them a few minutes to review the chart and ask questions.

Slide 1-65: Activity 1.2: Using the ICS at a Major Incident



XI. Activity 1.2: Using the ICS at a Major Incident (90 minutes)

Instructor Notes:

The following pages contain the instructor and student activity pages. Refer students to Activity 1.2, Using the ISC at a Major Incident, in their student manuals.

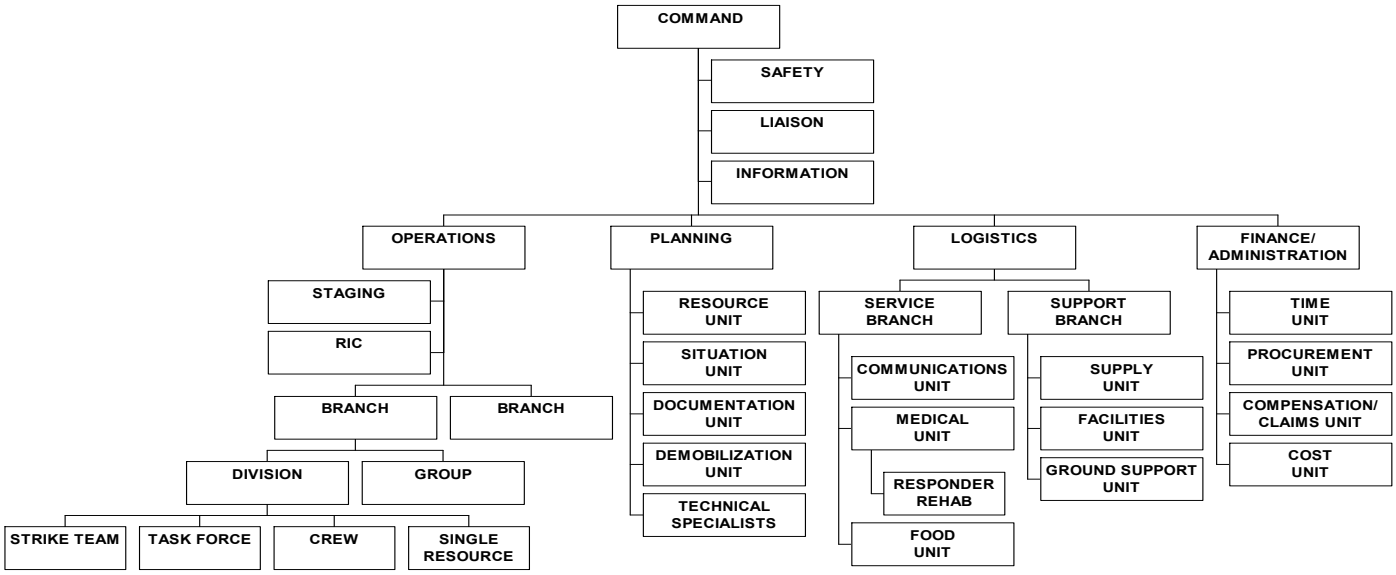


Figure 1-1: Comprehensive ICS Organization Chart

Activity 1.2:
Using the ICS at a Major Incident

Time: 90 minutes

Purpose:

To give the students practice in applying the full ICS and in developing an organizational structure for a major emergency incident.

Materials:

- Easel pads
- Markers

Directions:

1. Divide the class into four groups. Each group will play the role of the assistant chief who is responding to the incident described in the activity sheet in their student manuals. The assistant chief arrives at an emergency scene where multiple resource units are working. There is an obvious lack of command organization.

2. With the resources listed below, the small groups must develop an ICS organization that would be appropriate for this incident. Groups may reallocate any resources they feel are necessary, but they cannot order any additional resources. **All ICS positions are available for this activity.**

3. Groups will have 50 minutes to discuss the incident scenario and develop an ICS organization.

4. Groups should select a spokesperson to present the work to the class. They will have 40 minutes for reporting.

5. Refer students to the Student Activity Worksheet and review the following scenario.

Allow 50 minutes for group work. During this time, circulate among the groups to provide direction and answer questions.

Scenario:

Small groups represent an assistant chief who is dispatched with a third-alarm assignment to a fire in a two-story rooming house. Dispatch advises that the resources on the various alarms are as follows:

1st Alarm	2nd Alarm	3rd Alarm
Engine 1	Engine 4	Engine 7
Truck 1	Engine 5	Engine 8
Engine 2	Truck 5	Engine 9
Engine 3	Engine 6	Truck 9
ALS-1 (Medic)	ALS-2 (Medic)	ALS-3 (Medic)
BC-1	BC-2	BC-3
		AC-1

On your arrival, you find that the following conditions exist:

- All first- and second-alarm resources have been committed and are working at various assignments as individual units.
- Engine 1, Engine 2, Engine 3, and Truck 1 are on the first floor attacking the fire and conducting a search.
- Truck 1 has reported that it has two civilians down and needs medical assistance. Engine 4, Engine 5, and Engine 6 are on the second floor fighting a fire and are asking for help to do a search.
- Truck 5 is on the roof attempting to ventilate and is asking for assistance.
- Units on the first floor are directing their radio messages to the IC.
- Units on the second floor and the roof are directing their radio messages to Battalion 2.
- Battalion 1 is at his or her vehicle, which is parked at the curb in front of the main entrance to the building.
- Battalion 2 reports that he or she is on the second floor and has found a civilian down in the hallway.

- ALS-1 and ALS-2 are parked at opposite corners of the street and are asking for assignments.
- The units responding on the third alarm either are asking for assignments or are reporting their locations through the radio.
- A lieutenant from the training division has arrived at the same time you have and is observing the activity.
- Incidents of this type normally draw several TV/newspaper reporters.

Activity 1.2:
Using the ICS at a Major Incident
Instructor Answer Key

Group presentations:

Allow group spokespersons about 5 minutes each to review their groups' results. You should expect variations in the ICS organizational structures developed by different groups. This diversity reinforces the point that ICS is flexible in its modular approach to handling incidents.

However, discuss and correct any under-management or over-management depicted on the organizational charts. Examples of under-management include organizations that exceed a reasonable span-of-control by failing to activate enough ICS elements or by failing to have critical functions in place. Over-management might be indicated by activating elements that are not required for the incident.

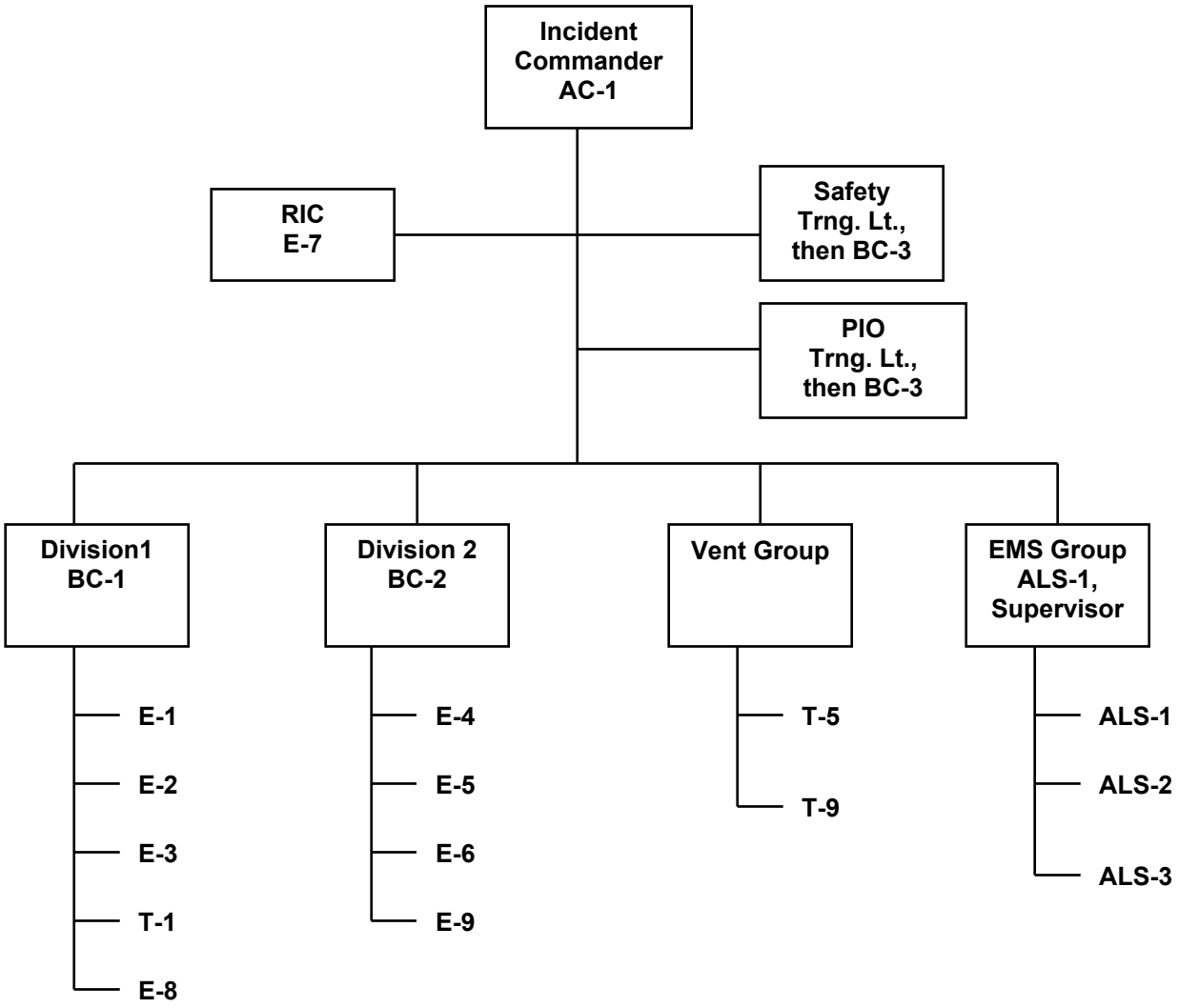
Summary:

Summarize the activity by reviewing the benefits of using the ICS organization at complex incidents, including:

- Flexibility,
- Control of multiple resources,
- Standardized terminology and procedures, and
- Clear lines of authority.

Sample Incident Organization

Using ICS at a Major Incident



Activity 1.2:
Using the ICS at a Major Incident
Student Activity Worksheet

Time: 90 minutes

Purpose:

To provide you practice in applying the full ICS organization and in developing an organizational structure for a major emergency incident.

Directions:

1. In small groups, role-play the part of an assistant chief who arrives at an emergency scene where multiple resource units are working. There is an obvious lack of command organization.

2. Analyze the situation and develop an ICS organization appropriate for the situation and the resources involved. **All ICS positions are available for the activity.** You will have 50 minutes to develop the chart.

3. Prepare an ICS organization chart on an easel pad and have a spokesperson present an explanation of your group's work to the class.

Scenario:

Small groups represent an assistant chief who is dispatched with a third-alarm assignment to a fire in a two-story rooming house. Dispatch advises the following resources:

1st Alarm	**2nd Alarm**	**3rd Alarm**
Engine 1	Engine 4	Engine 7
Truck 1	Engine 5	Engine 8
Engine 2	Truck 5	Engine 9
Engine 3	Engine 6	Truck 9
ALS-1 (Medic)	ALS-2 (Medic)	ALS-3 (Medic)
BC-1	BC-2	BC-3
		AC-1

On your arrival, you find that the following conditions exist:

- All first- and second-alarm resources have been committed and are working at various assignments as individual units.
- Engine 1, Engine 2, Engine 3, and Truck 1 are on the first floor attacking the fire and conducting a search.
- Truck 1 has reported that it has two civilians down and needs medical assistance. Engine 4, Engine 5, and Engine 6 are on the second floor fighting a fire and are asking for help to do a search.
- Truck 5 is on the roof attempting to ventilate and is asking for assistance.
- Units on the first floor are directing their radio messages to the IC.
- Units on the second floor and the roof are directing their radio messages to Battalion 2.
- Battalion 1 is at his or her vehicle, which is parked at the curb in front of the main entrance to the building.
- Battalion 2 reports that he or she is on the second floor and has found a civilian down in the hallway.
- ALS-1 and ALS-2 are parked at opposite corners of the street and are asking for assignments.
- The units responding on the third alarm either are asking for assignments or are reporting their locations through the radio.
- A lieutenant from the training division has arrived at the same time you have and is observing the activity.
- Incidents of this type normally draw several TV/newspaper reporters.

With the resources listed above, your group must develop an ICS organization that would be appropriate for this incident. You may reallocate any resources you feel are necessary, but you cannot order any additional resources. Your group has 50 minutes to discuss the incident scenario and develop an ICS organization. Record the ICS organization on an easel pad and select a spokesperson from your group to present the work to the class.

Notes:

Activity 1.2:
Using the ICS at a Major Incident
Student Assessment Sheet

Group Presentations:

Group spokespersons will have about 5 minutes each to review their groups' results. You should notice variations in the ICS organizational structures developed by different groups. This diversity reinforces the point that ICS is flexible in its modular approach to handling incidents.

However, you should correct any under-management or over-management depicted on your organizational chart. Examples of under-management include organizations that exceed a reasonable span-of-control by failing to activate enough ICS elements or by failing to have critical functions in place. Over-management might be indicated by activating elements that are not required for the incident.

Benefits of using the ICS organization at complex incidents include:

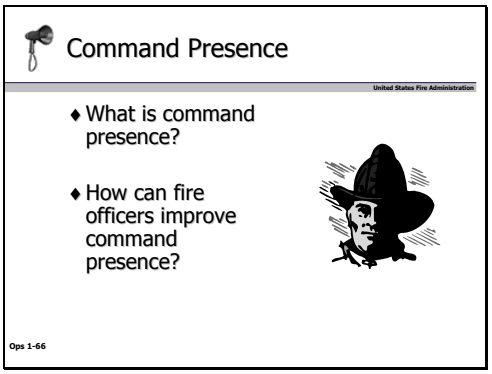
- Flexibility,
- Control of multiple resources,
- Standardized terminology and procedures, and
- Clear lines of authority.

XII. Incident Management Techniques (50 minutes)

Instructor Notes:

This section covers several important aspects of incident management, including command presence, transfer of command, and establishing a CP. The classroom session, presented as a series of large-group discussion questions, serves as a refresher and opportunity for students to ask questions. Throughout the discussion, evaluate student interests and needs, encouraging as much interaction as possible.

Slide 1-66: Command Presence



A. Command presence

Ask the question:

What is command presence?

Suggested response:

Command presence is the image of leadership, as shown through the following characteristics:

- Disciplined
- Decisive
- Confident
- Problem solver
- Competent
- Goal oriented
- In charge
- Knowledgeable
- Cool under pressure
- In control
- Dignified

Ask the question:

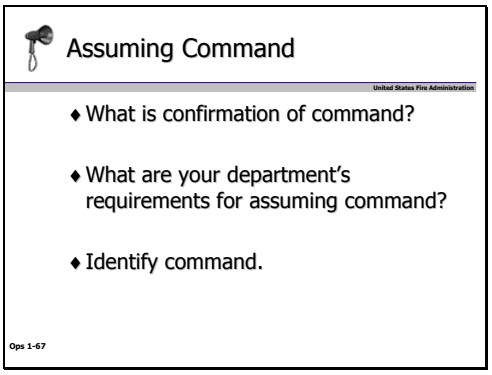
How can fire officers improve command presence?

Suggested responses:

- Get more training and education;
- Review case studies and talk to experts;
- Practice mental imaging of incident situations;
- Listen to your voice on tape;
- Consider your demeanor toward subordinates;
- Practice at small incidents;
- Evaluate your appearance;
- Look at role models and try to become one.

Summarize by emphasizing that command presence is a skill that can be learned and developed over time.

Slide 1-67: Assuming Command



B. Assuming command

Ask the question:

What is confirmation of command?

Suggested response:

Confirmation of command is the initial announcement that command is in place.

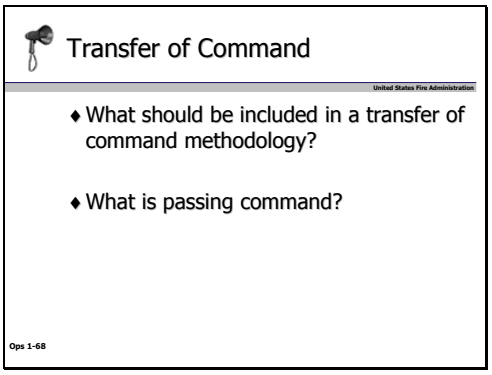
- The first person on the scene must assume command.
- Confirmation of command:
  - Assures a quick up-front command;
  - Requires the IC to formally announce command:
    - Informs everyone of who is in command and
    - Coordinates assumption of command; and
  - Identifies command.

Ask the question:

What are your department's requirements for assuming command?

Discuss variations, for example, first officer or a chief assuming command. Some departments don't allow company officers to assume command on arrival.

Slide 1-68: Transfer of Command



C. Transfer of command

Ask the question:

What should be included in a transfer of command methodology?

Suggested responses:

- Strategies,
- Situation status,
- Resource status,
- Additional resources requested, and
- Specific hazardous conditions or potential.

Ask the question:

What is passing command?

Suggested response:

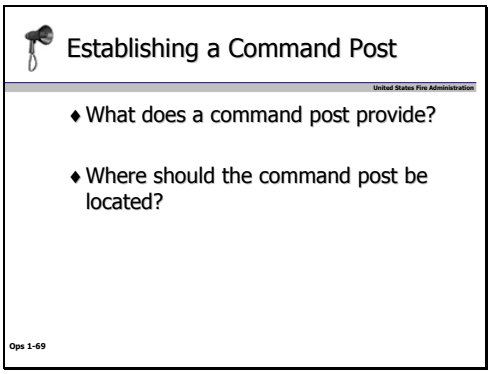
Passing command is a method by which the first-in company officer gives command to another arriving company officer or chief.

- To pass command, the first-in officer must determine that his or her addition to the operation will have a significant impact on the outcome of the incident. If so, command can be passed to another arriving unit, usually the second due.
- The unit to whom command is passed cannot assume command until it is on the scene.
- Example—three-person company (officer, driver, and firefighter) response at:

* Rescue situation: if a ladder must be thrown to save a victim at second floor window, the officer should help.

* Room and contents fire on second floor: if the firefighter needs help to get into position, the officer should assist on the hose line.

Slide 1-69: Establishing a Command Post (CP)



D. Establishing a Command Post (CP)

Ask the question:

What does a CP provide?

Suggested responses:

The CP provides a stationery location for management functions, a "nerve center" for the incident, including:

- A place to think and make decisions;
- A vantage point;
- Lighting for night operations;
- Reference/preplanning material;
- Communications resources;
- A space for staff assistance; and
- A place to retain sanity.

Ask the question:

Where should the CP be located?

Suggested responses:

The CP should be in a position that gives a good view of the incident, but does not hinder apparatus movement and operations:

- Conspicuous location and easy to find;
- If possible, in front of the incident;
- Perhaps in command officer's car or fire apparatus;
- Adequate working space, lighting, and communications capability; and
- For long campaigns, food, sanitation, and sleeping facilities.

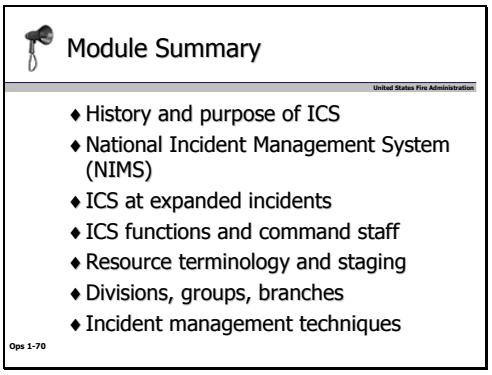
XIII. Module Summary (10 minutes)

Instructor Notes:

Briefly summarize the module and provide an opportunity for students to comment and ask questions.

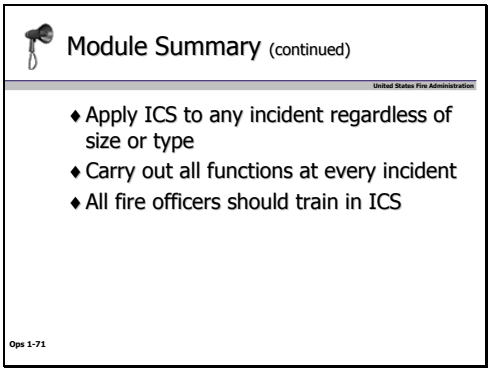
- This module examines the components of a model ICS that can be applied to any incident.

Slide 1-70: Module Summary



- Topics covered:
  - History and purpose of the ICS;
  - National Incident Management System (NIMS)
  - ICS organization at expanded incidents;
  - Review of ICS general staff positions—operations, planning, logistics, and finance/administration;
  - Resource terminology and staging;
  - Divisions, groups, and branches; and
  - Incident management techniques—command presence, assuming command, transfer of command, and establishing a CP.

Slide 1-71: Module Summary



- Important points:
  - ICS is useful not only on large operations but also can and should be applied to any incident regardless of size or type.
  - It is important that all functions be carried out at every incident.

* The size and/or type of incident dictates the degree to which each function is addressed.

* The resources available is in terms of personnel will dictate how many functional responsibilities can be delegated.

* A vital consideration is training. All fire officers must thoroughly train in the ICS and must continually practice and refine related skills.

MODULE 2

MODULE 2

INCIDENT COMMAND DECISION-MAKING

MODULE 2:

INCIDENT COMMAND DECISION-MAKING

Terminal Objective

Upon completing the module, the students will be able to apply the classical or naturalistic decision-making methods in the size-up process to identify incident objectives and strategies.

Enabling Objectives

Students will:

- Identify the difference between classical and naturalistic decision-making;
- Determine whether to use the classical or naturalistic decision-making method at a particular incident;
- Size up and identify at least three incident problems and the cues that they used to detect them;
- Determine at least three incident objectives and three strategies to address the incident; and
- Determine at least three tactics to carry out to complement each strategy.

Requirements

Facility

Classroom with tables

Materials

- COTC Operations Instructor Guide
- COTC Operations Student Manual
- PowerPoint® slides

Equipment

- Computer
- LCD projector
- One portable screen or classroom equipped with screen
- Chalkboard/wipeboard
- Easel pads with markers

Instructor Guidelines

This course is intended for a third level of management, the battalion chief or newly promoted chief officer, in a typical emergency services organization. The newly promoted chief officer will think in terms of strategy, as opposed to tactics, on an emergency scene. The officer will need a good, basic understanding of tactics as they play into strategic decisions, but will focus on strategic decisions. To this end, it is recommended that students complete Modules 1 through 3 (Application of the Incident Command System [ICS], Incident Command Decision-Making, and Incident Action Plan [IAP]/Planning) before enrolling in any of the simulation exercise modules.

The simulations in this course are designed to provide opportunities for the newly promoted chief officers to develop their skills as incident commanders at emergencies that require more resources than “normal” first-alarm, initial attacks in their communities. This simulation methodology allows the students to transition from the tactical perspective of a company officer to a strategic perspective of a chief officer who makes command level decisions based on strategic objectives required of an incident commander at a major target hazard incident.

The officers attending this course should be familiar with the target hazards found in their communities. Some of these hazards are significant and are known as

target hazards. Target hazards are defined as incidents that:

- Overload fire equipment and personnel resources;
- Involve atypical hazards;
- Produce a significant negative impact on the community;
- Require technical advice for effective strategy development; and
- May initiate multi-agency involvement.

The most serious of these target hazards, for example, a major commercial or high-rise fire, can quickly stretch the capacity of the fire department's resources.

The students should rotate through the various command and general staff positions to see the responsibilities of the incident commander as individual components. The instructor would normally divide the class into groups of six to eight students, assigning each student a position on the Incident Management Team (IMT). An alternate method is to assign more experienced students to the IMT positions and assign other students in deputy or assistant roles, which allows them to shadow their more experienced peers. As the course develops, the instructor may begin to assign additional responsibilities to the command and general staff, including the development of the Incident Action Plan (IAP). The ICS forms needed to complete the IAP are included in the appendix of each simulation exercise module.

This module explains and reinforces the difference between classical and naturalistic decision-making (previously called recognition-primed decision-making). Naturalistic decision-making is a process in which extremely fast decisions are made. The process is dependent on the experiences and training of the decision-maker. The decision-maker relies on reading critical cues from the incident, comparing those critical

cues to previously witnessed or learned critical cues, and reacting to those critical cues in a manner previously witnessed or learned. For highest efficiency, the decision-maker must know what critical cues are most important for the specific situation and the most effective specific response to each critical cue. For example, if one learns the correct critical cues, but learns the incorrect response to those critical cues, the decisions made will be flawed and the most correct and efficient solutions will not be applied. Naturalistic decision-making is extremely rapid. It is the desired method for emergency operations.

The classical method of decision-making is used when the incident type presents cues with which the decision-maker has little or no experience or the incident requires a set of reactions that the decision-maker has not experienced or learned before the incident occurs. In this situation, the decision-maker must process information by reading the cues, compare those cues to what has been learned from similar situations, arrive at a conclusion or result by hypothesizing, determine the actual problems and strategy for the incident, evaluate and select the most effective tactics, and implement the action plan. Having completed this process, and if the resulting actions are successful, the decision-maker, in future similar situations, will simply use the naturalistic decision-making method to reach the desired conclusions and results.

The command sequence is presented as an outline for officers to follow when developing and implementing an action plan using the classical method of problem-solving. By following the command sequence, officers are forced to think before they act. The starting point for this process has traditionally been the size-up. Students must realize that size-up is not a means to an end, nor is it a step that will be taken and then left incomplete. It is the starting point of a continuous

process. In fact, size-up will continue throughout the entire incident.

As part of this size-up, the chief officer must be able to make quick and appropriate decisions based on pre-established priorities. This need to make irrevocable, life-altering decisions is what separates the chief fire officer from nearly all other professions. The focus of this module is to consider a process of thought that will empower the officer to make these quick decisions. More importantly, it demonstrates how to establish the foundation for future decision-making throughout an incident.

Methodology

This module uses lecture and discussion supported by individual and small-group activities. It is important that the instructor use local Standard Operating Guidelines (SOGs) and pre-planning documentation whenever practical. Develop a supportive and open environment. Instructors should challenge the students to examine their present perceptions and values regarding incident priorities.

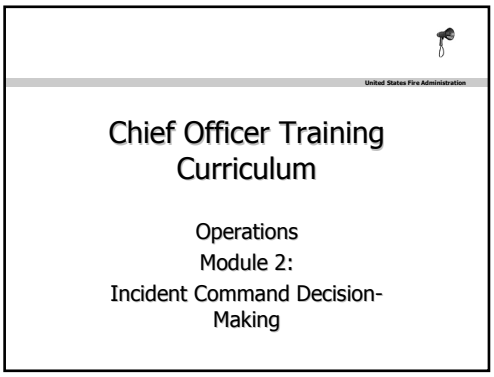
Outline

I.	Objectives and Overview	5 minutes
II.	Incident Scene Decision-Making	25 minutes
III.	The Classical Thought Process: The Command Sequence	25 minutes
IV.	Size-Up	25 minutes
V.	Activity 2.1: Using Size-Up to Identify Problems	20 minutes
VI.	Establishing Objectives and Determining Strategy	15 minutes
VII.	Activity 2.2: Determining Strategy	15 minutes
VIII.	Selecting Tactics	15 minutes
IX.	Incident Action Planning	10 minutes
X.	Activity 2.3: Action Planning	30 minutes
XI.	Unified Incident Command Strategy	25 minutes
XII.	Activity 2.4: Classical Versus Naturalistic Decision-Making	20 minutes
XIII.	Module Summary	10 minutes
		240 minutes

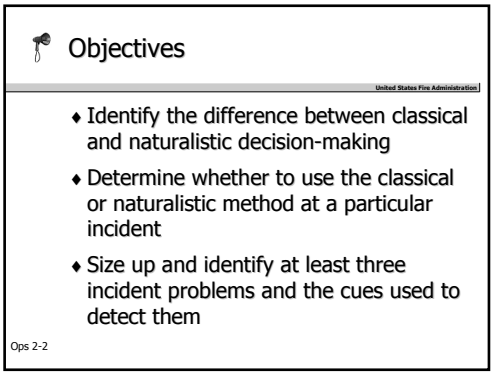
NFPA 1021 Standards Cross-Reference Matrix

3-6, 3-7, 4-6, 4-7

Slide 2-1: Module 2, Incident Command Decision-Making



Slide 2-2: Objectives



I. Objectives and Overview (5 minutes)

A. Objectives

The students will:

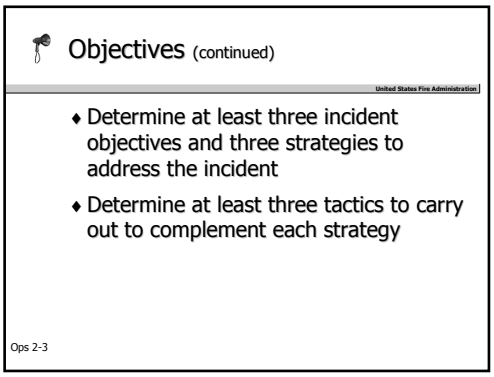
- Identify the difference between classical and naturalistic decision-making;

Instructor Notes:

Naturalistic decision-making was previously called Recognition-Primed Decision-Making (RPD).

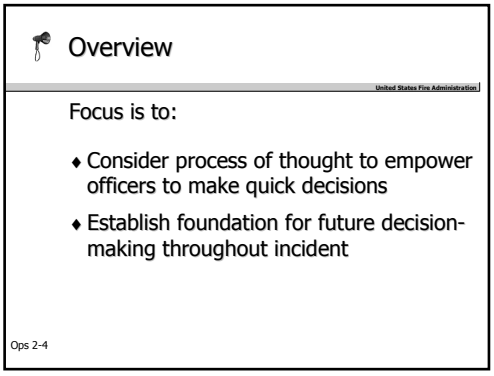
- Determine whether to use the classical or naturalistic decision-making method at a particular incident;
- Size up and identify at least three incident problems and the cues that they used to detect them;

Slide 2-3: Objectives (continued)



- Determine at least three incident objectives and three strategies to address the incident; and
- Determine at least three tactics to carry out to complement each strategy.

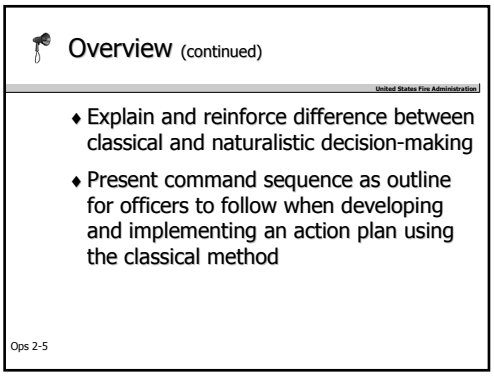
Slide 2-4: Overview



B. Overview

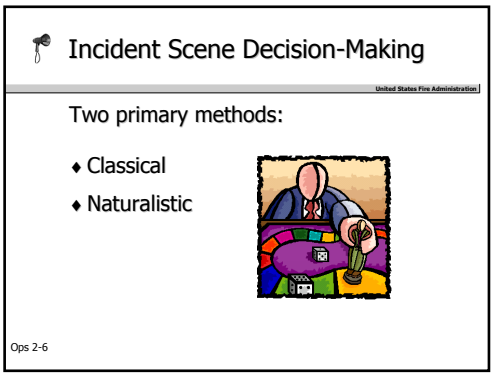
- The focus of this module is to consider a process of thought that will empower the officer to make quick decisions and, more importantly, to establish the foundation for future decision-making throughout an incident.

Slide 2-5: Overview (continued)

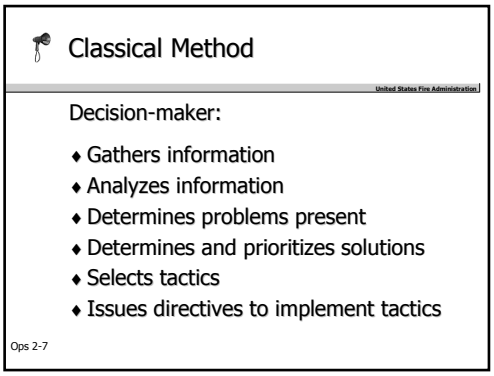


- This module explains and reinforces the difference between classical and naturalistic decision-making.
- The command sequence is presented as an outline for officers to follow when developing and implementing an action plan using the classical method of decision-making.
- We'll begin with an overview of incident scene decision-making.

Slide 2-6: Incident Scene Decision-Making



Slide 2-7: Classical Method



II. Incident Scene Decision-Making (25 minutes)

Instructor Notes:

Ask the question:

What is the difference between classical decision-making and naturalistic decision-making?

Two primary methods are used by incident scene decision-makers to reach conclusions, determine results, and institute actions:

- Classical and
- Naturalistic.

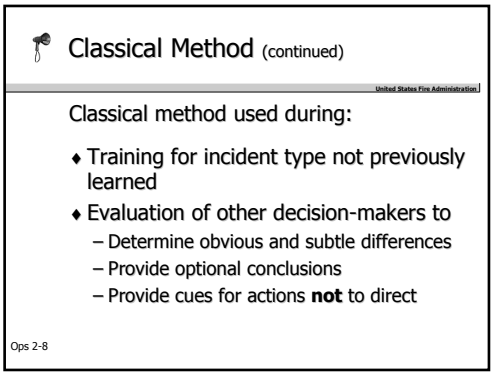
A. Classical decision-maker

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

- Gathers information;
- Analyzes the information;
- Determines the problems that are present and selects and prioritizes those problems in order of importance;
- Determines and prioritizes what the solutions must be;

- Selects tactics from one or more options; and
- Issues directives to have the tactics implemented.

Slide 2-8: Classical Method (continued)



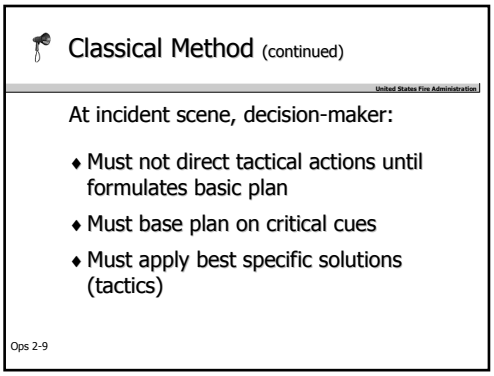
B. Classical process

The classical process is used when the decision-maker is in training:

- Being taught the critical cues, conclusions, results, and actions for an incident type not previously learned, or learned incorrectly (for example, an urban or city fire officer learning wildland firefighting decision-making from a wildland expert);
- Evaluating and comparing the critical cues used, conclusions and results determined, and actions taken by other decision-makers (for example, case studies):
  - To determine obvious and subtle differences;
  - To provide optional conclusion, result, and action sets based on those differences; and
  - To provide cues that would indicate that certain actions should not be directed.

- The classical process is used during evaluation and planning when time is not a factor.
- The decision-maker uses the classical decision-making process when he or she is looking for the best solution.

Slide 2-9: Classical Method (continued)

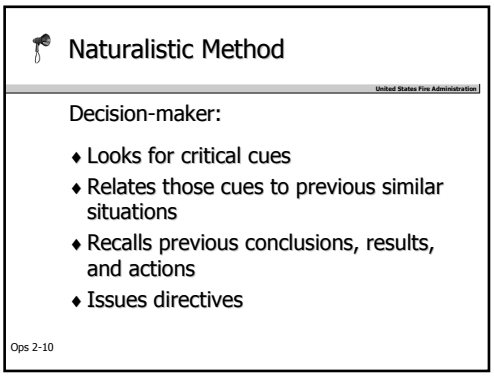


C. Classical process at incident scene

The classical process is needed when the decision-maker is at an actual incident scene and there has been little or no previous experience or training with this specific incident type or little or no previous experience or training with an incident with the variables that are now present.

- The decision-maker must not direct tactical actions until a basic plan has been formulated. 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.
- The plan must be based on incident information (critical cues), real problems, and appropriate broad solutions (strategies).
- The best specific solutions (tactics) must be applied, and most often, these tactics will be chosen from several options.

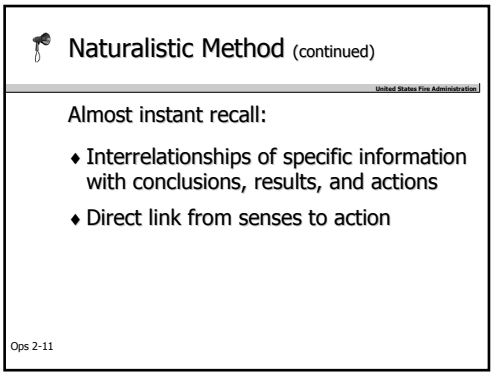
Slide 2-10: Naturalistic Method



D. Naturalistic decision-maker

- The naturalistic method is a process in which the decision-maker:
  - Looks for certain critical cues (visual, verbal, touch, smell);
  - Relates those critical cues to previous similar situations (experience or training);
  - Recalls the previous conclusions, results, and actions that best fit the new situation; and
  - Issues directives to have the tactics implemented.
- The greater the experience on the same type of incident, the greater one's ability to read the subtle differences at any incident of that type, draw refined conclusions, and direct the most appropriate actions to provide a solution.
- It is obvious that basing decisions on understanding from previous experience can produce action results much faster than following a step-by-step intellectual process.

Slide 2-11: Naturalistic Method (continued)



E. Naturalistic process

If the decision-maker has adequate experience or training for the incident type, then he or she will use the naturalistic method.

- The naturalistic method is the normal way the brain works. The brain will always try the naturalistic method to solve any problem or answer any question.

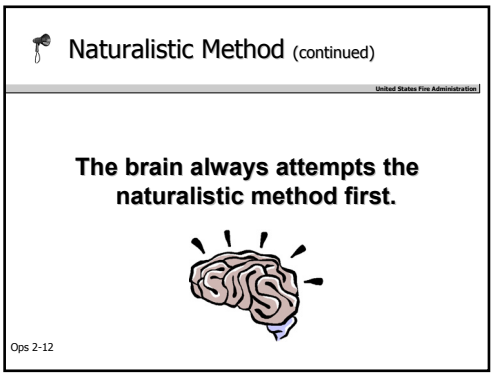
- When the naturalistic method fails to provide a solution or answer, you must have a method of providing answers and solutions.

- The naturalistic method is an almost instantaneous recall of previously learned information.

  * It includes the interrelationships of specific information with conclusions, results, and actions based on previous experience.

  * Therefore, it provides a direct, lightning-fast link from what a person sees, hears, smells, and feels to what he or she concludes or how he or she behaves.

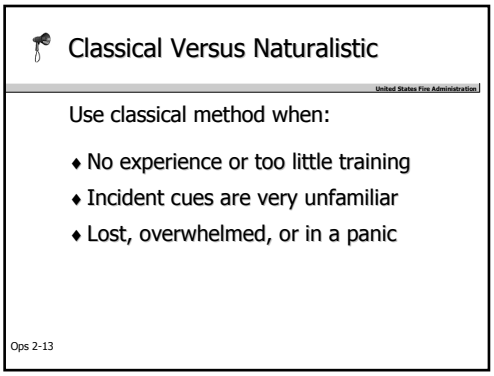
Slide 2-12: Naturalistic Method (continued)



- Because of the time-pressured nature of emergency-scene decision-making, the choice between naturalistic and classical methods will not be conscious. The decision-maker's brain will always attempt NDM first.

- In the naturalistic method, the decision-maker looks for a solution that satisfies the immediate need.

Slide 2-13: Classical Versus Naturalistic



F. Classical Versus Naturalistic

The decision-maker must recognize when he or she possesses insufficient information to use the naturalistic method and should, instead, use the classical method:

- If it is obvious to the decision-maker that there has been no experience or too little training on the specific incident;

Instructor Notes:

Ask the question:

If you had a terrorist incident, could you use the naturalistic method? Would you have enough training and experience?

After a short discussion with the students, m**ake the point that decision-making is incident dependent.**

- If the decision-maker recognizes that the incident cues are very unfamiliar and do not immediately result in what he or she considers appropriate action; or

- If the decision-maker feels lost or overwhelmed, cannot think, or panics.

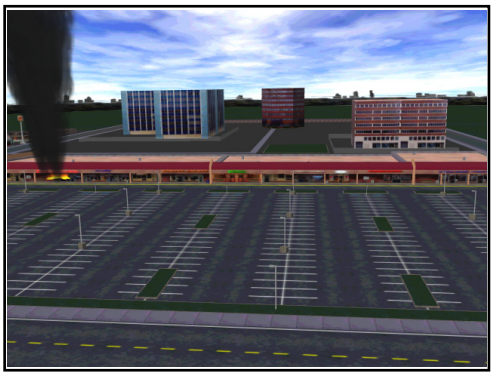
G. Use the classical method to evaluate naturalistic method

The decision-maker will use the classical method to evaluate naturalistic actions that have been ordered in a specific situation to ensure that what is being done is achieving the desired results.

Instructor Notes:

Inform the students that NFPA has a definition; in short, *decision-making* is a continuous process by all members from start to termination. This process is continuing size-up. The commander asks, "Is what I have directed to be accomplished actually solving the problems at the incident?"

Slide 2-14: Classical Versus Naturalistic



Ask the question:

Based on your experience, what tactics would you assign for the fire depicted in the slide.

Suggested response:

Use naturalistic decision-making to determine tactics.

III. The Classical Thought Process—The Command Sequence (25 minutes)

Instructor Notes:

The command sequence is composed of three action steps. They are:

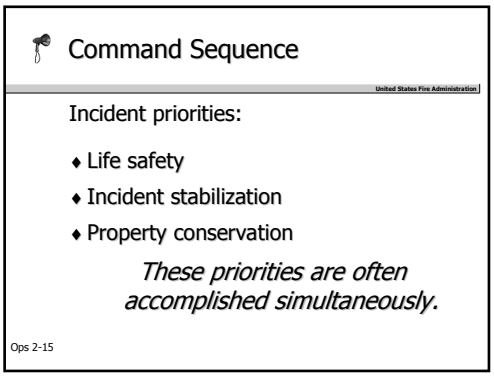
1. Size up the incident,
2. Designate strategies and tactics, and
3. Implement the action plan.

Each step has a specific outcome:

1. Identifying the problem,
2. Developing the Incident Action Plan (IAP), and
3. Performing the tasks.

The entire process is based on the mission as defined by the incident priorities.

Slide 2-15: Command Sequence



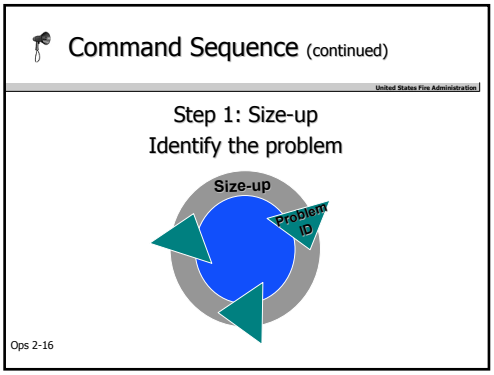
A. Incident priorities

The incident priorities define the mission. All strategy and tactics must be conceived within the boundaries of the mission. The incident priorities are:

- Life safety,
- Incident stabilization, and
- Property conservation.

These priorities are often accomplished simultaneously. For example, sometimes proper placement of stream achieves confinement of the fire, provides egress, and reduces water damage.

Slide 2-16: Command Sequence (continued)



B. Size up the incident

- Size-up is the gathering and recognition of information cues:
  - Assessing the situation, and
  - Directing the first action.
- Size-up is the analysis and comparison of incident cues and is the basis for problem identification.
  - These problems must be identified to set incident priorities.

* Problem identification is the first outcome.

C. Establishing control objectives

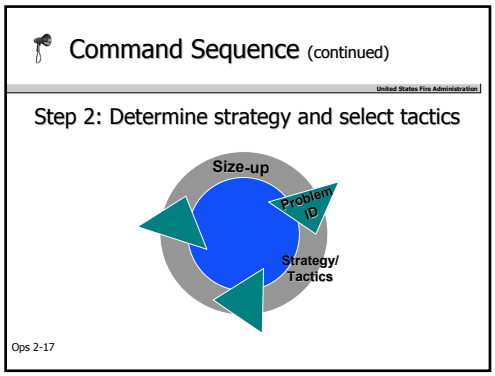
- Objectives are statements of guidance and direction.
- They are based on realistic expectations and measurable.

Instructor Notes:

Present the following examples of control objectives for a three-story nursing home fire:

- Remove all occupants from areas of danger;
- Treat all occupants with proper and effective medical care; and
- Confine fire to area of origin.

Slide 2-17: Command Sequence (continued)



D. Determine strategies and select tactics

- Strategy is the "what" of the solution: What must be done to solve the problem?
- Tactics are the "how" of the solution: the specific action that must be performed.

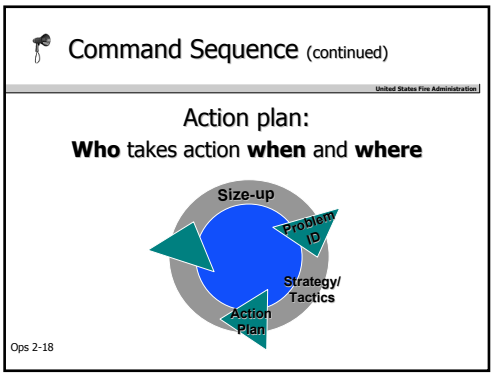
  Examples of tactics are:

* Assign Engine 1 to rescue group to extricate residents from first floor through the east door.

* Assign ALS to medical group to establish a treatment area. Engine 3 is fire attack and takes 1 ¾" hose through Side A.

- Designating strategies and tactics is the second action step.

Slide 2-18: Command Sequence (continued)



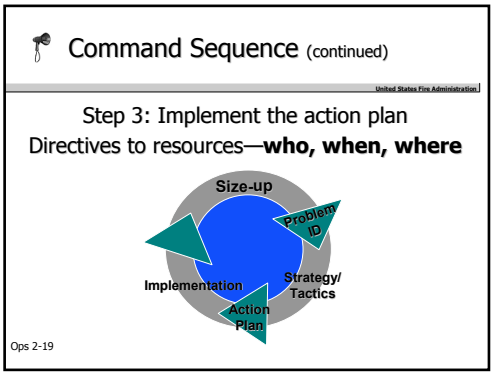
E. Implement an action plan

The action plan delineates "who" takes the action and "when" and "where" the action takes place.

- The action plan includes the determined strategy and selected tactics.

- The action plan is the second outcome.

Slide 2-19: Command Sequence (continued)



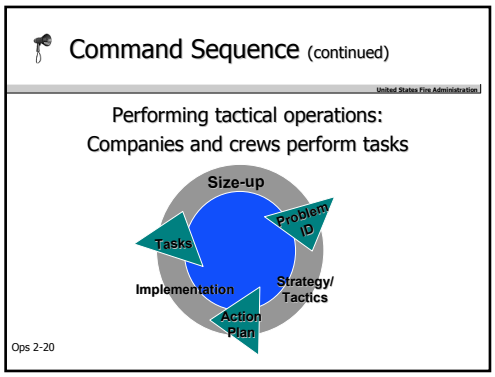
F. Implementing the action plan

- Resources need to know their parts of the plan.

- Directives are issued to the resources delineating their parts of the plan, the "who," "when," and "where."

- Implementing the action plan is the third step.

Slide 2-20: Command Sequence (continued)



G. Performing tactical operations

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

Instructor Notes:

Ask the question:

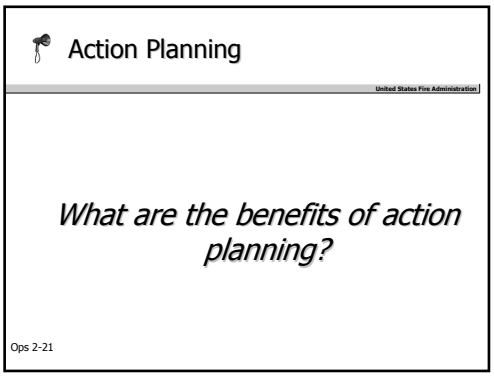
Why does performing tactical operations cycle back into size-up?

Suggested response:

Size-up not only before, during, and continuous. You adjust to the incident and continue the risk/benefit analysis.

Stress that it is critical that the IC have a plan of action **before** tactical operations start. Also stress that the next module will cover the creation of a written plan of action in detail.

Slide 2-21: Action Planning



H. Benefits of action planning

Instructor Notes:

Ask the question:

What are the benefits of action planning?

After students have answered the question, present the following points.

- The benefits of action planning are:
  - Making firefighters think before they act;
  - Helping keep the IC in a proactive mode; and
  - Helping to assure critical cues are not overlooked.
- Action planning can be used at any type of incident.
- Action planning provides a logical thought process to follow.

Instructor Notes:

Ask the question:

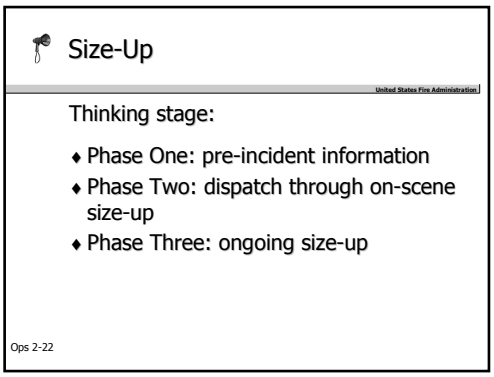
Do you use action plans at incidents? Are they written action plans?

Allow a short time for the students to explain their action plans before continuing to the next section.

I. Continuous size-up

- The command sequence is continuous.
- Size-up continues throughout the incident.
- If Incident Commanders suspect that an incident will carry on another operational period, then it is critical to begin formal incident action planning early in the process.
- After the first cycle ending at tasks, the IC should re-evaluate the actions taken, that is, continue size-up.
- This continued size-up affords an opportunity to see where the action plan should be modified.

Slide 2-22: Size-Up

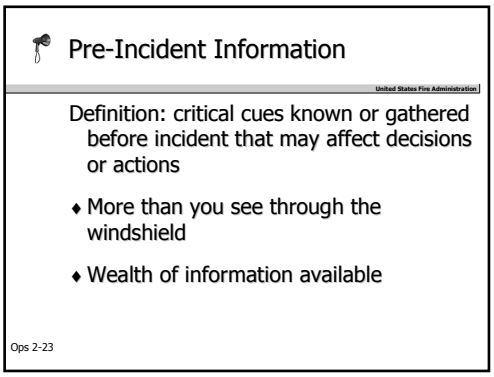


IV. Size-Up (25 minutes)

- Size-up is the gathering and analysis of incident information (critical cues) that provides the basis for problem identification. This is the thinking stage.
- Three phases comprise this thinking stage:
  - Phase One: pre-incident information
  - Phase Two: dispatch through on-scene size-up

* Phase Three: ongoing size-up

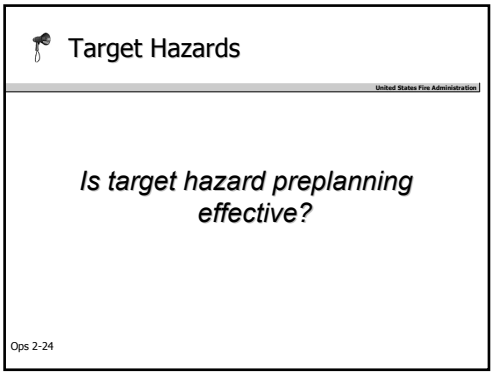
Slide 2-23: Pre-Incident Information



A. Phase One: pre-incident information

- Size-up is more than what you see through the windshield when you arrive at the scene.
- Definition: Pre-incident information is factors (critical cues) that are known or gathered before the incident that may have an impact on decisions or actions.
- A wealth of information is available before alarm.

Slide 2-24: Target Hazards



B. Target hazards

Instructor Notes:

Ask the questions:

Is target hazard preplanning effective? Do you regularly perform target hazard preplanning? Give some examples of how gathering pre-incident information made a difference in a response to an incident.

One type of emergency that you can plan for is at a community target hazard.

- A target hazard is a specific occupancy that poses a special concern to a fire department.

It can be defined in different ways, depending on the community where it resides. Communities can have the same type of occupancy (for example, a school), yet in one community it isn't a target hazard, but in another community it is.

A target hazard is also defined by a fire department's ability to deal with a fire at the hazard. For example:

* A senior citizen's complex in a town where a fire in the complex has never occurred may be a target hazard.
* A town with a similar complex and experience fighting fires in this type of occupancy may be better prepared, both mentally and organizationally.

- Factors that contribute to calling an occupancy a target hazard include:
  * A fire department's ability to deal with a fire (for example, experience with the type of emergency or frequency of occurrence);
  * A fire department's response time;
  * Distance from a water source;

* Code enforcement (or lack of);
* Type of building occupants (for example, elderly, small children, physically and mentally disabled persons, trained/untrained staff, and number of occupants); and
* Building construction (for example, highly flammable materials [or not] and egress types [revolving doors versus double doors, locked versus unlocked doors, and wide versus narrow hallways]).

Instructor Notes:

Refer the students to their pre-assignment in which they completed the Pre-incident Planning Priority Matrix.

Ask the question:

What is your role as chief officer in target hazard preplanning?

Suggested answer:

Empower your company officers to conduct preplanning. Having no time is no excuse. You must decide that preplanning is important and assign tasks to accomplish it.

Explain to the students that the simulation modules in this course are based on typical community target hazards (for example, nursing homes and shopping malls).

Preplanning objectives for the target hazards in the simulations will be discussed in those modules.

Ask the question:

What other types of information are available before the incident?

Suggested responses:

- Environmental conditions;
- Time of day, day of week, and season of year;
- Knowledge of the response area;
- Departmental resources; and
- Interagency/private sector assistance.

Ask the question:

What is the value of pre-incident information to the IC?

Suggested responses:

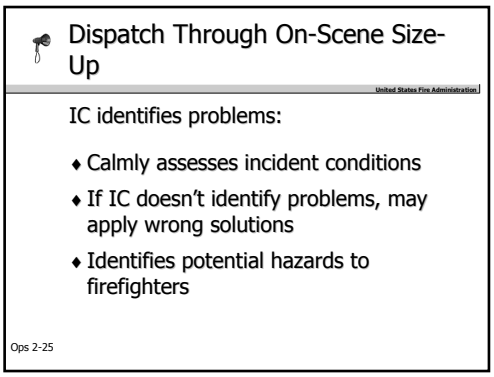
- Helps the IC understand what **has** happened (if a fire has occurred at the target hazard, for example);
- Helps the IC identify problems and understand what **is** happening;
- Helps the IC predict what is **going** to happen;
- Helps the IC to understand **resource needs**, both personnel and equipment;

- Assists in development of strategies and tactics;
- Helps identify tactical operations that may be necessary; and
- Helps identify **safety** considerations:
  - * What hazards are **present**?
  - * What are the **potential** hazards?

Point to remember:

It is hard to obtain pre-incident information when the flames are licking at the boxes of dynamite.

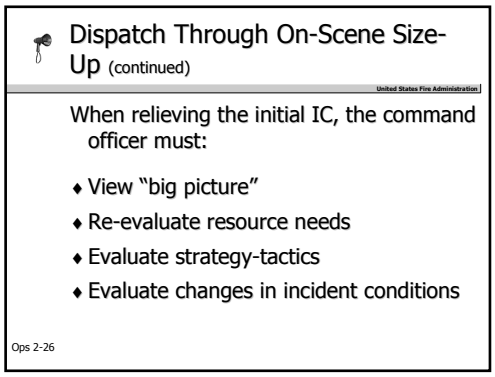
Slide 2-25: Dispatch Through On-Scene Size-Up



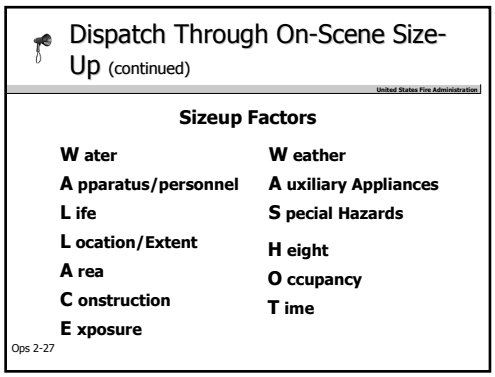
C. Phase Two: dispatch through on-scene size-up

- Phase two is a rapid gathering and mental evaluation of various factors (critical cues) related to a specific emergency incident.
- The first objective is to identify problem(s):
  - * The IC must try to assess conditions calmly;
  - * If problems are not identified before actions are taken, wrong solutions may be applied; and
  - * Potential hazards to firefighters should be identified.

Slide 2-26: Dispatch Through On-Scene Size-Up (continued)



Slide 2-27: Dispatch Through On-Scene Size-Up (continued)



- When relieving an initial IC, the command officer must:
  - View the "big picture;"
  - Re-evaluate resource needs;
  - Evaluate current strategies and tactics;
  - Evaluate changes in incident conditions; and
  - Evaluate probability of escalation.
- The acronym **WALLACE WAS HOT** can be used for training on the factors that affect size-up.

Water **W**eather

Area **A**uxiliary appliances*

Life **S**pecial hazards

Location/Extent

Apparatus/Personnel **H**eight

Construction **O**ccupancy

Exposures **T**ime

*Standpipes, sprinklers, heat detectors, for example.

- **WALLACE** is best used for training to include all factors.

* All factors are not critical at every incident, nor does this represent all of the factors to be considered.

* Prefire planning is the best way to gather size-up information.

* At the incident scene, all factors are in a constant state of change.

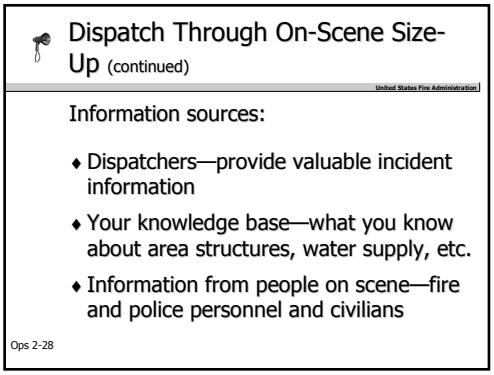
- Information sources

  * Dispatchers provide valuable incident information.

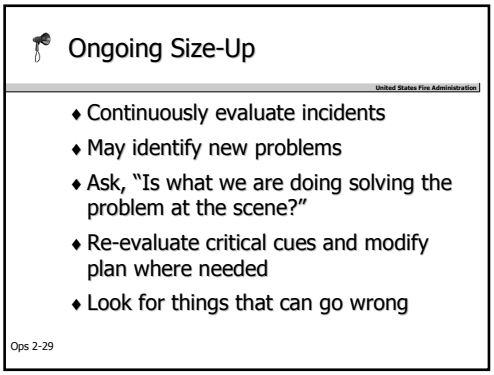
  * Your knowledge base—for example, what you know about the area, structures, and water supply.

  * Information from people on scene, including fire and police personnel and civilians.

Slide 2-28: Dispatch Through On-Scene Size-Up (continued)



Slide 2-29: Ongoing Size-Up



D. Phase Three: ongoing size-up

- Incidents are dynamic, and the IC must continuously evaluate the situation.

- New problems may be identified that require solution as an incident escalates or de-escalates.

- The IC must evaluate actions taken. The IC must ask, "Is what we are doing solving the problems at this scene?"

- A re-evaluation of the critical cues may indicate that the action plan must be modified.
- A pessimistic view is required. Look for things that can go wrong.
- Murphy's Law applies here also.

Instructor Notes:

Refer students to the Sample Factors Chart in their student manuals. The chart is provided in the instructor guide.

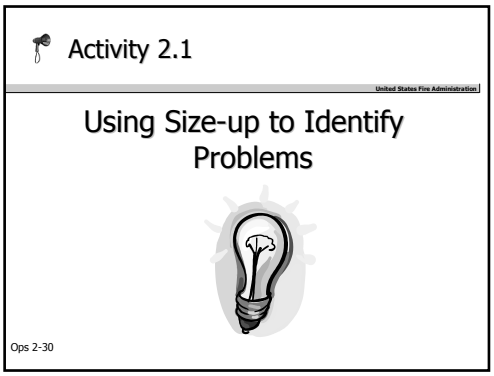
Make the following points about the chart.

E. Size-up cycle

- Primary factors are the conditions and elements that should be recognized and evaluated on arrival and during the course of the incident.
- Secondary factors are the activities undertaken to achieve objectives. (See the Sample Factors Chart.)
- Any decision that you make will have an impact on any or all of these factors
- Conversely, decisions that you do not make will allow for further impact on other factors.

- A good decision that is timely is far better than a perfect decision that is made too late.

Slide 2-30: Activity 2.1: Using Size-Up to Identify Problems



V. Activity 2.1: Using Size-Up to Identify Problems (20 minutes)

Instructor Notes:

The following pages contain the instructor and student activity pages. Refer students to Activity 2.1 in their student manuals.

In this activity, student will only perform size-up and identify the problem. In Activities 2.2 and 2.3, they will identify strategies and tactics.

Primary Factor Size-Up Chart

P = Pertinent NP = Not Pertinent

P	Factors		NP
	Life Hazard	Occupants	
		Personnel	
	Location/Fire	Fire Bldg/ Exposures on Arrival	
		After Arrival	
		Radiation/Conduction/Convection	
	Construction	Fire Building	
		Exposures	
	Occupancy (Contents)	Fire Building	
		Exposures	
	Height	Fire Building (Front/Rear)	
		Exposures (Front/Rear)	
	Area	Fire Building/Configuration	
		Proximity of Exposures /Config.	
	Structural Collapse	Fire Building	
		Exposures	
		Collapse Zone	
		Apparatus Placement	
	Weather	Visibility	
		Temperature/Humidity	
		Wind – Direction/Velocity	
	Resource Requirement	Apparatus/Personnel/Equipment	
		Water Supply/Suppression Agent	
	Auxiliary Appliances	Fire Building Supplied	
		Exposures Supplied	
	Topography	Street Conditions	
	Explosions Back Draft	Flash Over Conditions	
	Duration of Operations	Rest - Rehab	

Incident Objectives Attainable/ Measurable/ Flexible

Examples of Incident Objectives:

- Safe Removal of All Occupants.
- Contain and Control Fire.
- Limit Damage Fire Building/Exposures.
- Other.

List Incident Objectives:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Identify alternative strategies for firefighter safety when occupant safety has been determined not to be a Primary Factor.

Activities (Strategies)

[R] Rescue
- Interior/Exterior/Both

[E] Exposure Protection
- Exposure Examination

[C/E] Confinement/Extinguishment
- Hose Line Replacement

[O] Overhaul
- Expose Hidden Fire

[V] Ventilation
- Removal of Occupants
- Fire Control

[S] Salvage
- Water – Run-Off
- Apply Covers

Forcible Entry
- Location
- Method

Special Equipment
- Imaging Cameras

List Incident Strategies	Assign To:
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Evaluate Effect of Activities (Strategies) Every 10 Minutes

Effective	Not Effective

Using the Primary Factor Chart

1. Column 1 - Primary Factors
2. Column 2 - Major Objectives
3. Column 3 - Incident Strategies
4. Column 4 - Evaluate Strategies

Step 1 - Analyze the Primary Factors

- Indicate the pertinent Primary Factors in Column 1 left side

Step 2 - Establish Major Incident Objectives

- List the Major Objectives in Column 2

Step 3 - Identify Incident Strategies

- List Incident Strategies in Column 3 (upper)

Step 4 - Assign Incident Strategies

- Indicate unit or units assigned to the Strategy in Column 3 (lower)

Step 5 - Evaluate Incident Strategies

- At 10 minute intervals re-evaluate the Primary Factors and the effects of the Strategies on these factors in Column 4

**** Always identify alternative strategies for firefighter safety when occupant safety has been determined not to be a primary factor.

Activity 2.1:

Using Size-Up to Identify Problems

Time: 20 minutes

Purpose:

To identify the appropriate critical cues and the incident problems that are identified through those cues. By having all the student groups develop from the same problem, we are more likely to achieve a complete set of critical cues and to reinforce that the cues identified are inclusive.

Materials:

- Student Activity Worksheets (provided in the student manuals)

Directions:

1. Divide students into four groups of no more than six students each. If there are more than 24 students, add additional groups.

2. Each group will be shown the same slide of a strip shopping center fire. Each group will be in the role of the first-in officer.

3. Each group will quickly determine the problems that are suggested by the critical cues and complete the checklist on the Student Activity Worksheet.

4. Each group will have a spokesperson report its findings as called upon.

Allow 10 minutes for group work and 10 minutes for reporting.

Fire-flow Formula:

$$\frac{1 \times w}{3} \times \text{percent of involvement}$$

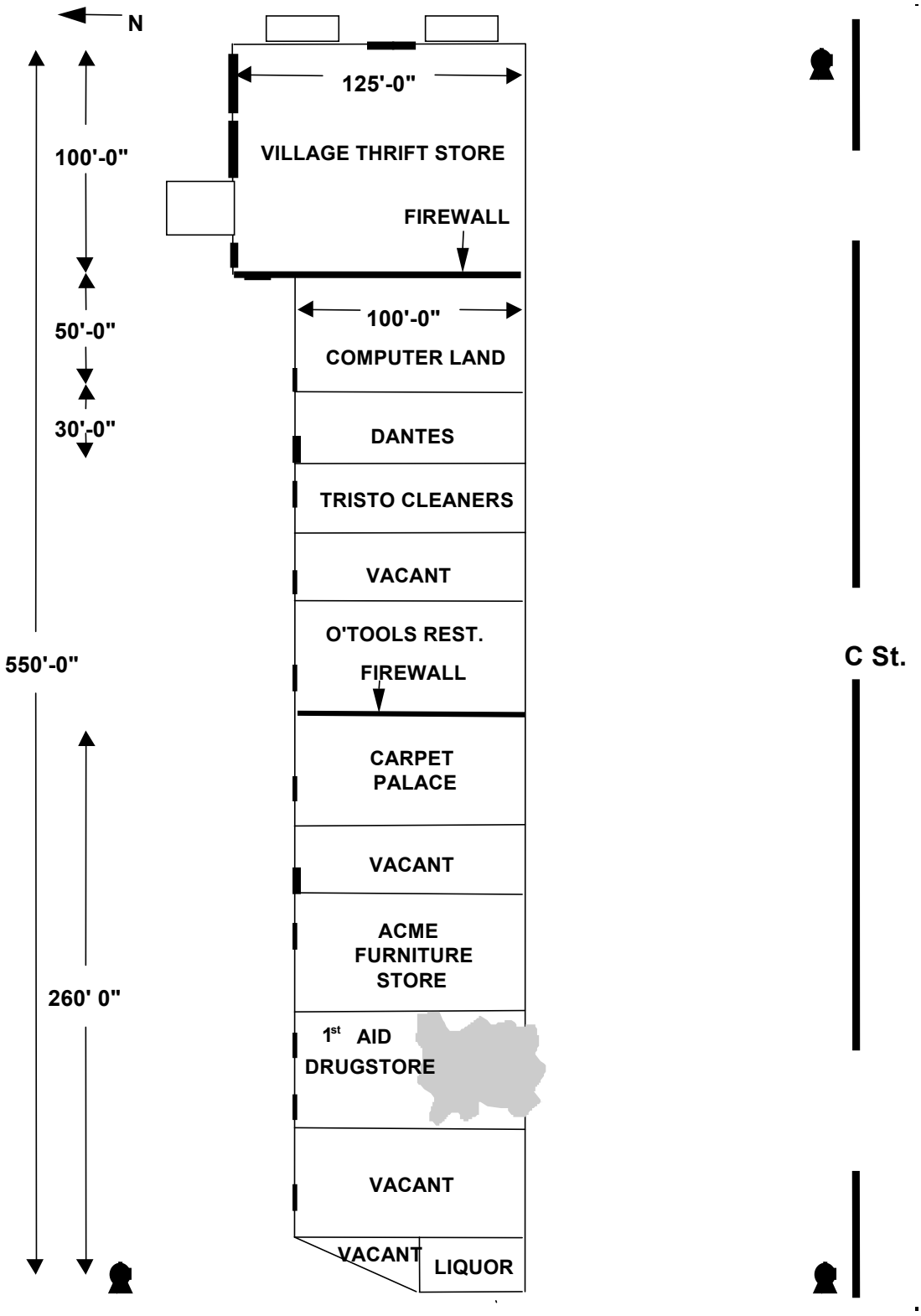
Slide 2-31:

Scenario:

The slide shows a strip shopping center. Flames showing from a drug store indicate a 25 to 50 percent involvement. The time is 1045 hours, Sunday morning. It is 50° F and calm.

Heavy fire and smoke are showing from the front of the drug store.

The drug store is adjacent to a vacant commercial unit (Side B) and a furniture store (Side D). See the following plot plan/floor plan.


N
125'-0"
100'-0"
VILLAGE THRIFT STORE
FIREWALL
50'-0"
100'-0"
COMPUTER LAND
30'-0"
DANTES
TRISTO CLEANERS
VACANT
O'TOOLS REST.
550'-0"
FIREWALL
C St.
CARPET PALACE
VACANT
ACME FURNITURE STORE
260' 0"
1st AID DRUGSTORE
VACANT
VACANT
LIQUOR

Activity 2.1:
Using Size-Up to Identify Problems
Instructor Answer Key

Groups presentations:

1. Starting with any group, have the group spokesperson report on one of the problems and tell what critical cues were present to identify the problem.

2. Conduct a round-robin discussion until all of the groups have described their answers.

3. Complete the activity by adding any additional problems not expressed by any group.

Instructor Notes:

Problems are not rescue, exposures, confinement, extinguishment, or ventilation.

Summary:

The cues provide the information that allows the IC to determine the problems at an incident. Once the problems are known, the solutions can be determined.

Checklist

Factor	Cue
Water	*2,000 gpm*
Area	*Commercial*
Life	*Low, no life problems*
Location and extent	*Fire - 25% - 50%, Side A*
Apparatus and personnel	*2 engines, 1 truck, 1 chief*
Construction	*Type III – Ordinary, assume lightweight*
Exposures	*Sides B & D*
Weather	*50°F, calm*
Auxiliary appliances	*None*
Special hazards	*None*
Height	*1 Story*
Occupancy	*Drug Store*
Time	*1045 hours, Sunday*

Problems Identified

1. *Large, ordinary construction* (determined from preplanning)
2. *Fire in drug store, 25% - 50% involved*
3. *Flashover has occurred* (visual)
4. *Fire possibly in roof assembly*
5. *Fire possibly in walls* (previous experience or training, and construction)
6. *Heavy smoke*
7. *Fire possibly in adjacent stores* (previous experience or training, and construction)
8. _____
9. _____
10. _____

Activity 2.1:
Using Size-Up to Identify Problems
Student Activity Worksheet

Time: 20 minutes

Purpose:

To identify the appropriate critical cues and the incident problems identified through those cues.

Directions:

1. You will work in small groups. The instructor will show a slide of a strip shopping center fire.

2. Each group will be in the role of the first-in officer.

3. Each group will quickly determine the problems that are suggested by the critical cues and complete the checklist on the Student Activity Worksheet.

4. Each group will have a spokesperson report its findings as called upon.

You will have 10 minutes to work on the checklist.

Scenario:

The slide shows a strip shopping center. Flames showing from a drug store indicate a 25 to 50 percent involvement. The time is 1045 hours, Sunday. It is 50° F and calm.

Heavy fire and smoke are showing from the front of the drug store.

The drug store is adjacent to a vacant commercial unit (Side B) and a furniture store (Side D). See the plot plan/floor plan (included in the student manuals).

Checklist

Factor	Cue
Water	_____
Area	_____
Life	_____
Location and extent	_____
Apparatus and personnel	_____
Construction	_____
Exposures	_____
Weather	_____
Auxiliary appliances	_____
Special hazards	_____
Height	_____
Occupancy	_____
Time	_____

Problems Identified

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

VI. Establishing Objectives and Determining Strategy (15 minutes)

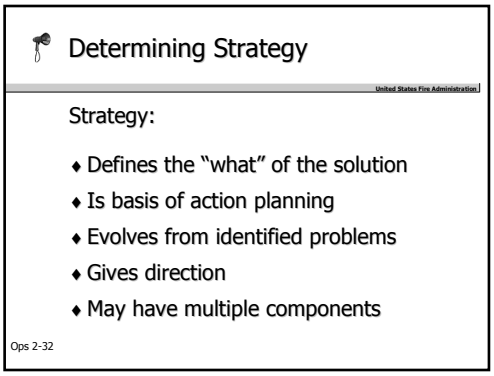
A. Objectives

- Definition: statements of guidance and direction necessary for the selection of appropriate strategy(ies) and the tactical direction of resources, and
- Objectives are achievable and measurable.

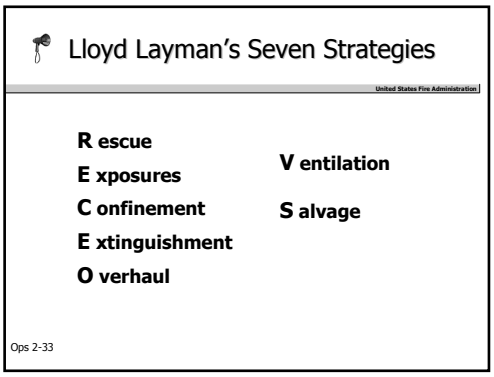
B. Strategy

- Definition: the overall plan used to control the incident; broad goals.
- Strategy defines "what" must be done to provide a solution to the problems. The determination of strategy is the basis of action planning.
- Strategy:
  - Evolves directly from the incident problems and is the beginning of the solution;
  - Gives direction to get you from where you are to where you want to be; and
  - May have multiple components to gain control of an incident.

Slide 2-32: Determining Strategy



Slide 2-33: Lloyd Layman's Seven Strategies



- Lloyd Layman's seven strategies (RECEO VS)

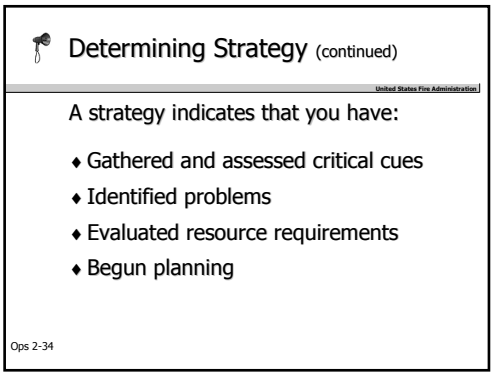
  These strategies may be used to assist in the strategy development:

  Rescue
  Exposures
  Confinement
  Extinguishment
  Overhaul
  Ventilation
  Salvage

- A well-defined strategy gives personnel an understanding of the IC's plan and helps them accomplish it.

- Only after strategy is developed can the IC begin to formulate an action plan.

Slide 2-34: Determining Strategy (continued)



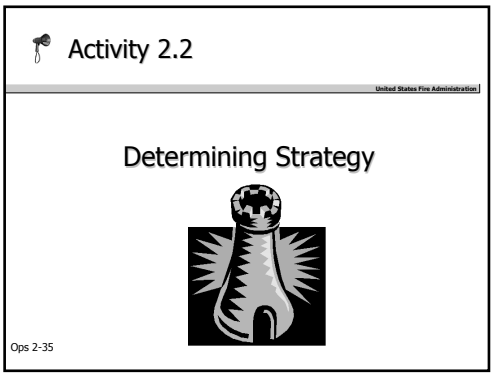
- Having a strategy indicates that:

  * Critical cues have been gathered and assessed, and problems have been identified;

  * Resource requirements and availability have been evaluated; and

  * Priorities have been established, and planning has begun.

Slide 2-35: Activity 2.2: Determining Strategy



VII. Activity 2.2: Determining Strategy (15 minutes)

Instructor Notes:

The following pages contain the instructor and student activity pages. Refer students to Activity 2.2 in their student manuals.

Activity 2.2:

Determining Strategy

Time: 15 minutes

Purpose:

To build on the information developed in Activity 2.1 and produce a list of applicable strategies for the incident.

Materials:

- Student Activity Worksheets (provided in the student manuals)

Directions:

1. Divide students into four groups of no more than six students each. If there are more than 24 students, add additional groups.

2. Each group will be shown the slide of a strip shopping center fire from Activity 2.1. Each group will be in the role of the first-in officer.

3. Review the problems identified by critical cues in Activity 2.1:

    - From preplan—the building is ordinary construction.
    - Fire is probably in the attic/roof assembly.
    - Flashover in this area has occurred (visual).
    - Fire possibly in adjacent occupancies (previous experience or training and construction).
    - Fire possibly in walls (previous experience or training and construction).

4. Each group will quickly determine the strategies that must be accomplished to solve the problems using RECEO VS as the foundation.

5. Each group will have a spokesperson report its findings as called upon.

Allow 5 minutes for group work and 10 minutes for reporting.

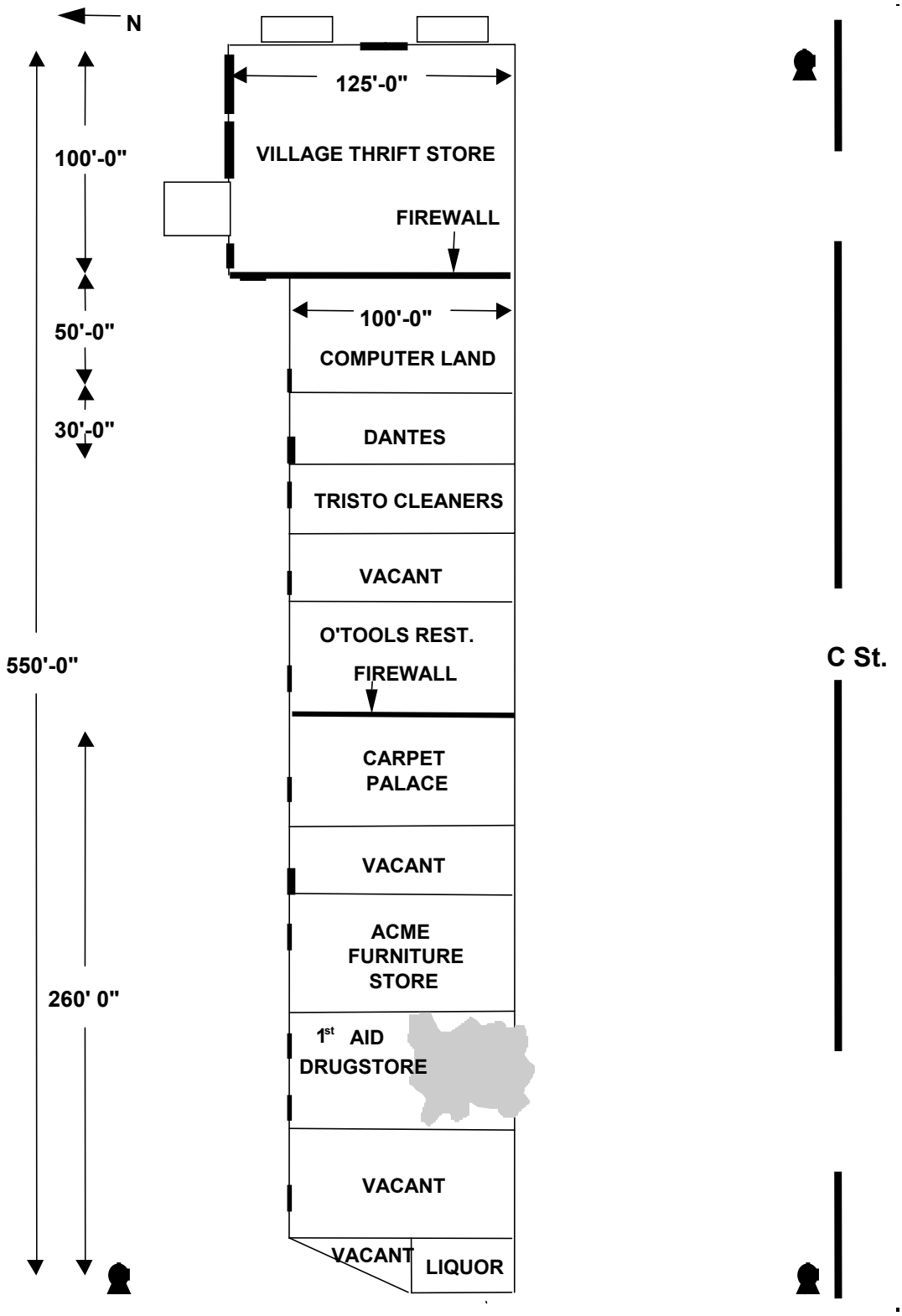
Slide 2-36:

Scenario:

The slide shows a strip shopping center. Flames showing from a drug store indicate a 25 to 50 percent involvement. The time is 1045 hours, Sunday. It is 50° F and calm.

Heavy fire and smoke are showing from the front of the drug store.

The drug store is adjacent to a vacant commercial unit (Side B) and a furniture store (Side D). See the following plot plan/floor plan.


N
125'-0"
100'-0"
VILLAGE THRIFT STORE
FIREWALL
50'-0"
100'-0"
COMPUTER LAND
30'-0"
DANTES
TRISTO CLEANERS
VACANT
O'TOOLS REST.
550'-0"
FIREWALL
C St.
CARPET PALACE
VACANT
ACME FURNITURE STORE
260' 0"
1st AID DRUGSTORE
VACANT
VACANT
LIQUOR

Activity 2.2:

Determining Strategy

Instructor Answer Key

Group Presentations:

1. Starting with any group, have the group reporter report on one of the strategies and explain which problem(s) are included in the strategy.

2. Do a round-robin discussion until all groups describe their answers.

3. Complete the activity by adding any additional strategies not expressed by any group.

Instructor Notes:

Do not allow a discussion of tactics until the next activity.

Groups report the strategies they determined from the identified problems. The strategies indicated are from the perspective of the first-in officer and will not include overhaul and salvage.

Suggested responses for applicable strategies:

- Rescue—primary search of uninvolved occupancies.
- Confinement/Extinguishment—confine the fire to the area of origin on the first floor, check for extension in walls and roof and complete extinguishment.
- Ventilation—provide vertical and horizontal ventilation that will assist with confinement and extinguishment.

Activity 2.2:

Determining Strategy

Student Activity Worksheet

Time: 15 minutes

Purpose:

To build on the information in Activity 2.1 and produce a list of applicable objectives and strategies for the incident.

Directions:

1. You will be shown a slide of the fire situation from Activity 2.1. Each group will assume the role of the first-in officer at the incident. Your group will be allowed 5 minutes to:

    - Review the problems identified in Activity 2.1:

        * From preplan—the building is ordinary construction (included in the student manuals).
        * Fire is probably in the attic/roof assembly.
        * Flashover in this area has occurred (visual).
        * Fire possibly in adjacent occupancies (previous experience or training and construction).
        * Fire possibly in walls (previous experience or training and construction); and

    - Determine the strategies that are applicable to the first-in officer. This means not concerning yourself with overhaul and salvage.

2. Select a spokesperson to report your group's findings when called on.

3. Write the applicable strategies for the incident on the following page.

Scenario:

The slide shows a strip shopping center. Flames showing from a drug store indicate a 25 to 50 percent involvement. The time is 1045 hours, Sunday. It is 50° F and calm.

Heavy fire and smoke are showing from the front of the drug store.

The drug store is adjacent to a vacant commercial unit (Side B) and a furniture store (Side D). See the following plot plan/floor plan (provided in the student manuals).

Applicable Strategies

_____

_____

_____

_____

_____

_____

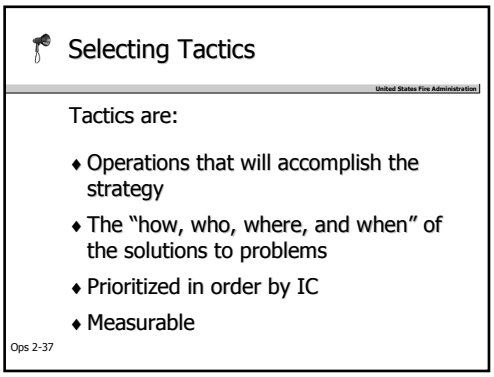
_____

_____

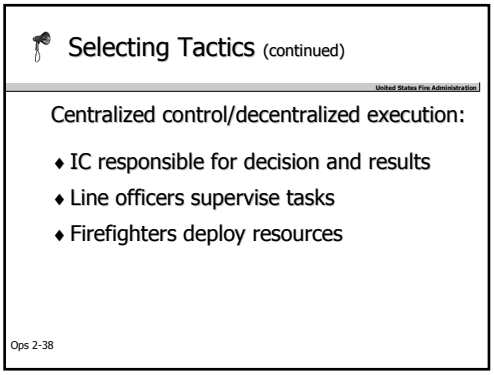
_____

_____

Slide 2-37: Selecting Tactics



Slide 2-38: Selecting Tactics (continued)



VIII. Selecting Tactics (15 minutes)

A. Definition

- Tactics are the operations that need to be completed successfully to accomplish the strategy.
- Tactics based on strategies will guide the operations required of the companies/crews.
- Tactics are the "how" of the solutions to the problems.
- The order in which tactics will be accomplished is prioritized by the IC.
- Tactics are measurable and specific and can be completed within a designated time.

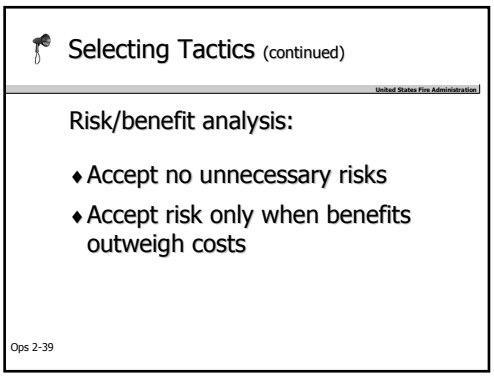
B. Effective and efficient tactical operations

- Tactical operations require that a fire officer allow for centralized control with decentralized execution.

  In other words:

  * The IC is responsible for the decision and the results;
  * The line officers will be responsible to supervise the tasks; and

Slide 2-39: Selecting Tactics (continued)



- Firefighters will deploy the resources.

- Allowing for decentralized execution frees the IC to think ahead and continue size-up.

- The chief officer must learn to trust that the tactics are being properly deployed to fit the strategies and goals. Micromanaging tactical operations will remove the ability to think strategically.

- As the responsible party, you must at this point conduct a risk/benefit analysis considering the following points:

  - Accept no unnecessary risks and

  - Accept risk only when benefits outweigh the costs.

- We risk a lot to save a lot; we risk a little to save a little.

Instructor Notes:

Ask the question:

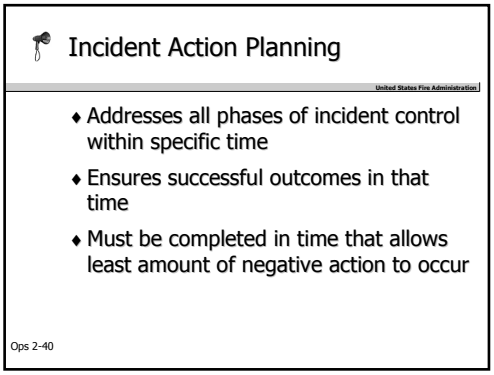
How do you develop your naturalistic decision-making capabilities to perform a risk/benefit analysis?

Suggested responses:

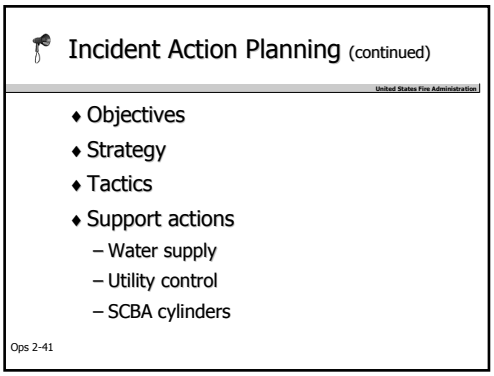
- Experience;

- Training;
- Skills, Knowledge, and Abilities (SKAs); and
- Interaction with other firefighters.

Slide 2-40: Incident Action Planning



Slide 2-41: Incident Action Planning (continued)



IX. Incident Action Planning (10 minutes)

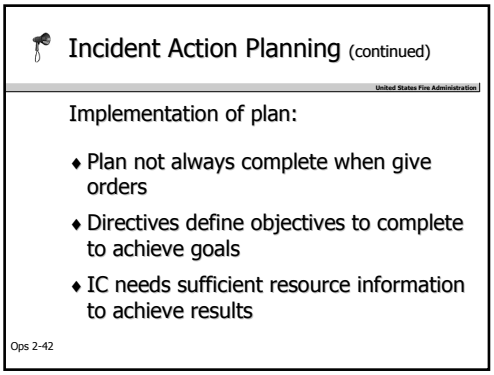
A. Organized course of events

- Incident action planning ensures an organized course of events that addresses all phases of incident control within a specific time.
- Action planning is necessary to effect successful outcomes, especially in emergency operations, in a timely manner.
- Action planning must be completed in a timeframe that allows the least amount of negative action to continue.

B. Plan—objectives, strategies, tactics, and support actions

- Strategies are broad in nature and define what has to be done.
- Tactics are selected by the IC or the Operations Section Chief.
- Tactics are the operations that need to be completed in order to accomplish the strategy. They are:

Slide 2-42: Incident Action Planning (continued)



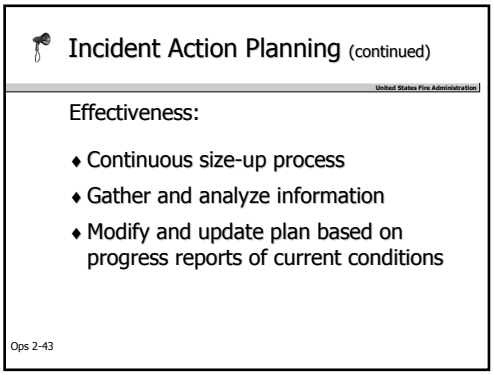
- Signposts along the path to where you want to go;
- Answers to "how" and "where;" and
- Measurable both in time and in performance.

- Support actions are those actions necessary to make the plan operable (for example, water supply, utility control, and SCBA cylinder fillings).

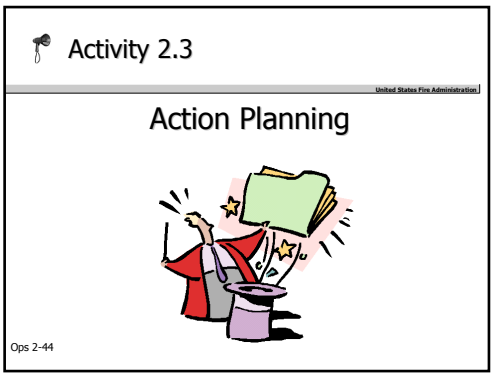
C. Implementation

- Once the IAP is developed, the IC may start issuing directives and committing resources.
- Action plans are not necessarily completed before orders are given.
- Directives define objectives that must be completed to achieve the action plan goals.
- The IC needs sufficient resource information to achieve positive results effectively.

Slide 2-43: Incident Action Planning (continued)



Slide 2-44: Activity 2.3: Action Planning



D. Effectiveness

- Information must be gathered and analyzed.
- Modification and updating may be done to improve the effectiveness of the plan.
- Ongoing progress reporting by operational or management units allows the action plan to be modified based on current conditions. This process is part of the continuing size-up process.

X. Activity 2.3: Action Planning (30 minutes)

Instructor Notes:

The following pages contain the instructor and student activity pages. Refer students to Activity 2.3 in their student manuals.

Activity 2.3:

Action Planning

Time: 30 minutes

Purpose:

To build on the information developed in Activities 2.1 and 2.2 and produce appropriate tactics for the strategies selected in Activity 2.2.

Materials:

- Student Activity Worksheets (included in student manuals)

Directions:

1. Divide students into four groups of no more than six students each. If there are more than 24 students, add additional groups.

2. Show the slide of a strip shopping center fire from Activity 2.1. Each group will be in the role of the first-in officer.

3. Review the identified strategies:

   - **Rescue**—do a primary search of the other uninvolved occupancies.
   - **Confinement/Extinguishment—**confine the fire to the area of origin, check for extension in walls and roof, and complete extinguishment.
   - **Ventilation—**provide vertical and horizontal ventilation that will assist with confinement and extinguishment.

4. Each group will **quickly** determine the tactics that must be completed to accomplish the strategies.

   Resources are:

   - Three, four-person engines,
   - One four-person truck,
   - One ambulance, and
   - One chief officer.

5. Each group will have a spokesperson report its findings as called upon. Allow 15 minutes for group work and 15 minutes for reporting.

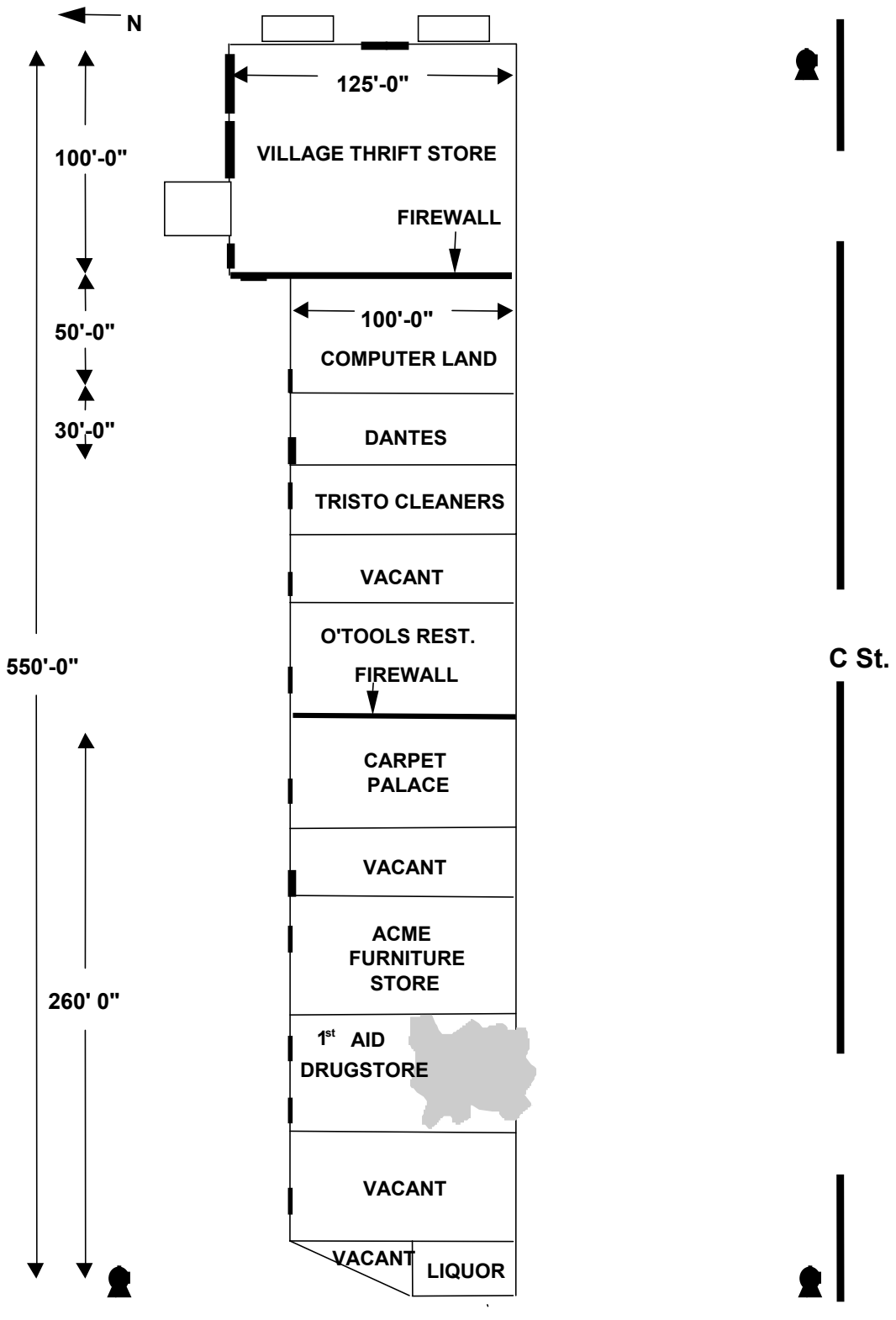
Slide 2-45:

Scenario:

The slide shows a strip shopping center. Flames showing from a drug store indicate a 25 to 50 percent involvement. The time is 1045 hours, Sunday. It is 50° F and calm.

Heavy fire and smoke are showing from the front of the drug store.

The drug store is adjacent to a vacant commercial unit (Side B) and a furniture store (Side D). See the following plot plan/floor plan. (Plot plans are provide in the student manuals.)


N
125'-0"
100'-0"
VILLAGE THRIFT STORE
FIREWALL
50'-0"
100'-0"
COMPUTER LAND
30'-0"
DANTES
TRISTO CLEANERS
VACANT
O'TOOLS REST.
550'-0"
FIREWALL
C St.
CARPET PALACE
VACANT
ACME FURNITURE STORE
260' 0"
1st AID DRUGSTORE
VACANT
VACANT
LIQUOR

Activity 2.3:
Action Planning
Instructor Answer Key

Group presentations:

1. Starting with any group, have the group spokesperson report on one of the strategies and the accompanying tactics.

2. Discuss each group's tactics with the class.

3. Do a round-robin having other groups report on a strategy-tactics set.

Suggested responses:

Strategy 1: Rescue

Tactic 1: Assign firefighters in Exposure D and Exposure B the primary search of those occupancies.
Tactic 2: Establish RIC.

Strategy 2: Confinement/Extinguishment

Tactic: Assign three companies with hose lines in Exposure D and then three companies with hose lines in Exposure B. Master stream on the original fire occupancy with additional hose lines to follow.

Strategy 2: Ventilation

Tactic: Vertically ventilate the rear of the fire occupancy or the occupancy on the Bravo side. Horizontally ventilate the fire occupancy and the adjacent occupancies. Open rear doors from the interior; forcing them takes too much time.

Activity 2.3:

Action Planning

Student Activity Worksheet

Time: 30 minutes

Purpose:

To build on the information developed in Activities 2.1 and 2.2 and produce appropriate tactics for the strategies selected in Activity 2.2.

Directions:

1. The instructor will show the slide of the strip shopping center fire from Activity 2.1. Each group will assume the role of the first-in officer at the incident. Your group will be allowed 15 minutes to:

    - Review the identified strategies:

        * **Rescue**—do a primary search of the other uninvolved occupancies.
        * **Confinement/Extinguishment—**confine the fire to the area of origin, check for extension in walls and roof, and complete extinguishment.
        * **Ventilation—**provide vertical and horizontal ventilation that will assist with confinement and extinguishment.

    - Quickly determine the tactics that must be completed to accomplish the strategies.

      Resources are:

        * Three, four-person engines,
        * One four-person truck,
        * One ambulance, and
        * One chief officer.

2. Select a spokesperson to report your group's findings when called on.

3. Write your group's strategies and tactics on the page provided.

Scenario:

The slide shows a strip shopping center. Flames showing from a drug store indicate a 25 to 50 percent involvement. The time is 1045 hours, Sunday. It is 50° F and calm.

Heavy fire and smoke are showing from the front of the drug store.

The drug store is adjacent to a vacant commercial unit (Side B) and a furniture store (Side D). See the following plot plan/floor plan (included in student manuals).

Strategy 1: _____

Tactic: _____

_____

_____

_____

Strategy 2: _____

Tactic: _____

_____

_____

_____

Strategy 2: _____

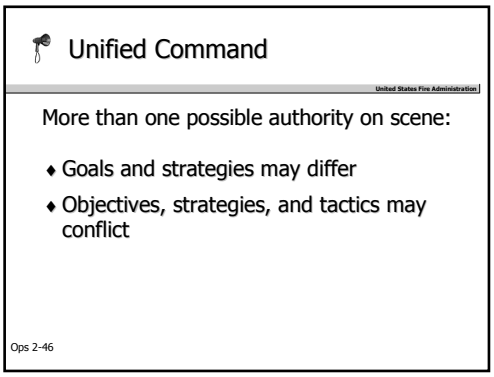
Tactic: _____

_____

_____

_____

Slide 2-46: Unified Command



XI. Unified Incident Command Strategy (25 minutes)

A. Authority

- A critical point that must be made concerning your role in decision-making is that you cannot expect to be the only responsible authority on the scene.

- The goals and strategies of fire officers might differ from other emergency responders.

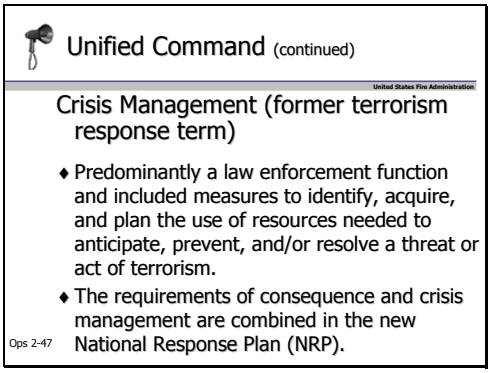
- The reality to understand is that the fire service does not always work within a vacuum.

- During incidents that require multi-agency and multiple disciplinary responses, the chief officer may assume that:

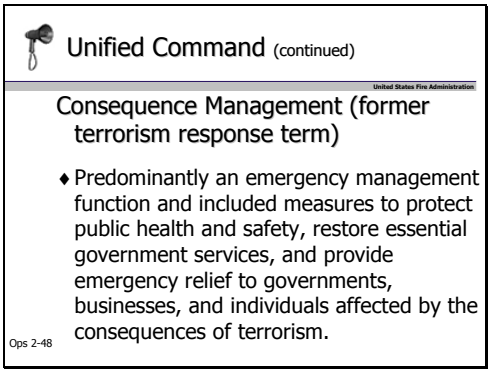
  * Other size-up considerations are occurring simultaneously and from a different perspective; and

  * Therefore, objectives, strategies, and tactical operations might conflict.

Slide 2-47: Unified Command (continued)



Slide 2-48: Unified Command (continued)



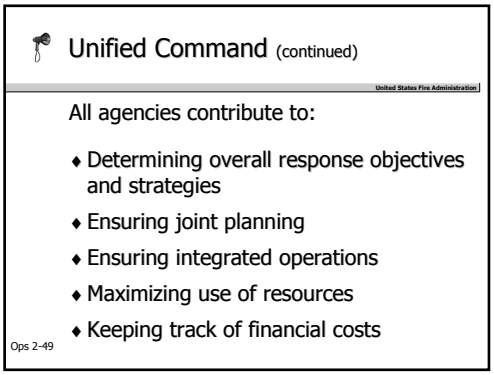
B. Special note on terrorist incidents

Consequence management and crisis management are old terms no longer supported in the National Response Plan (NRP). Although the requirements of these functions continue to be performed in response to terrorist incidents, they are combined in the NRP that superceded the Federal Response Plan (more on this in Module 12).

- Crisis management - predominantly a law enforcement function and included measures to identify, acquire, and plan the use of resources needed to anticipate, prevent, and/or resolve a threat or act of terrorism.

- Consequence management - predominantly an emergency management function and included measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the consequences of terrorism.

Slide 2-49: Unified Command (continued)



C. Unified incident command rationale

- Unified incident command rationale and concept arise from a need that is created by incidents that have no regard for jurisdictional or functional boundaries

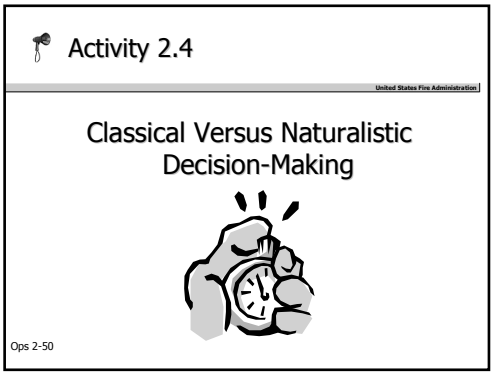
Instructor Notes:

Ask students to give examples of personal experiences with unified command.

- All agencies with a stake in the operation, and the requirement and expectation of the public to make decisions in their best interest, will have the opportunity to contribute to the process of:
  - Determining overall response objectives and strategies,
  - Ensuring joint planning,
  - Ensuring integrated operations are conducted,
  - Maximizing use of assigned resources, and
  - Keeping track of financial costs.

- Unified incident command:
  - Facilitates consensus decision-making by limiting the amount of time spent arguing over who is in charge;
  - Focuses decision-makers on objectives that balanced specific employee safety concerns with public need; and
  - Requires that the fire officer interject his or her identified problems, objectives, and strategies into a unified set of goals, for example:
    - Advanced life support may not begin until victims can be extricated to a safe location, or
    - Firefighters might not be able to rescue a victim until law enforcement officers can render a facility safe for entry.

Slide 2-50: Activity 2.4: Classical Versus Naturalistic Decision-Making



XII. Activity 2.4: Classical Versus Naturalistic Decision-Making (20 minutes)

Instructor Notes:

The following pages contain the instructor and student activity pages. Refer students to Activity 2.4 in their student manuals.

Activity 2.4:

Classical Versus Naturalistic Decision-Making

Time: 20 minutes

Purpose:

To show the students that they use naturalistic decision-making on familiar incidents where they have a relatively good understanding of the cues, and that they must use classical decision-making on an incident where they have a poor understanding of the cues.

Materials:

- Clock or watch with second hand
- Student Activity Worksheets (provided in the student manuals)

Directions:

This will be an individual activity.

1. Show the students a slide of a strip shopping center fire for no more than 5 seconds.

Slide 2-51:

2. Ask the students to quickly write the orders they would give to three engines, one truck, and one ambulance to initiate tactical operations.

3. Instruct the students to start writing within 2 seconds of the slide appearing and be finished writing within 12 seconds.

4. Show the students a second slide of an incident for no more than 5 seconds.

Slide 2-53

5. Repeat steps 2 and 3.

6. Lead a short discussion on the knowledge differences and decision-making methodology required in each situation.

Instructor Notes:

Emphasize that it is evident that naturalistic decision-making is the most effective method for making decisions in emergencies. However, when previous experience, whether actual or simulated, is lacking, an individual must resort to the classical method to make decisions.

Activity 2.4:

Classical Versus Naturalistic Decision-Making

Student Activity Worksheet

Time: 20 minutes

Purpose:

To show you that you use naturalistic decision-making on familiar incidents where you have a relatively good understanding of the cues and that you must use classical decision-making on an incident where you have a poor understanding of the cues.

Directions:

1. You will be shown a slide of an incident. Working individually, without any discussion, you will:

    - Look at the slide for no more than 5 seconds; and
    - After 5 seconds, immediately begin to write the tactical orders that you would issue to three engines, one truck, and one ambulance company for this incident.

2. You will be shown a second slide of an incident. Working individually, without any discussion, you will:

    - Look at the slide for no more than 5 seconds; and
    - After 2 seconds, immediately begin to write the tactical orders that you would issue to three engines, one truck, and one ambulance company for this incident.

3. The instructor will lead a short discussion on the methodology and the tactical order results.

4. Write tactical orders for the scenarios on the following page.

Tactical orders for scenario one:

_____

_____

_____

_____

_____

_____

_____

_____

Tactical orders for scenario two:

_____

_____

_____

_____

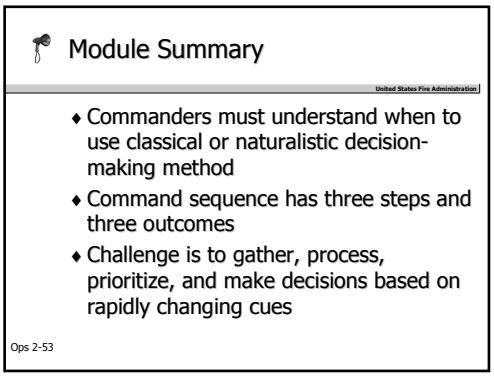
_____

_____

_____

_____

Slide 2-53: Module Summary



XIII. Module Summary (10 minutes)

Instructor Notes:

Briefly summarize the module and provide an opportunity for student questions and comments.

- There are two types of incident scene decision-making—classical and naturalistic. Commanders must understand when each is the preferred method.
- The command sequence has three steps with three outcomes.
- Chief officers must consider what they intuitively know about a situation. The challenge is to gather, process, prioritize, and make decisions based on rapidly changing cues.

MODULE 3

MODULE 3

INCIDENT ACTION PLAN (IAP)/PLANNING

MODULE 3:

INCIDENT ACTION PLAN (IAP)/PLANNING

Terminal Objective

After completing Module 3, students will be able to develop an Incident Action Plan (IAP) for a planned event or possible incident and an unexpected incident.

Enabling Objectives

Students will:

- Identify units within the planning section;
- Identify the roles and responsibilities within each unit;
- Develop a pre-incident action plan for a major disaster (hurricane, earthquake, tornado, and terrorist incident); and
- Role-play to develop an IAP for a major incident, conduct a planning meeting, and operations briefing.

Requirements

Facility

Classroom with tables

Materials

- COTC Operations Instructor Guide
- COTC Operations Student Manual
- PowerPoint® slides

Equipment

- Computer
- LCD projector

- One portable screen or classroom equipped with screen
- Chalkboard/wipeboard
- Easel pads with markers

References

- Student Manual

Instructor Guidelines

This course is intended for a third level of management, the battalion chief or newly promoted chief officer, in a typical emergency services organization. The newly promoted chief officer will think in terms of strategy, as opposed to tactics, on an emergency scene. The officer will need a good, basic understanding of tactics as they play into strategic decisions, but will focus on strategic decisions. To this end, it is recommended that students complete Modules 1 through 3 (Application of the Incident Command System [ICS], Incident Command Decision-Making, and Incident Action Plan [IAP]/Planning) before enrolling in any of the simulation exercise modules.

The simulations in this course are designed to provide opportunities for the newly promoted chief officers to develop their skills as incident commanders at emergencies that require more resources than “normal” first-alarm, initial attacks in their communities. This simulation methodology allows the students to transition from the tactical perspective of a company officer to a strategic perspective of a chief officer who makes command level decisions based on strategic objectives required of an incident commander at a major target hazard incident.

The officers attending this course should be familiar with the target hazards found in their communities. Some of these hazards are significant and are known as

target hazards. Target hazards are defined as incidents that:

- Overload fire equipment and personnel resources;
- Involve atypical hazards;
- Produce a significant negative impact on the community;
- Require technical advice for effective strategy development; and
- May initiate multi-agency involvement.

The most serious of these target hazards, for example, a major commercial or high-rise fire, can quickly stretch the capacity of the fire department's resources.

The students should rotate through the various command and general staff positions to see the responsibilities of the incident commander as individual components. The instructor would normally divide the class into groups of six to eight students, assigning each student a position on the Incident Management Team (IMT). An alternate method is to assign more experienced students to the IMT positions and assign other students in deputy or assistant roles, which allows them to shadow their more experienced peers. As the course develops, the instructor may begin to assign additional responsibilities to the command and general staff, including the development of the IAP. The ICS forms needed to complete the IAP are included in the appendix of each simulation exercise module.

The instructor should carefully read the instructor guide and the student manual and become familiar with the content before presenting the course.

Review and be familiar with the terminology used in the FIRESCOPE ICS 420-1 *Field Operations Guide* (green pocket guide). The guide is included as an addendum to the Operations course.

Before beginning this unit, copy Table 3-2, Planning Meeting Checklist, onto easel pad paper and post it in a visible area of the classroom.

Methodology

This module uses lecture, discussion, and activities.

Outline

I. Objectives and Overview ..... 5 minutes
II. The Planning Section—Overview ..... 30 minutes
III. The Planning Process ..... 75 minutes
IV. The Incident Action (IAP) Cycle ..... 105 minutes
V. Planning for Incident Demobilization ..... 10 minutes
VI. Pre-Incident Action Plans ..... 20 minutes
VII. Activity 3.1: Pre-Incident Action Planning ..... 60 minutes
VIII. Activity 3.2: Incident Action Planning ..... 165 minutes
IX. Module Summary ..... 10 minutes
480 minutes

NFPA 1021 Standards Cross-Reference Matrix

3-6, 3-7, 4-6, 4-7

Bibliography

California FIRESCOPE. *Fire Service Field Operations Guide* (ICS 420-1). Incident Command System Publication, January 2001.

Federal National Wildfire Coordinator Group, Incident Command System, National Training Curriculum. "Organization and Staffing," *Module 7* (I-300), October 1994.

---. "Organizing For Incidents or Events," *Module 8* (I-300), October 1994.

---. "Incident Resources Management," *Module 9* (I-300), October 1994.

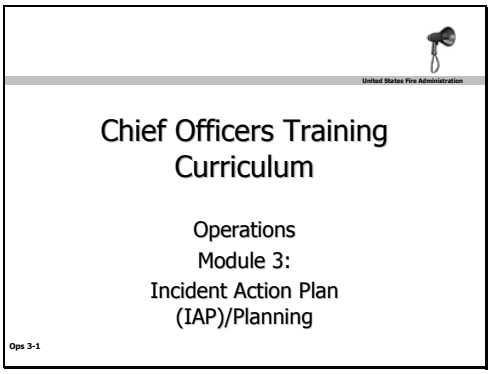
---. “Incident and Event Planning,” *Module 11* (I-300), October 1994.

---. “Major Incident Management,” *Module 14* (I-400), October 1994.

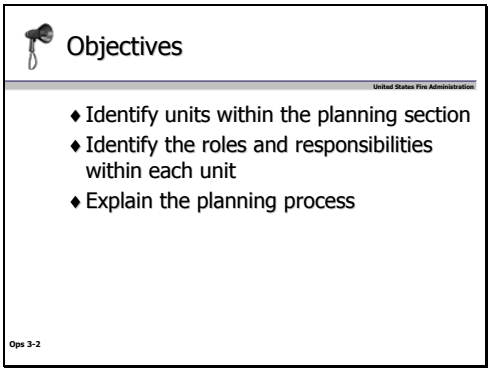
---. “ICS for Executives,” *Module 17* (I-402), October 1994.

Los Angeles County Fire Department, Incident Command System. “Operational System Description,” 15 July 1997.

Slide 3-1: Module 3, Incident Action Plan (IAP)/Planning



Slide 3-2: Objectives



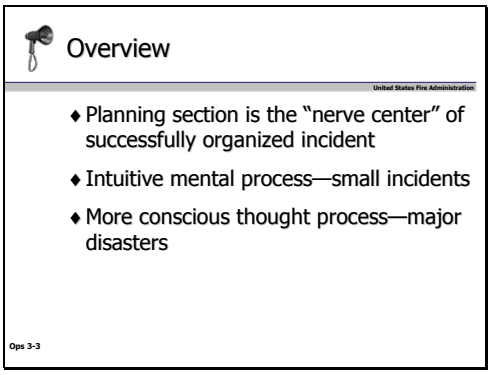
I. Objectives and Overview (5 minutes)

A. Objectives

Students will be asked to:

- Identify units within the planning section;
- Identify the roles and responsibilities within each unit;
- Develop a pre-incident action plan for a major disaster (hurricane, earthquake, tornado, and terrorist incident); and
- Role-play to develop an IAP for a major incident.

Slide 3-3: Overview



B. Overview

- All ICS organization sections (operations, planning, logistics, and finance/administration) play a major part in the overall success of managing a major disaster.

- The section that is found at the heart, or more correctly at the nerve center, of successful incident organization is the planning section.

- Every incident to which a firefighter responds to involves the planning process:

  * Sometimes this process is involved and lengthy, and

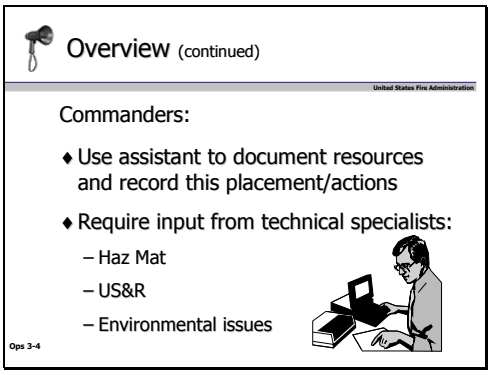
  * Sometimes it is simple and short.

- A more conscious thought process during major disasters substitutes the intuitive mental process that we often rely upon during smaller incidents.

  * District or battalion commanders still develop a mental plan and issue verbal orders during these events.

  * But they also use an aide to document responding resources and record their placement and actions.

Slide 3-4: Overview (continued)



- ∗ Information gathered by this aide is used by the Incident Commander (IC):
  - – To help make strategic and tactical decisions on the incident;
  - – For firefighter accountability; and
  - – For developing after-action reports.

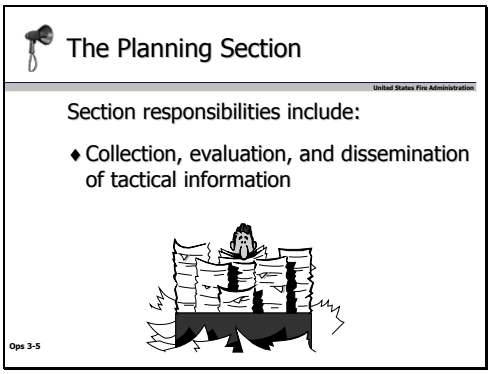
- Experienced commanders may require input from technical specialists for:
  - ∗ Haz Mat,
  - ∗ USAR, and
  - ∗ Environmental issues.

- Technical specialists (for example, haz mat technicians or structural engineers) can assist the IC in the formation of incident:
  - ∗ Objectives,
  - ∗ Strategies, and
  - ∗ Tactics.

- An IC with no staff and no written plan of action will not be able to handle any major incident situation successfully.

This is because a major incident situation requires the IC to perform tasks that are not included in normal day-to-day emergency activities.

Slide 3-5: The Planning Section



II. The Planning Section—Overview (30 minutes)

The planning section for an expanded ICS disaster is a powerful tool that can assist the IC with many functions.

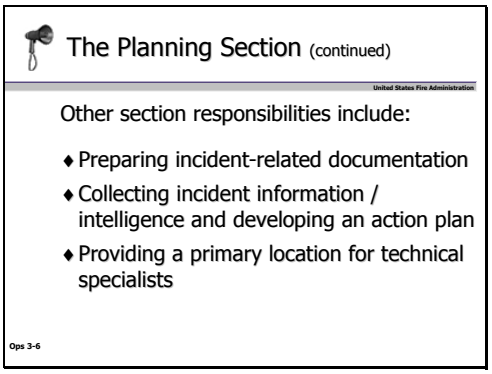
A. Section responsibilities (if established by the IC) include:

- Collection,
- Evaluation, and
- Dissemination of tactical information about the incident and the status of all assigned resources.

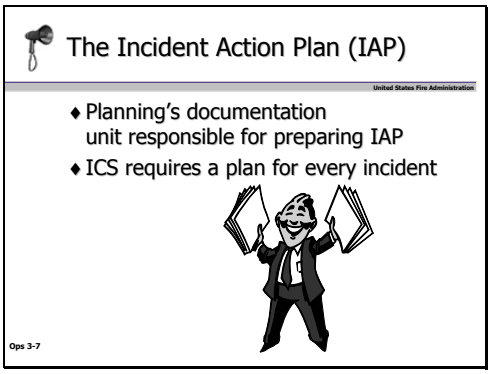
B. The planning section needs this information to:

- Understand the current situation,
- Predict probable course of incident events, and
- Prepare alternative control strategies.

Slide 3-6: The Planning Section (continued)



Slide 3-7: The Incident Action Plan



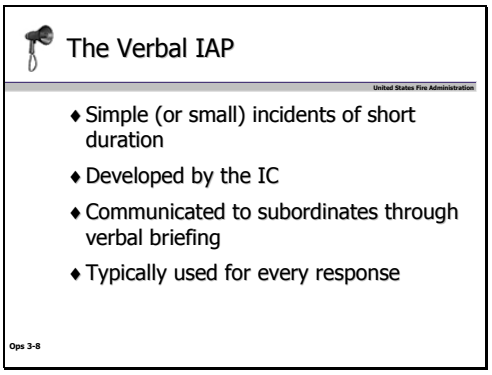
C. Other section responsibilities include:

- Preparing required incident-related documentation, including:
  - Incident maps and
  - Demobilization plan; and
- Collecting all incident information / intelligence and developing a single action plan; and
- Providing a primary location for technical specialists assigned to the incident.

D. The Incident Action Plan (IAP)

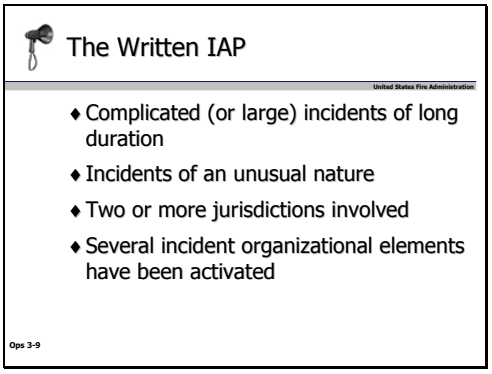
- The planning section's documentation unit is responsible for preparing this document.
- The ICS requires this plan to be used during every incident.

Slide 3-8: The Verbal IAP



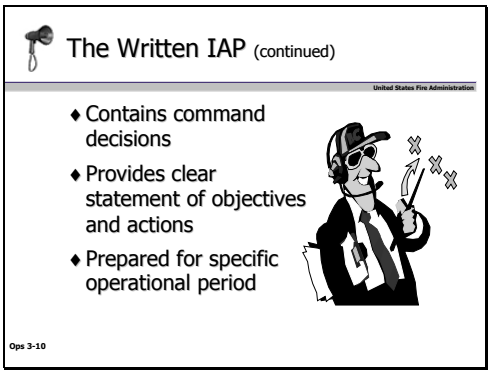
- A verbal IAP is used for simple (or small) incidents of short duration.
  - The IAP is developed by the IC and is communicated to his or her subordinates through a verbal briefing.
  - Every fire department company officer or command officer uses a verbal IAP for almost every incident to which they respond.
  - Seldom (if ever) is a written action plan required for the day-to-day EMS call or room-and-contents fire.

Slide 3-9: The Written IAP



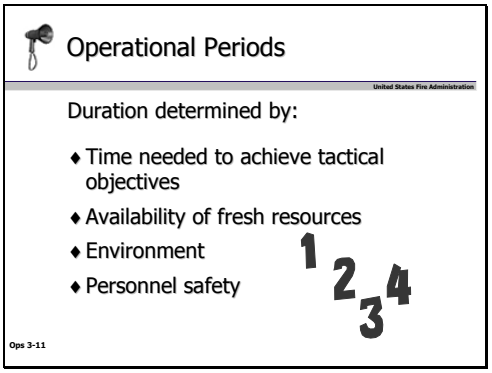
- A written IAP is used for complicated (or large) incidents of long duration, or for incidents of an unusual nature.
  - Consider a written IAP when:
    - Two or more jurisdictions are involved,
    - The incident is of long duration, or
    - Several incident organizational elements have been activate (planning, logistics, and finance sections).

Slide 3-10: The Written IAP (continued)



* A written IAP:
  - Contains command decisions,
  - Provides a clear statement of objectives and actions, and
  - Should be prepared for a specific time (referred to as an operational period).

Slide 3-11: Operational Periods

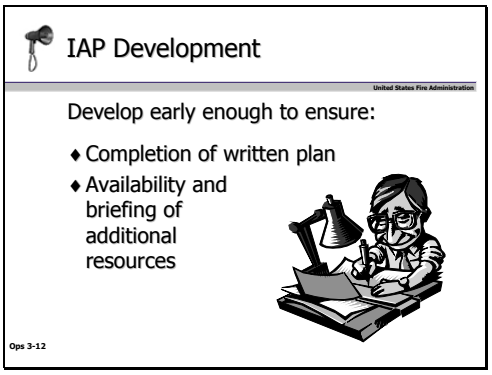


* Operational periods can be of various durations (although they usually are never longer than 24 hours or shorter than 4 hours).

  The decision as to the duration of an operational period will depend on four factors:

  - Length of time needed to achieve the tactical objectives,
  - Availability of fresh resources,
  - Environment (daylight and weather), and
  - Personnel safety.

Slide 3-12: IAP Development



- Develop the IAP far enough in advance to ensure two things:

  * Completion of the written plan and

  * Availability and briefing of additional resources (before the start of the operational period that the plan covers).

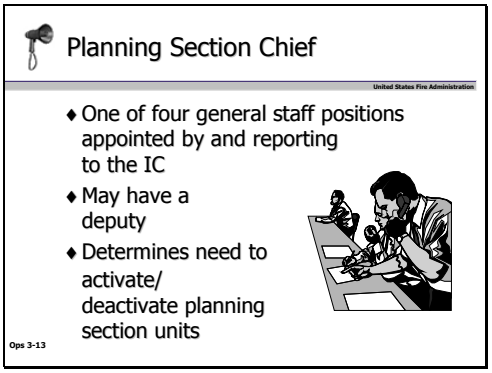
E. The IC may activate and deactivate the planning section as required.

- Sections do not have to be activated before branches, divisions, or units.

- Operational needs are the primary factor in determining what is activated.

  As an example, the IC may have a need to activate the resource unit to assist in tracking of resources, but it is not necessary to establish a planning section or assign a chief.

Slide 3-13: Planning Section Chief



F. Planning section chief

- The Planning Section Chief (PSC) is one of the four general staff positions (operations, planning, logistics, and finance/administration) that is appointed by and reports directly to the IC.

  * Each general staff position may have a deputy (or more than one), if necessary.

  * During large events, especially where multiple agencies or jurisdictions are involved, the use of deputies from other agencies greatly increases interagency coordination.

  * There are three primary reasons to designate a deputy PSC:

    – Specific tasks need to be performed (as requested by the PSC);

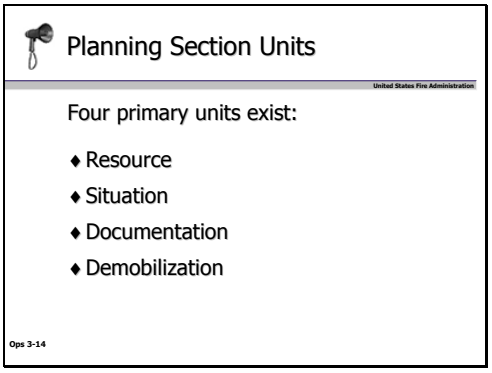
    – The planning section function needs relief (for example, someone needs to take over the next operational period); and

    – An assisting agency that may share jurisdiction or have jurisdiction in the future needs to be represented.

- Once appointed, the PSC determines the need to activate or deactivate a unit.

  If a unit is not activated, then the responsibility for the unit's duties remains with the PSC.

Slide 3-14: Planning Section Units



G. Planning Section units

- Four primary units (and the possibility of technical specialists) exist. These units are:

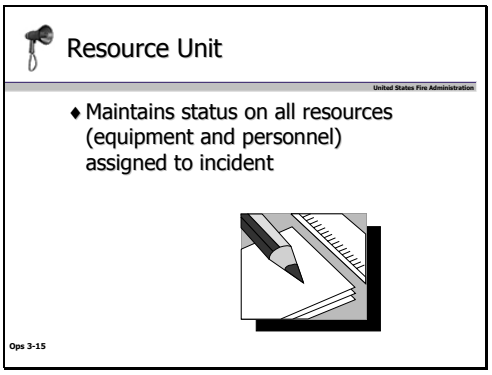
  * Resource,

  * Situation,

  * Documentation, and

  * Demobilization.

Slide 3-15: Resource Unit



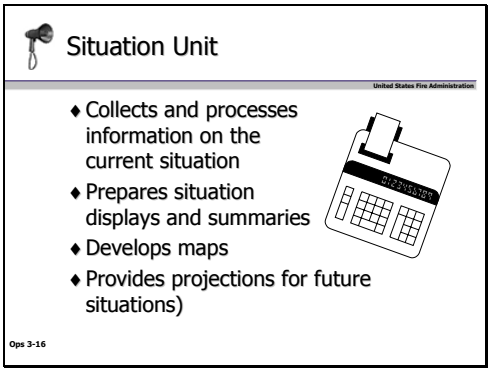
- The resource unit is responsible for maintaining the status on all resources assigned to the incident (personnel and equipment).

  The unit maintains status through:

  * Overseeing the check-in of all resources;

  * Maintaining a status-keeping system (indicating current location and status of all resources); and

Slide 3-16: Situation Unit



- ∗ Maintaining a master list of all resources (for example, key supervisory personnel, and primary and support resources).

- The situation unit is responsible for:

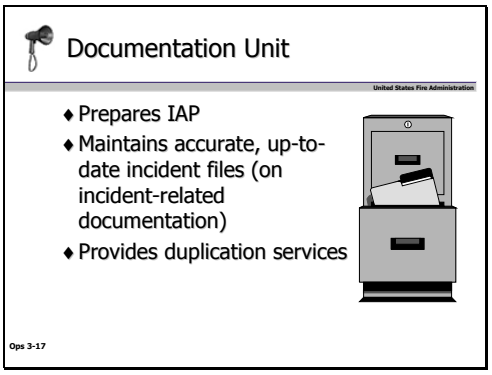
  - ∗ Collecting and processing information on the current incident situation;
  - ∗ Preparing situation displays and situation summaries;
  - ∗ Developing maps; and
  - ∗ Providing projections on future situations.

Instructor Notes:

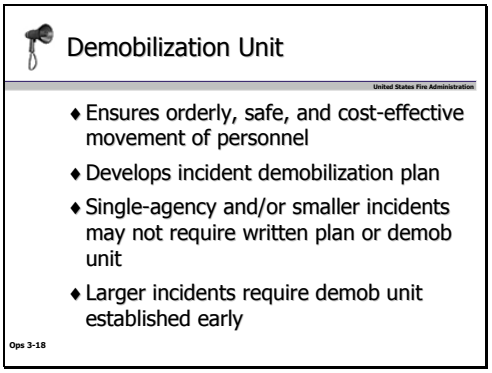
Field observers can be assigned to the situation unit to maintain accurate and timely information regarding incident situations.

These people collect and report situation information in the field.

Slide 3-17: Documentation Unit



Slide 3-18: Demobilization Unit



- The documentation unit is responsible for:
  - Preparing the IAP;
  - Maintaining accurate, up-to-date incident files (on all incident-related documentation); and
  - Providing duplication services.
- The demobilization unit is responsible for developing the incident demobilization plan.
  - During large, complex incidents, this unit assists in ensuring the orderly, safe, and cost-effective movement of resources (when their services are no longer required).
  - For single-agency and/or smaller incidents, the process of demobilization may be quite simple.

    Demobilization may not require a formal, written plan (or establishing a demobilization unit to prepare it).

Slide 3-19: Technical Specialists

- For large incidents (especially those that may involve personnel and tactical resources from several jurisdictions), establish a demobilization unit within the planning section early in the life of the incident.

- Technical specialists are advisors who have special skills. They:
  - Report initially to the planning section;
  - Work within that section;
  - Can be reassigned wherever their services are required;
  - Are often assigned to the situation unit if their experience is needed for a short time; and
  - Can have a separate unit established for them if they are needed for a long time (or if several specialists are assigned to the same task).
  - Each incident dictates its own need for technical specialists.

Instructor Notes:

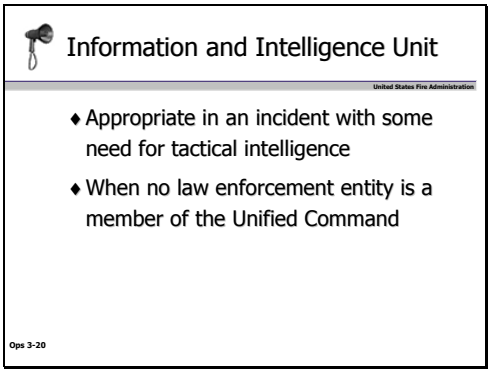
For example, if hazardous materials are a major, ongoing factor in an incident, a toxic hazards analysis unit, comprised of toxic substance specialists, may be created.

Instructor Notes:

Some examples of commonly used specialists include:

- Environmental impact specialists,
- Health hazardous materials specialists,
- Technical rescue specialists,
- Structural engineers,
- Meteorologists,
- Flood control specialists, and
- Fire behavior specialists.

Slide 3-20: Information and Intelligence Unit



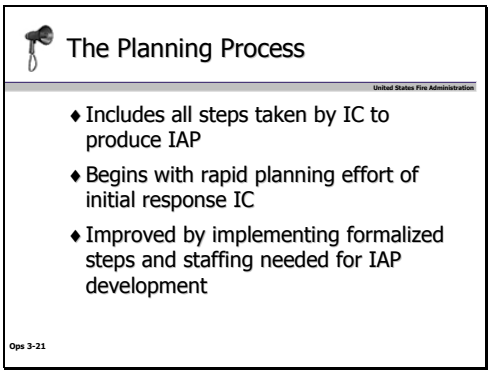
- An Information and Intelligence Unit can be established on an incident where:
  - There is some need for tactical intelligence
  - No law enforcement entity is a member of the Unified Command.

Instructor Notes:

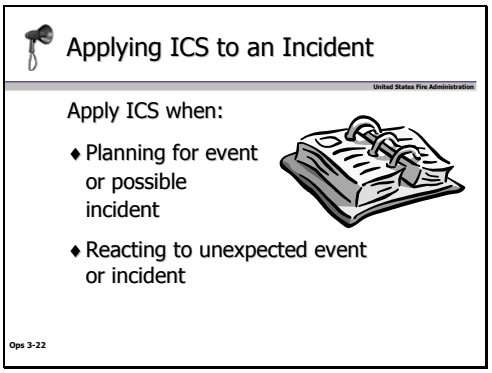
The information and intelligence function also has the responsibility for coordinating information and operational security matters with public awareness activities that fall under the responsibility of the PIO, particularly where such public awareness activities may affect information or operations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

Regardless of how it is organized – as an Officer in the Command Staff, a Branch in Operations, a General Staff Section, or a Unit in Planning - the information and intelligence function is responsible for developing, conducting, and managing information-related security plans and operations as directed by the 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.

Slide 3-21: The Planning Process



Slide 3-22: Applying ICS to an Incident



III. The Planning Process (75 minutes)

Planning is the foundation of effective incident management.

A. The planning process is an established method of strategic planning. The process:

- Includes all steps taken by an IC (and other members of the command and general staff) to produce an IAP.
- Begins with the rapid planning effort of an initial response IC.
- Can be improved by implementing formalized steps and staffing required for the development of a written IAP.

B. Applying the ICS to an incident

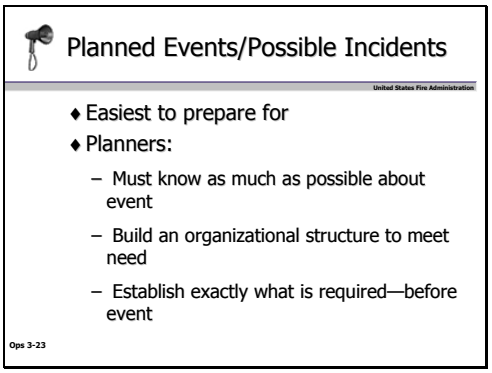
- Apply the ICS to an incident when:
  - Planning for an upcoming event or possible incident or
  - Reacting to an unexpected incident.

Instructor Notes:

Some examples of known events or possible incidents:

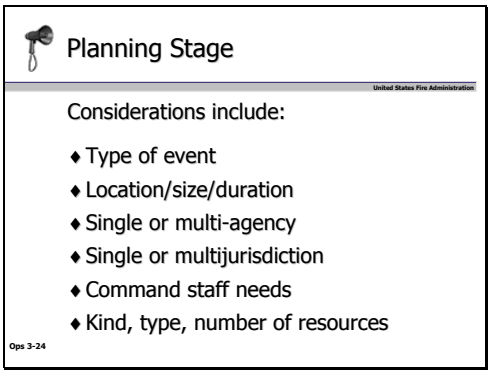
- A planned public event (for example, a major parade, concert, or sporting event);
- A major training exercise or conference;
- Hurricanes, floods, extreme weather; and
- Other incidents where advance warning would provide time for pre-incident planning.

Slide 3-23: Planned Events/Possible Incidents



- Planned upcoming event or possible incident:
  - Easiest to prepare for;
  - The planners:
    - Must know as much as possible about the upcoming event or possible incident in order to be effective;
    - Will build an organizational structure to meet incident needs; and
    - Can establish exactly what is required before the event and before any activation of the ICS.

Slide 3-24: Planning Stage



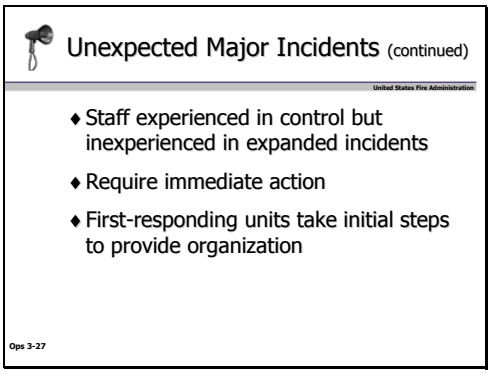
Slide 3-25: Planning Stage (continued)

* Planning stage considerations:
  - Type of event;
  - Location, size, expected duration;
  - Single or multi-agency;
  - Single or multi-jurisdiction;
  - Command staff needs (information, safety, liaison);
  - Kind, type, and number of resources required;
  - Staging areas required;
  - Other facilities required;
  - Kind and type of logistical support needs (for example, communications, food, medical, finance/administration considerations);
  - Known limitations or restrictions; and
  - Available communications.

Slide 3-26: Unexpected Major Incidents

- Unexpected major incidents:
  - Are most common;
  - Are often characterized by several important factors:
    - Extreme time pressure where many actions need to occur in a short time;
    - Require scarce and specialized resources;
    - Rapidly expanding incident (or has the potential to expand quickly);
    - Communication overload;
    - Incomplete information about the incident; and
    - On-scene staff who are experienced in control measures but inexperienced in managing expanding incidents.

Slide 3-27: Unexpected Major Incidents (continued)



* Unexpected major incidents require immediate action(s) to organize the incident and achieve effective management and control.

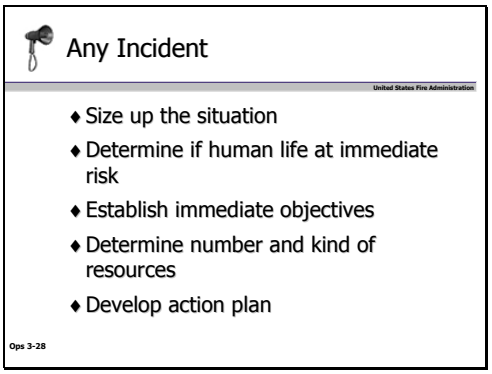
* First responding units must take initial steps to organize the incident:

  – This initial organization may seem obvious, but it is often overlooked.

  – The number of considerations often increases as the situation deteriorates and the incident grows.

- Unexpected incidents may have different characteristics and requirements, yet all are similar in how they are managed.

Slide 3-28: Any Incident



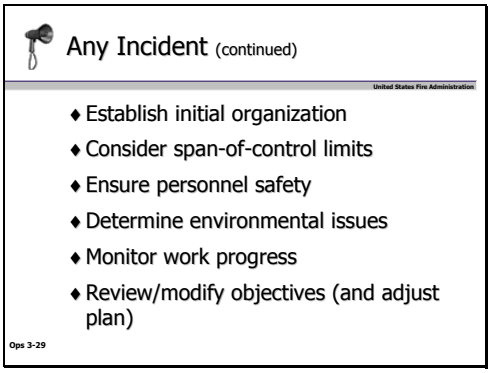
For any incident, the IC must perform the following, at minimum:

* Size up the situation;

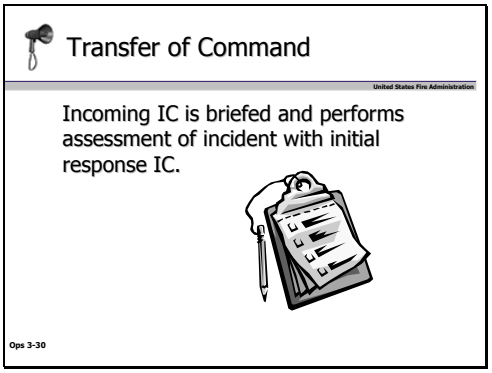
* Determine if human life is at immediate risk;

* Establish immediate objectives;

Slide 3-29: Any Incident (continued)



Slide 3-30: Transfer of Command

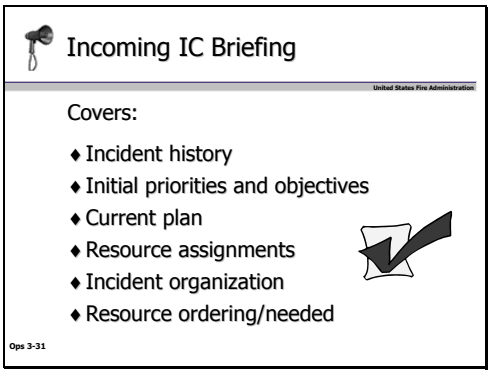


- Determine if there are enough (and the right kind of) resources on scene and/or ordered;
- Develop an action plan;
- Establish an initial organization;
- Consider if span of control is at (or will soon approach) practical limits;
- Ensure that personnel safety factors are taken into account;
- Determine if there are any environmental issues that need to be considered;
- Monitor work progress; and
- Review and modify objectives and adjust the action plan as necessary.

C. Transfer of command

- Effective assumption of command has taken place once the IC has considered the above steps, has initiated a response and the following events have occurred:

Slide 3-31: Incoming IC Briefing



* The incoming IC personally (if possible) performs an assessment of the incident situation with the initial response IC.

* The incoming IC is briefed adequately.

  The current IC must perform this briefing and should perform it face-to-face if possible.

  The briefing should cover the following information:

  – Incident history (what has happened);

  – Initial priorities and objectives;

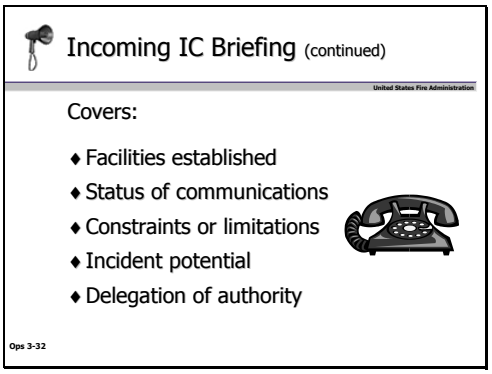
  – Current plan;

  – Resource assignments;

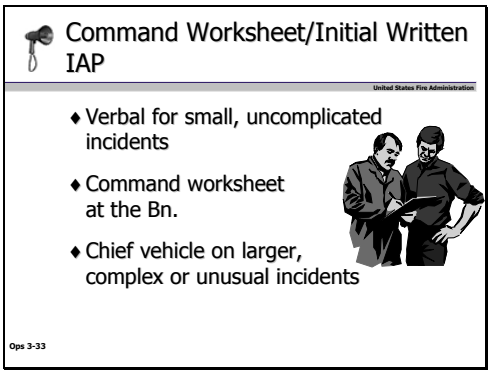
  – Incident organization;

  – Resource ordering/needed resources;

Slide 3-32: Incoming IC Briefing (continued)



Slide 3-33: Command Worksheet/The Initial Written IAP



– Facilities established;

– Status of communications;

– Constraints or limitations (for example, wilderness area, wetlands, archeological sites, and endangered species habitat);

– Incident potential; and

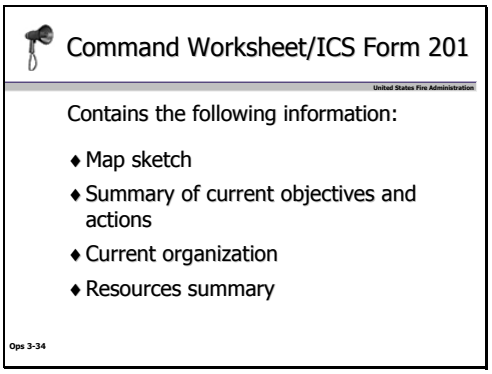
– Delegation of authority.

D. Command Worksheet/The Initial Written IAP

For small, uncomplicated incidents, the initial IAP may be delivered verbally.

For incidents that are larger, more complex, or unusual in nature, a command worksheet in the battalion vehicle is brought out and information is captured.

Slide 3-34: Command Worksheet/ICS Form 201 (continued)



At a minimum the initial command worksheet usually contains:

* Map sketch—shows the current perimeter and control lines, branch and division boundaries, and incident facilities.

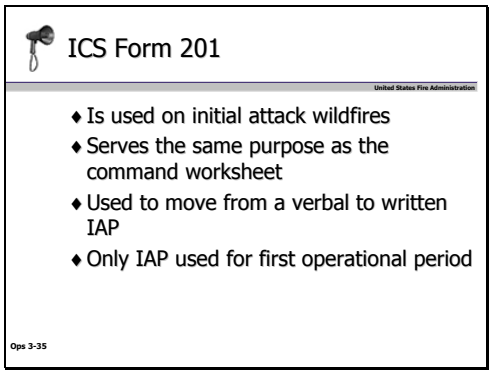
* Summary of current objectives and actions—includes initial control objectives, strategy and tactics, and any specific problem areas.

* Current organization – charts the names of the individuals assigned to each overhead position (modify the chart if necessary).

* Resources summary—lists the type and kind of resources assigned, their assignments and locations, what has been ordered, what agency the resources belong to, and the estimated time of arrival of resources already requested.

On third-alarm fires lasting just over night, the worksheet will meet the needs of the organization.

Slide 3-35: ICS Form 201



ICS Form 201

In the ICS form catalogue, ICS Form 201 is used on initial attack wildfires for the same purpose as the command worksheet.

Command worksheets or ICS Form 201 can be used to move the initial IC from a verbal plan to a written IAP and then to a expanded written IAP if required.

* These worksheets or forms are excellent tools to use during incident briefings.

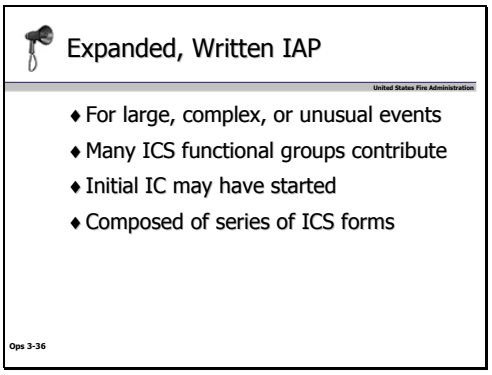
* They provide a written record of the incident.

The form is particularly valuable during the first operational period of an incident, and in many cases, it will be the only IAP used to get through the first operational period.

Instructor Notes:

Inform the students that ICS Form 201 is shown in Figures 3-2 through 3-4 in their student manuals.

Slide 3-36: Expanded, Written IAP



E. The Expanded, Written IAP

Instructor Notes:

Emphasize that the IAP is used for **extended** operations.

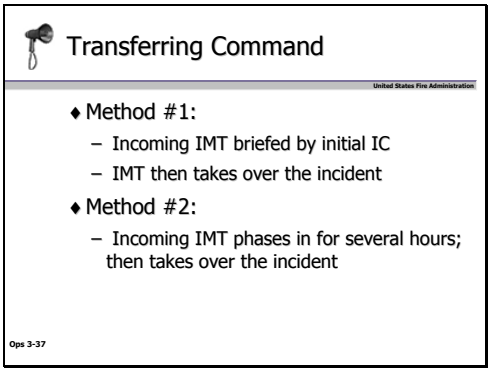
- For large, complex, or unusual incidents, the IAP produced for the second operational period (and on) needs to be a formal, written document that many ICS functional groups contribute to.
- If the incident is complex, large, or unusual, the initial IC may already have started a written IAP by the time the Incident Management Team (IMT) has arrived.
- If this is not the case, the IMT should immediately begin to capture briefing information needed to prepare an IAP.
- A series of ICS forms (ICS 202-206) can be used for this purpose.

F. Methods for transferring command

- Transition of command takes place after the briefing with the initial response IC has concluded.

- There are several ways that this transition can occur. The complexity of the incident and capabilities of the organization have a great deal to do with the method chosen.

Slide 3-37: Transferring Command



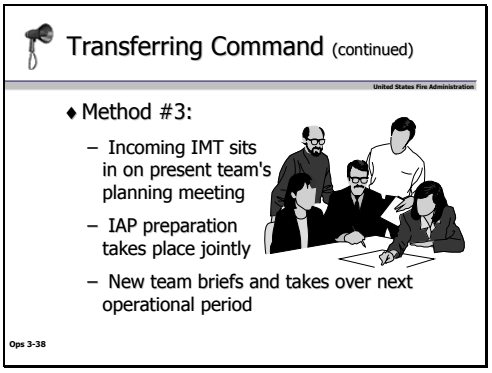
- The following methods are the usual options:

  * Method 1: The incoming IMT is briefed by the initial IC. The incoming IMT takes over the incident immediately.

  * Method 2: The incoming team phases in with its functional counterparts for several hours and then takes over the incident at a set time.

  * Method 3: The incoming team sits in on the present team's planning meeting (with the present team taking the lead). Both teams prepare the IAP together and phase in functionally. The incoming team then briefs and takes over the incident at the next operational period change.

Slide 3-38: Transferring Command (continued)



Instructor Notes:

Direct students to (and review) Figure 3-5, Chronological Events Leading to IAP Development, in their student manuals.

This figure illustrates the series of events that lead up to and determine the type of IAP to use.

This figure has been provided below for your reference.

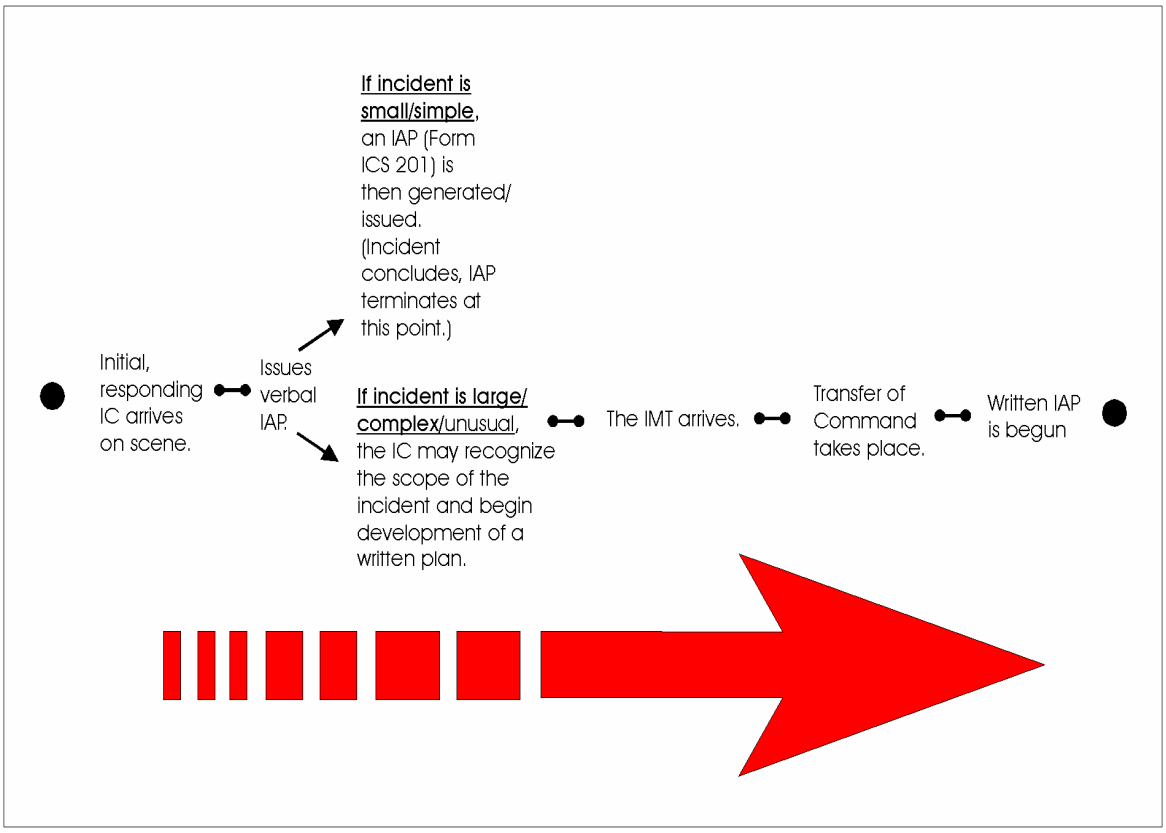


Figure 3-1: Chronological Events Leading to IAP Development

- Regardless of transition method, the IMT needs to accomplish transition of command and development of its initial action plan objectives.

Instructor Notes:

Direct students to Table 3-1, Incident Management Team Objectives During Transition of Command and Development or Initial IAP, in their student manuals. (This table is provided on the following page for your reference.)

Review the material in the table with the class.

Expectations covered in Table 3-1 (on the following page) are accomplished while the IMT is in transition and with only a command worksheet or Form 201. The expanded IAP is a time and labor intensive document to produce and usually will be developed for the second operational period (developed for the relief personnel coming on the next morning of the incident.

Table 3-1:
Incident Management Team Objectives
During Transition of Command and Development of Initial Action Plan

Team Member	Task	Subtask
Incident Commander	• Hold quick IMT briefing. • After the initial briefing, the IC will release team members to attend to their individual responsibilities and then brief the fire chief. • Provide input to Command Staff and General Staff to ensure they meet assigned expectations. • Maintain the Unit/Activity Log (ICS 214).	• Review/Set control objectives—From the briefing of the initial action IC, the IMT IC must evaluate/improve the initial control objectives. • Determine operational periods. • Evaluate/Improve strategies for the first operational period. • Review/Establish immediate priorities—The IC has the responsibility to establish the order in which the objectives and strategies will be addressed. • Determine expectations for the General Staff. • Determine needs prior to the planning meeting. • Determine time of the first planning meeting. • Review changes to the current facilities, communications, and safety plan.
Command Staff Safety Officer	• Identify safety issues, evaluate/improve Safety Plan. • Maintain Unit/Activity Log.	
Information Officer	• Determine (from the IC) limits on media releases. • Prepare a media briefing. • Maintain Unit/Activity Log. • Establish a list of assisting and cooperating agencies (and their representatives).	

Team Member	Task	Subtask
Liaison Officer	• Brief agency representatives on incident status. • Maintain Unit/Activity Log.	
Operations Section Chief	• Evaluate/Improve tactics—Work w/IC on new control objectives and strategies. • Evaluate/Improve tactics for each division and group. • Evaluate/Improve division/group/branch boundaries—Evaluate/Improve control lines, division/group and branch boundaries and assignments. • Evaluate/Improve resource/support needs—After evaluation/improvement of tactics for each division/group, establish immediate and next 12 hour needs for resources, support and supplies, and place the order with the LSC. • Evaluate/Improve incident facilities and reporting locations. The OPS, PSC, and LSC will work together to evaluate/improve and plot on a map the locations of the ICP, staging/check-in, base, camp, and drop points. • Communicate information—As needed, communicate the above information to incident personnel. • Maintain Unit/Activity Log (ICS 214).	
Logistics Section Chief	• Communications—Working with OPS, evaluate/improve communications plan and establish incident communications unit. • Medical/Rehab Plan—Evaluate/improve medical and personnel rehab plan and establish medical and Rehab units.	

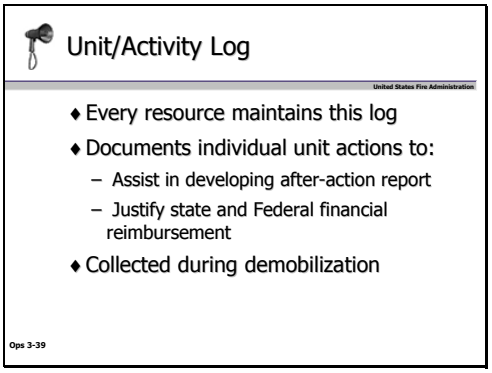
Team Member	Task	Subtask
Logistics Section Chief (cont.)	• Traffic Plan—Working with OPS, develop a traffic plan for incidents requiring one. • Initial Food Order/Plan—Obtain incident personnel total from PSC. • Develop food order and establish a plan. • Fuel Order/Mechanical—Obtain resource information from PSC and develop a fuel and mechanical repair plan. • Place resource and personnel order—The LSC will place the order based on the IAP. • Maintain the Unit/Activity Log (ICS 214).	
Planning Section Chief	• Establish check-in (with communications) at all staging areas. • Resource tracking—organize resource tracking process (on paper) to include what is assigned, available, and requested. • Situation status (SITSTAT)—on a map document incident perimeter, division/branch boundaries, and incident facilities. • Chronology of events—document chronology of events (from start to current). • Prepare IAP—the PSC is responsible for the collection of information from the various IMT elements and assembly of information into the IAP. For the current operational period it may be only a Form 201. For the second period it will be a full IAP. • Maintain Unit/Activity Log (ICS 214).	

Team Member	Task	Subtask
Finance/ Administration Section Chief	• Identify jurisdictional boundaries within the incident perimeter. • Determine existing agency agreements—determine resources for automatic or mutual aid (and financial agreement). • Determine resources/rates for assistance-for-hire. • Determine financial issues/ constraints for department and assisting agencies. • Establish procurement procedures—establish vendor list. Make contacts for anticipated procurement needs. • Maintain Unit/Activity Log (ICS 214).	

- Because needs in a municipal disaster usually will move very quickly during the first few hours, a great deal of pressure is placed on the IMT.

  All expectations need to be accomplished as soon as possible to bring organization to the incident.

Slide 3-39: Unit/Activity Log (ICS Form 214)



G. Unit/Activity Log (Figure 2: ICS Form 214)

- Part of the planning process is that every resource maintains this log.

- The log documents individual unit actions. The information collected:

  * Assists in development of after-action reports and

  * Justifies state and Federal financial reimbursement.

- The form is collected after the demobilization process.

UNIT LOG	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
4. UNIT NAME/DESIGNATORS	5. UNIT LEADER (NAME AND POSITION)	6. OPERATIONAL PERIOD	

7. PERSONNEL ROSTER ASSIGNED

NAME	ICS POSITION	HOME BASE

8. ACTIVITY LOG (CONTINUE ON REVERSE)

TIME	MAJOR EVENTS	

Figure 3-2: Activity/Unit Log (ICS Form 214)

IV. The Incident Action Plan Cycle (105 minutes)

A. Critical factors of incident operations

Critical factors often are overlooked or not given enough emphasis, resulting in:

- Poor use of resources,
- Inappropriate strategies and tactics,
- Safety problems,
- High incident costs, and
- Lower effectiveness.

B. Simple (but thorough) process

The IAP cycle can be used for both small, short-term incidents and longer, more complex ones.

This process consists of eight sequential steps.

Instructor Notes:

Inform students that this process is illustrated in Figure 3-7 of their student manuals.

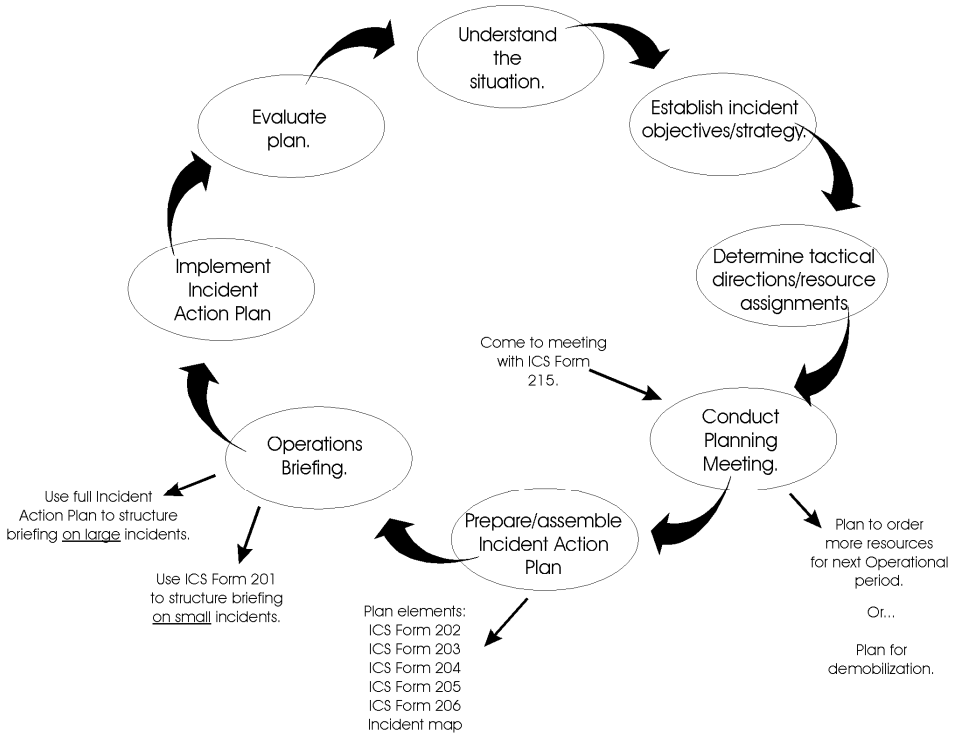
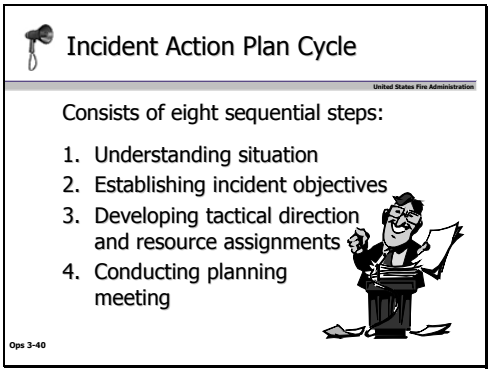
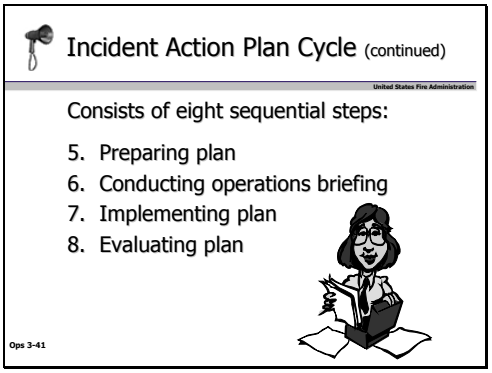


Figure 3-3: The Incident Action Plan Cycle

Slide 3-40: Incident Action Plan Cycle

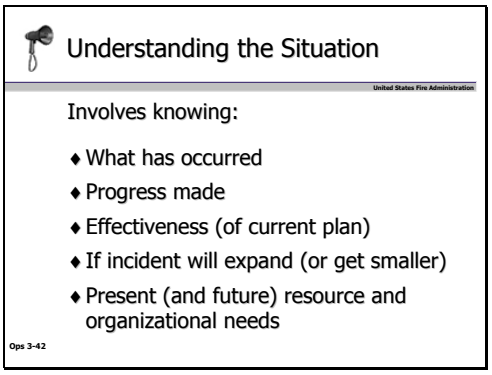


Slide 3-41: Incident Action Plan Cycle (continued)



- The first of these three steps can be done by the IC or at a formal planning meeting.
- The last steps ensure that the plan does its intended job.
- These eight steps consist of:
  1. Understanding the situation,
  2. Establishing incident objectives and strategy,
  3. Developing tactical direction and resource assignments,
  4. Conducting a planning meeting,
  5. Preparing the plan,
  6. Conducting an operations briefing,
  7. Implementing the plan, and
  8. Evaluating the plan.

Slide 3-42: Understanding the Situation



Slide 3-43: Developing Control Objectives

1. Understanding the situation

In general, you need to understand the following essential elements of information:

- What has occurred,
- Progress made,
- Effectiveness of the current plan,
- If the incident will get bigger or smaller, and
- Present and future resource and organizational needs.

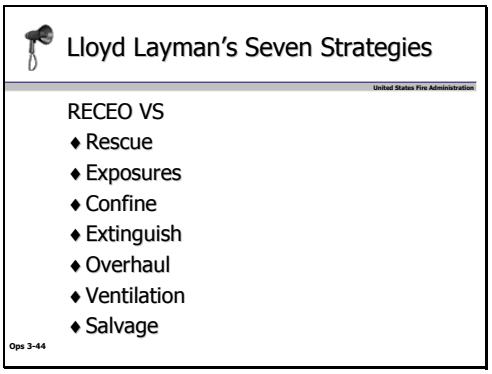
2. Establishing Incident Control Objectives

Control objectives—statements of guidance and direction necessary for the selection of appropriate control operations or work assignments for the resources on the incident.

Control objectives answer the question, "What can be accomplished when all allocated resources have been deployed effectively (based on realistic expectations)?"

Essentially, control objectives are developed using the incident priorities of: life safety, incident stabilization, environmental protection, and property conservation.

Slide 3-44: Lloyd Layman's Seven Strategies

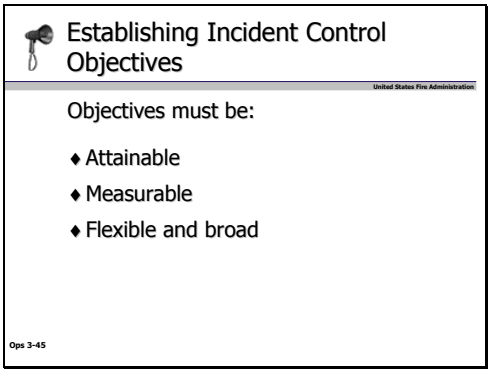


Control objectives are also based on Lloyd Layman's seven strategies (RECEO VS):

- Rescue,
- Exposures,
- Confine,
- Extinguish,
- Overhaul,
- Ventilation, and
- Salvage.

Determining incident control objectives is an essential prerequisite to developing a plan.

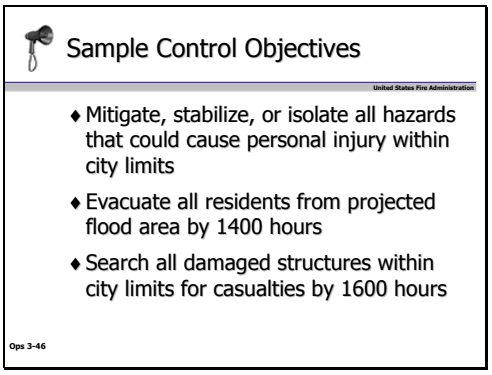
Slide 3-45: Incident Control Objectives (continued)



Incident Control Objectives must be:

- Attainable with the resources available to the agency (even though it may take several operational periods to accomplish);
- Measurable so that a final accounting can determine whether objectives were achieved; and
- Flexible and broad enough to allow for consideration of strategic and tactical alternatives.

Slide 3-46: Sample Control Objectives

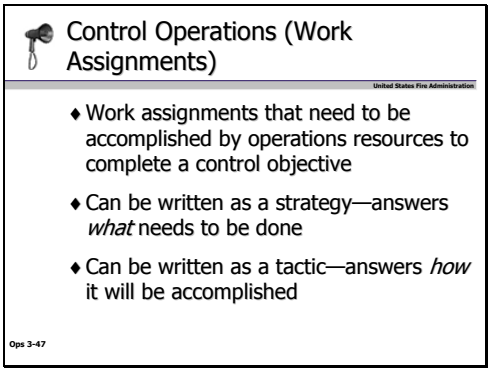


Instructor Notes:

The slide gives examples of control objectives for several different types of incidents. Each of the objectives is measurable; some are time dependent.

- It is also essential to consider alternative control objectives that may be employed (should the primary objectives fail to achieve the intended results).

Slide 3-47: Control Operations (work assignments)



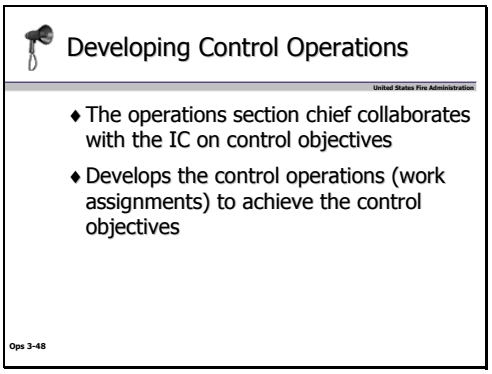
3. Control Operations (Work Assignments)

Control operations are the work assignments that should be accomplished by all operations resources working on the incident:

- May be written as strategies that direct resources on *what* needs to be done and give the resources latitude on what tactics will be used to complete the control objective.

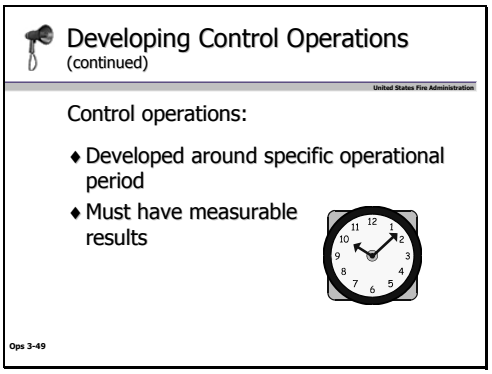
- May also be written as tactics that direct the resources on *how* the assignment will be accomplished.

Slide 3-48: Developing Control Operations



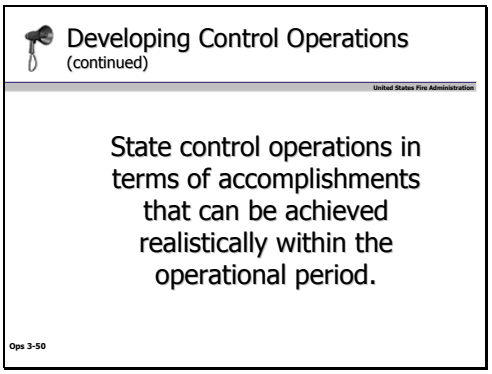
The operations section chief, after discussion with the IC on incident control objectives, will develop the control operations (work assignments).

Slide 3-49: Developing Control Operations (continued)



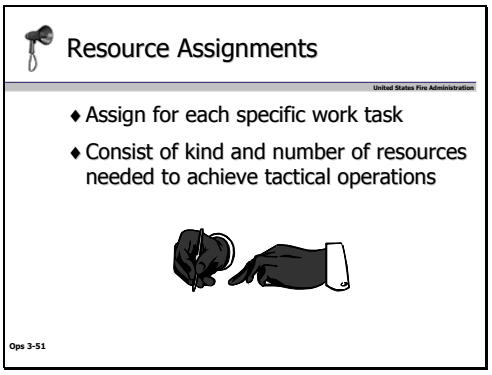
- Control operations are developed around a specific operational period and must have measurable results.
- For large incidents that may last for some time, there is a limit to what may be achieved (in terms of accomplishing an incident objective in a single operational period).

Slide 3-50: Developing Control Operations (continued)



- Therefore, state control operations in terms of accomplishments that can be realistically achieved within the time frame of an operational period.

Slide 3-51: Resource Assignments

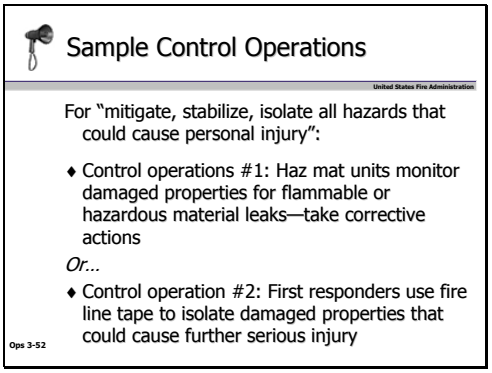


- Resource assignments will be made for each of the specific work tasks.

  These assignments will consist of the kind and number of resources needed to achieve the control operations for each operational period.

  If resources are not available for a specific control operation, then the IC may need to prioritize assignments or reassess control operations (and perhaps the overall incident control objective).

Slide 3-52: Sample Control Operations



Instructor Notes:

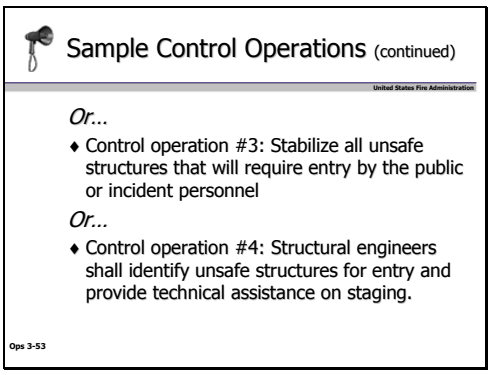
Use these examples of control operations to illustrate the work assignments needed to complete the one of the Incident control objective listed above.

- Sample control operations

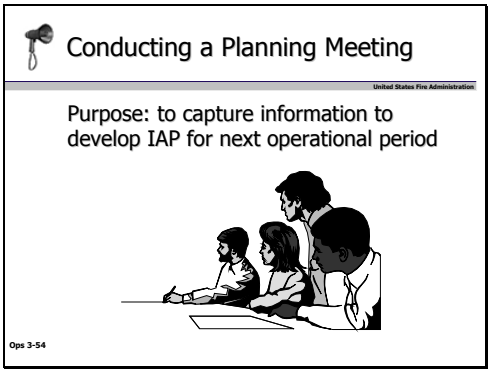
  Examples of control operations for one of the objectives listed above (mitigate, stabilize, or isolate all hazards that could cause serious personal injury within the limits of Central City:

  Again, control operations can be written as strategies (*what)* or tactics (*how*).

Slide 3-53: Sample Control Operations (continued)



Slide 3-54: Conducting a Planning Meeting

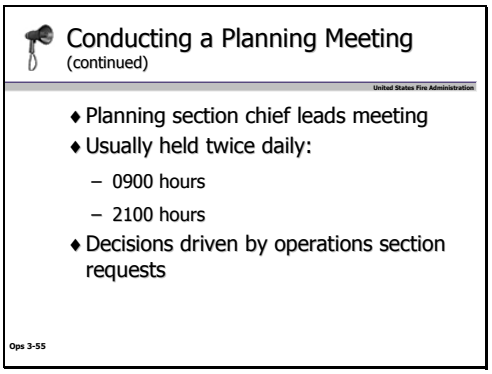


- Control Operation #1—haz mat units shall monitor all damaged properties, within their assigned area, for flammable or hazardous materials leaks and take corrective actions.
- Control Operation #2—First responders shall use fire line tape to isolate all damaged properties that could cause further serious injuries.
- Control Operation #3—Stabilize all unsafe structures that will require entry by the public or incident personnel.
- Control Operation #4—Structural engineers shall identify unsafe structures for entry and provide technical assistance on shoring.

4. Conducting a planning meeting

- Upon completing initial expectations (covered in Table 3-2, Planning Meeting Checklist), the IMT is well on its way to assembling the information needed for the first planning meeting.
- The purpose of the planning meeting is to capture information for the development of the IAP for the next operational period.

Slide 3-55: Conducting a Planning Meeting (continued)

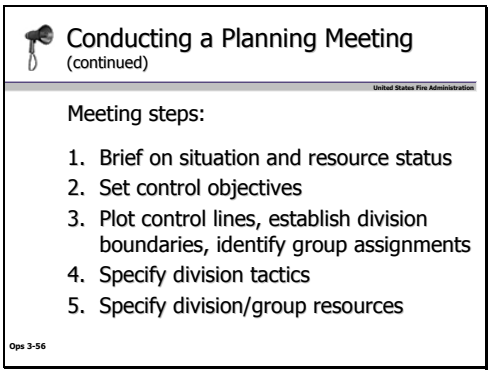


- The PSC is responsible for conducting the planning meetings.
- Following the steps listed in the Planning Meeting Checklist ensures the IC that all information needed to prepare the IAP has been captured.
- Planning meetings usually are held twice a day (at 0900 and 2100 hours).

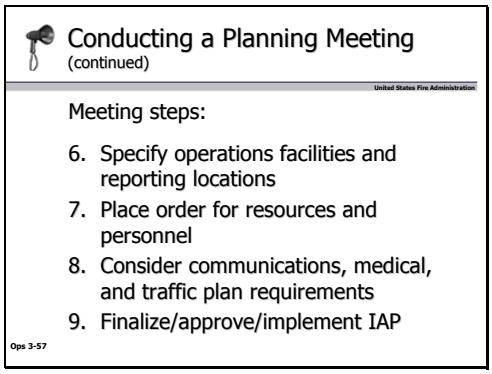
  The evening meeting is intended to start the development of an IAP for activities belonging to the next operational period.
- Every decision at the planning meeting is driven by requests received from the operations section.

  Therefore, it is extremely important for operations to arrive at the meeting knowing what its organizational needs will be for the next operational period.

Slide 3-56: Conducting a Planning Meeting (continued)



Slide 3-57: Conducting a Planning Meeting (continued)



Instructor Notes:

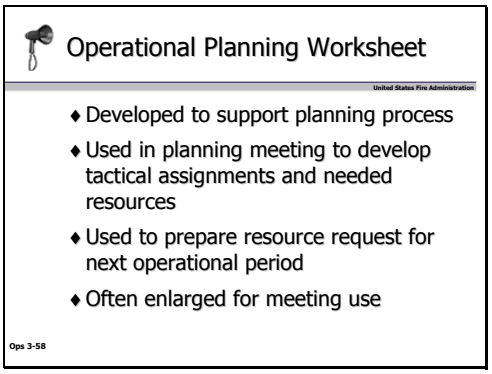
Refer students to Table 3-2, Planning Meeting Checklist, in their student manuals. The table is provided on the next page.

Table 3-2:
Planning Meeting Checklist

Task Description	Responsible Person
1. Briefing (situation and resource status).	PSC
2. Set control objectives.	IC
3. Plot control lines, establish division boundaries, identify group assignments.	OSC
4. Specify tactics for each division.	OSC
5. Specify resources needed by division/group.	OSC, PSC
6. Specify operations facilities and reporting locations—plot on map.	OSC, PSC, LSC
7. Place resource and personnel order.	LSC
8. Consider communications, medical and traffic plan requirements.	PSC, LSC
9. Finalize, approve, and implement IAP.	PSC, IC, OSC

IC = Incident Commander
PSC = Planning Section Chief
OSC = Operations Section Chief
LSC = Logistics Section Chief

Slide 3-58: Operational Planning Worksheet



- Operational Planning Worksheet (ICS Form 215) was developed to support the planning process.

Instructor Notes:

Inform students that ICS Form 215 is shown in Figure 3-8 in their student manuals.

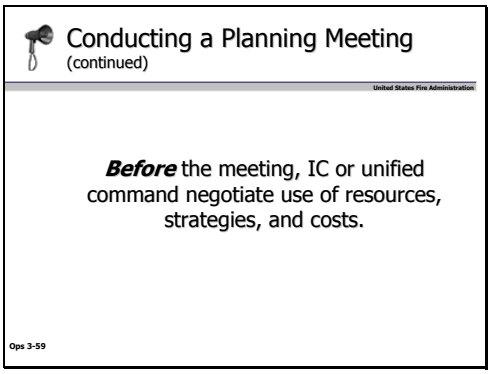
Worksheet (ICS Form 215):

* Is intended to be used in the planning meeting to develop tactical assignments and resources needed to achieve incident objectives and strategies;

* Is often enlarged so everyone at the planning meeting can see it; and

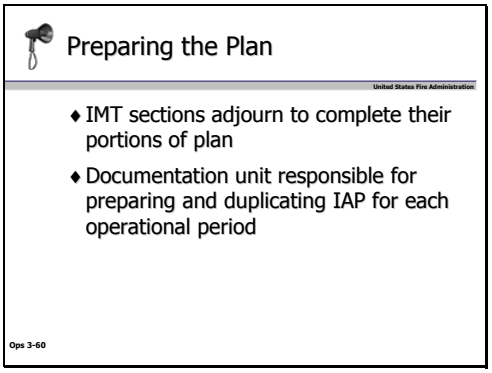
* Contains information used to prepare the resource request for the next operational period.

Slide 3-59: Conducting a Planning Meeting (continued)



- Before the planning meeting, the IC or unified command should negotiate and resolve interagency use of resources, strategies, and costs.

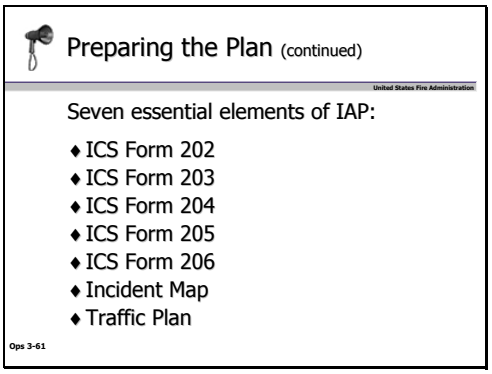
Slide 3-60: Preparing the Plan



5. Preparing the plan

- At the conclusion of a properly managed planning meeting, the IMT staff should have all the information required to develop the IAP.
- Various sections of the IMT will adjourn to complete their portion of the plan.
- The documentation unit (within the planning section) has responsibility for the preparation and duplication of the IAP.

Slide 3-61: Preparing the Plan (continued)



- Seven elements are essential to any effective written IAP:
  - ICS Form 202,
  - ICS Form 203,
  - ICS Form 204,
  - ICS Form 205,
  - ICS Form 206,
  - An incident map, and
  - A traffic plan.
- Each of these forms provides important information necessary to effectively manage a large incident.

Instructor Notes:

Refer students to Figure 3-9, IAP Toolbox, in their student manuals. Students also have copies of these ICS forms in their student manuals.

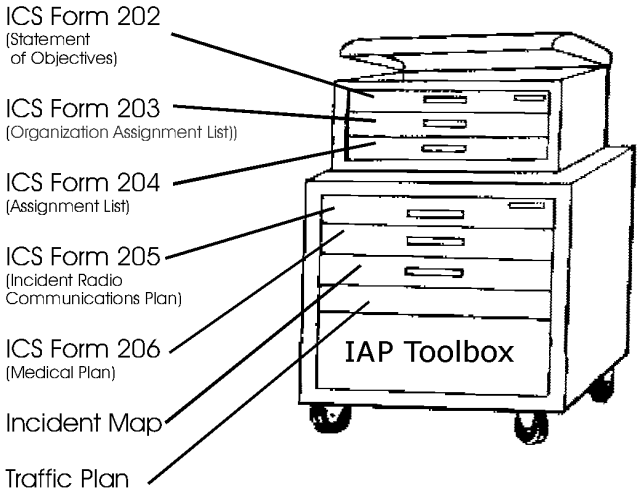


Figure 3-4: IAP Toolbox

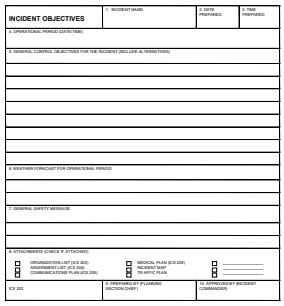
- Some agencies have modified these forms to suit their particular application areas.
- This collection of forms, plus the incident map and traffic plan, are used as the basis of a written IAP.
- Each form provides an important piece of information necessary to manage a large-magnitude incident effectively.

Instructor Notes:

Inform students that the following ICS forms are included in their student manuals in Figures 3-10 through 3-14.

Slide 3-62: ICS Form 202

ICS Form 202

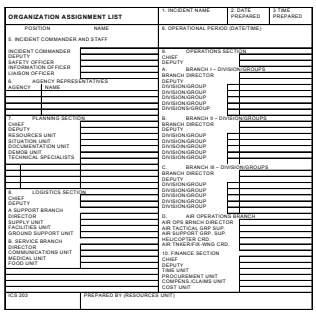


INCIDENT OBJECTIVES	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
4. OPERATIONAL PERIOD (DATE/TIME):			
5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES):			
6. WEATHER FORECAST FOR OPERATIONAL PERIOD:			
7. GENERAL SAFETY MESSAGE:			
8. ATTACHMENTS (CHECK IF ATTACHED): ☐ ORGANIZATION LIST (ICS 203) ☐ ASSIGNMENT LIST (ICS 204) ☐ COMMUNICATIONS PLAN (ICS 205) ☐ MEDICAL PLAN (ICS 206) ☐ INCIDENT MAP ☐ TR APP'C PLAN ☐ _____ ☐ _____ ☐ _____			
ICS 202	9. PREPARED BY (PLANNING SECTION CHIEF)	10. APPROVED BY (INCIDENT COMMANDER)	

Incident Objectives (ICS Form 202)—lists general control objectives (incident objectives—refer to the definition and examples of incident objectives).

Slide 3-63: ICS Form 203

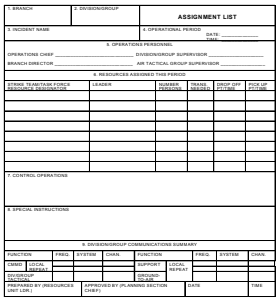
ICS Form 203



Organization Assignment List (ICS Form 203)—describes the elements of the ICS organization that will be in place for the next operational period.

Slide 3-64: ICS Form 204

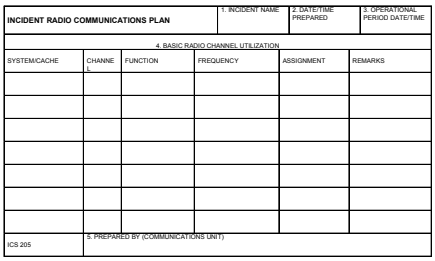
ICS Form 204



Assignment List (ICS Form 204)—used by the division/ group supervisors and identifies control operations or work assignments (refer back to the definition and examples for control operations) that will be completed during the operational period to achieve the incident objectives. It also lists resources that will be assigned to the division/group to complete the expectations. **One Form 204 is made out for each division or group on the incident.**

Slide 3-65: ICS Form 205

ICS Form 205



Incident Radio Communications Plan (ICS Form 205)—lists radio channels or frequencies that will be used for each element of the incident organization. (This form is a very useful during complex incidents involving multiple jurisdictions, multiple agencies, and unified command.)

Slide 3-66: ICS Form 206

ICS Form 206

MEDICAL PLAN	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED	4. OPERATIONAL PERIOD

5. INCIDENT MEDICAL AID STATIONS			
MEDICAL AID STATIONS	LOCATION	PARAMEDICS YES	PARAMEDICS NO

6. TRANSPORTATION			
A. AMBULANCE SERVICES			
NAME	ADDRESS	PHONE	PARAMEDICS YES / PARAMEDICS NO

B. INCIDENT AMBULANCES		
NAME	LOCATION	PARAMEDICS YES / PARAMEDICS NO

C. HOSPITALS							
NAME	ADDRESS	TRAVEL TIME AIR	TRAVEL TIME GROUND	PHONE	HELIPAD YES	BURN CENTER YES	BURN CENTER NO

8. MEDICAL EMERGENCY PROCEDURES

9. PREPARED BY (MEDICAL UNIT LEADER)	10. REVIEWED BY (SAFETY OFFICER)

Medical Plan (ICS Form 206)—describes whom to contact (at the incident) and which medical facility to use in the event of firefighter injury. **(This form is intended for use in the care of injured incident personnel).**

Incident map—is not assigned a form number. Maps are very useful for documenting and communicating location(s) of branch and division boundaries, incident facilities, and other incident information.

Traffic Plan—is not assigned a form number. This map indicates road closures, bridge closures, potential road hazards, drop points, incident facilities, and best roads to travel around the incident. (Additionally, you may want a traffic plan to indicate travel in and around base/camp)

Slide 3-67: Preparing the Plan (continued)

Preparing the Plan (continued)

United States Fire Administration

- Completed forms sent to planning section, which assembles document
- All forms to planning no later than 2400 hours (or 1200 hours for the day shift)
- By 0400 hours, IC should review/approve plan

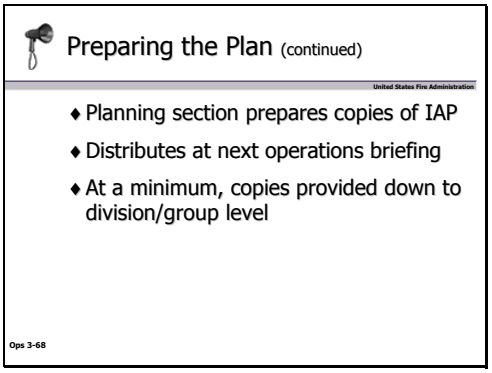
Ops 3-67

- All sections send their forms to the planning section, which assembles them into one document.
  - The documentation unit (within the planning section) is responsible for preparing and duplicating the IAP.
  - All sections must have their forms and information to planning no later than 2400 hours (1200 for day shift).

Planning will not be able to get the IAP written, assembled, approved, and printed if information is received after this time.

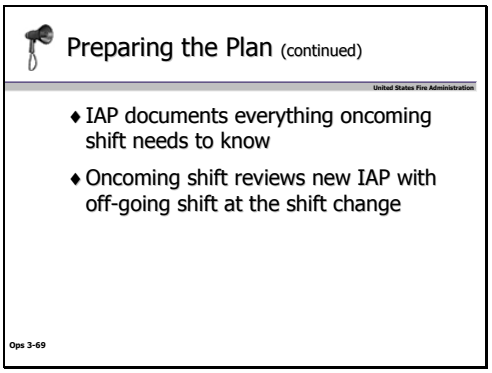
- Between 0200 and 0400 (1400 and 1600 for day shift) the IC should have reviewed and approved the plan.

Slide 3-68: Preparing the Plan (continued)



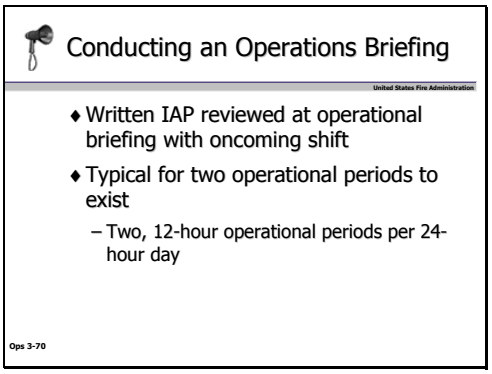
- The planning section then prepares copies of the plan.
  - Distribution takes place at the morning operations briefing.
  - At minimum, enough copies are made so that they can be provided down to the division/group level.

Slide 3-69: Preparing the Plan (continued)



- Everything that the oncoming shift will need to know in order to "hit the ground running" should be in place and documented in the IAP.
- The oncoming shift will review the new IAP with the off-going shift at a shift change meeting called the operations briefing.

Slide 3-70: Conducting an Operations Briefing



6. Conducting an Operations briefing

- On large incidents (or major disasters that require more than one operational period), the written IAP (covering the new period) is reviewed at the operations briefing with the oncoming shift.

- It is typical for multiple-day, large incidents/disasters to be divided into 12-hour operational periods (referred to as day and night shifts).

  * These operational periods are important to remember when calculating staffing requirements for multiple-period incidents. (Resources calculated must be divided by two.)

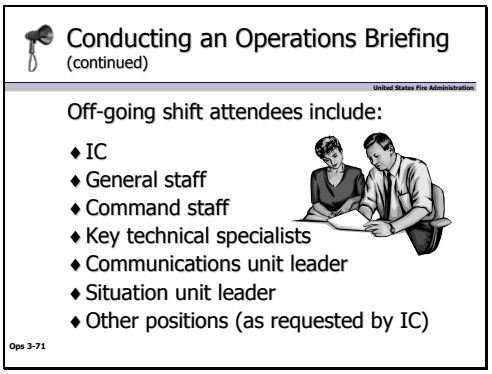
Instructor Notes:

Tell students that operational periods allow overhead and personnel to rest. An IC cannot expect his or her staff to work longer than 12 hours at a time without making serious mental errors and safety violations.

  * Operations briefing shifts begin at 0500 and 1700 hours.

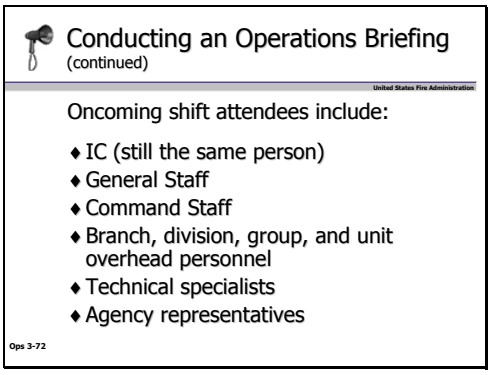
The intent of each briefing is to review the new IAP that covers the next 12-hour period.

Slide 3-71: Conducting an Operations Briefing (continued)



- Who attends each operational briefing is dictated by the shift with which the person is involved.
  - The operations briefing for the off-going shift should be attended by:
    - IC (only one per incident),
    - General staff,
    - Command staff,
    - Key technical specialists,
    - Communications unit leader,
    - Situation unit leader, and
    - Other positions requested by the IC.
  - Remember that there is an incident occurring. Therefore, many of the off-going shift overhead positions will brief their relief while on the line.

Slide 3-72: Conducting an Operations Briefing (continued)



* The operations briefing for the oncoming shift should be attended by:
  - IC (still the same person);
  - General staff;
  - Command staff;
  - Branch, division, group, and unit overhead personnel;
  - Technical specialists; and
  - Agency representatives.

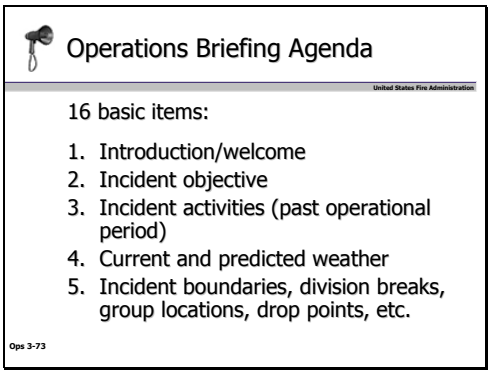
- These meetings can get quite large and usually do not include personnel who do not have a specific need to be present.
- Personnel (for example, assistant unit leaders and single-resource personnel) will be briefed on the line by oncoming shift overhead.

Instructor Notes:

Have students turn to Table 3-3, Operations Briefing Agenda Items, in their student manuals (provided for your use on the following page).

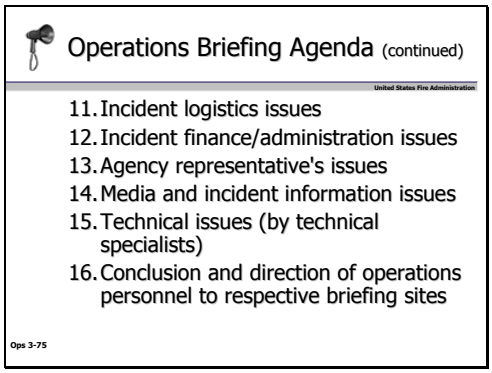
This table contains operations briefing information (also covered on the following slides).

Slide 3-73: Operations Briefing Agenda



Slide 3-74: Operations Briefing Agenda (continued)

Slide 3-75: Operations Briefing Agenda (continued)



- Operations briefing agenda (0500 and 1700 hours) contains 16 basic items.

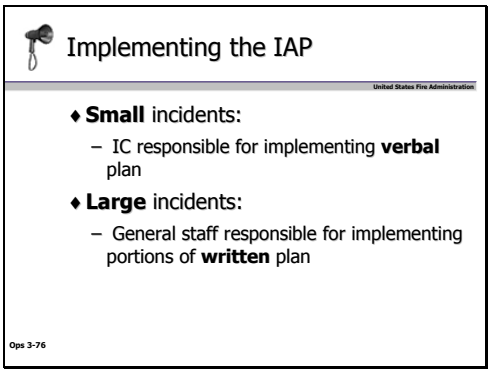
Table 3-3:
Operations Briefing (0500 and 1700 Hours) Agenda Items

	Agenda Item	Person Reporting
1.	Introduction and welcome.	PSC, IC
2.	Review of incident objective, ICS 202.	IC(s)
3.	Review of incident activities during past operational period.	Off-going OSC
4.	Review of current and predicted weather.	Situation unit leader
5.	Review of incident boundaries, division breaks, group locations, drop points, etc.	OSC
6.	Review of all Division Assignment Lists, ICS 204. This review is to consist of the following items: Physical identification of branch directors and division/group supervisors. Identification of division briefing sites. Review of control operations. Review of special instructions. Review of division communications procedures.	OSC
7.	Review of Incident Radio Communications Plan.	Communications unit leader.
8.	Review of Safety Message, ICS 202.	Safety officer
9.	Review of Medical Plan, ICS 206.	Medical unit leader
10.	Review of Air Operations Summary, ICS 220.	Air operations branch director
11.	Review of incident logistics issues.	LSC
12.	Review of incident finance/administration issues.	Finance/administration section chief
13.	Review of agency representatives' issues.	Liaison officer
14.	Review of media and incident information issues.	Information officer
15.	Review by technical specialists.	(Varies depending on incident.)
16.	Conclusion and direction of operations personnel to their respective briefing sites.	PSC, IC

- At the conclusion of the operations briefing, the oncoming shift takes over and continues to manage the incident.

- During each shift the IAP is prepared for the next operational period (to hand off to the next shift). This cycle continues until the incident is completed.

Slide 3-76: Implementing the IAP

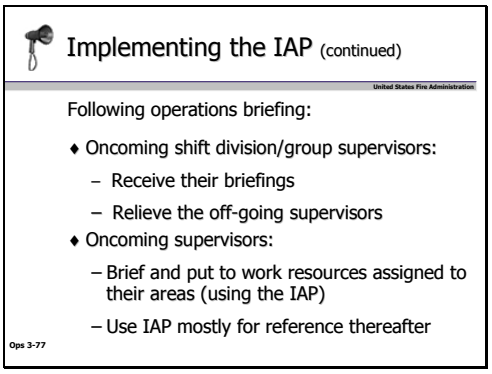


7. Implementing the IAP

- On small incidents with no written plan, the IC has full responsibility for the implementation of a verbal plan.

- A large incident will require a written IAP. Each general staff member will assume responsibility for implementing his or her respective portion of the plan.

Slide 3-77: Implementing the IAP (continued)

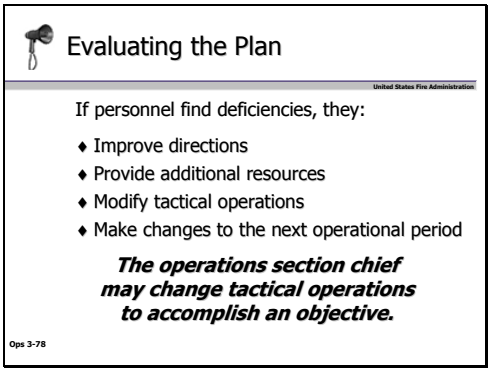


- Following the operations briefing:

  * Oncoming shift division/group supervisors move to their assignments where they receive briefings and relieve the off-going supervisors.

  * The oncoming supervisor briefs the resources assigned to his or her area using the IAP and then puts the resources to work.

Slide 3-78: Evaluating the Plan

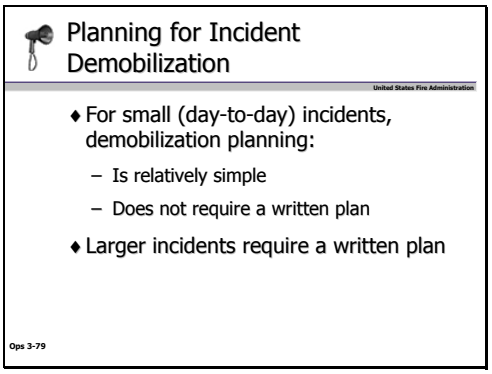


* Once at work, the IAP is usually not looked at very frequently except for reference purposes.

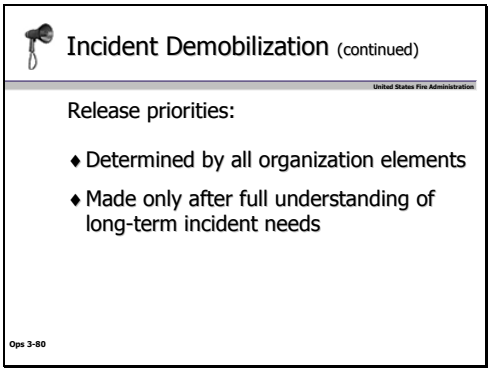
8. Evaluating the plan

- During the operational period, the IC and the planning and operations chiefs should assess work progress against plan objectives.
- If they find deficiencies, they may need to:
  * Improve directions,
  * Provide additional resources,
  * Modify control operations, or
  * Make changes to the next operational period.
- If necessary, the operations section chief may make changes to control operations (called for in the IAP) to accomplish an objective.

Slide 3-79: Planning for Incident Demobilization



Slide 3-80: Incident Demobilization (continued)



V. Planning for Incident Demobilization (10 minutes)

- Incident demobilization is an important part of the planning process.
- For small, day-to-day incidents, demobilization planning is relatively simple and does not require a written plan.
- For larger incidents (particularly those with multi-agency involvement), it is essential to have a written demobilization plan.
- The PSC must establish an adequate demobilization unit to provide for orderly and efficient release of incident resources.
- Release priorities must be determined by all organization elements for:
  - Resources retained and
  - Resources available for release.
- Determine release priorities after fully understanding long-term incident needs.

Instructor Notes:

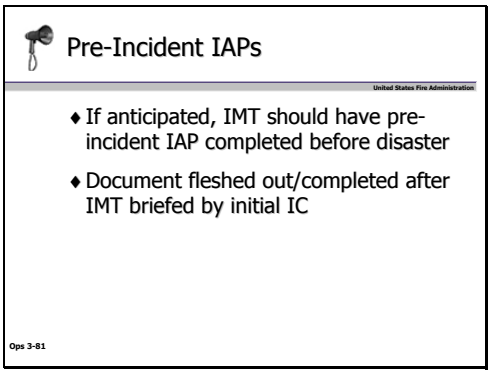
If available, refer students to their *Field Operations Guides* (ICS 420-1).

Have students independently review the five different planning cycles for the Command and General Staff functions shown in the guide.

Explain that each section has a planning cycle that reflects the different responsibilities, different meetings, and even different shift changes during a 12-hour operational period. However, all sections are required to attend the same operations briefing at 0500/1700 hours and the same planning meeting at 0900/2100 hours (day/night shifts).

Remind students that the publication is an excellent reference and can be customized by adding information deemed important by the individual.

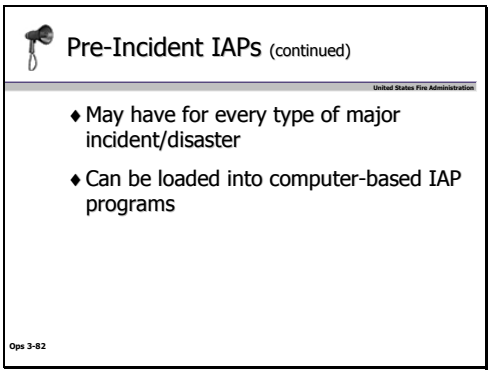
Slide 3-81: Pre-Incident IAPs



VI. Pre-Incident IAPs (20 minutes)

- Some organizations have pre-incident IAPs for every type of major disaster or incident that may strike their communities.
- The document is fleshed out/completed after the initial IC briefs the IMT.

Slide 3-82: Pre-Incident IAPs (continued)



- These documents sometimes are loaded into a computer-based IAP program (that greatly reduces staff time needed to produce a quality IAP).

- Many emergencies can be forecasted or anticipated. Some can be predicted to the day—sometimes to the hour.

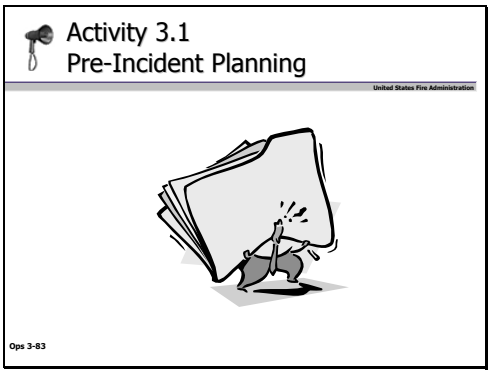
- **Before the incident**

  The IMT should have a pre-incident IAP completed before an incident happens.

- Following a briefing from the initial action IC, the IMT then can add missing information to the pre-incident IAP (for example, location of incident, location of facilities, overhead personnel changes, branch/division/group, and resource information).

- After the IMT adds this information, the planning section can make copies and distribute them during the operational period.

Slide 3-83: Activity 3.1: Pre-Incident Planning



VII. Activity 3.1: Pre-Incident Action Planning (60 minutes)

Instructor Notes:

The following pages contain the instructor and student activity pages. Refer students to Activity 3.1, Pre-Incident Action Planning, in their student manuals.

Activity 3.1:
Pre-Incident Action Planning

Time: 60 minutes

Purpose:

To help students understand the importance of preplanning (control objectives) in anticipation of a disaster. Each type of disaster will direct you to specific objectives. These objectives form the basis of guidelines for operational and command personnel.

Materials:

- Student Activity Worksheets (provided in student manuals)
- Easel pads
- Markers

Directions:

1. Divide students into four small groups.

2. Assign each group to complete a worksheet associated with a disaster:

   - Worksheet #1: Hurricane
   - Worksheet #2: Tornado
   - Worksheet #3: Earthquake
   - Worksheet #4: Terrorist incident

3. Instruct groups to complete the following tasks:

   - Elect a group recorder and spokesperson and

   - Read the Pre-Activity Information Sheet.

4. Instruct groups to organize their thoughts and develop the following Central City Fire Department (CCFD) items on an easel pad:

   - A list that contains a minimum of five incident control objectives and

- A list that contains a minimum of five control operations(that is, work assignments on ICS Form 204).

5. Groups will have 30 minutes to perform these tasks and record their final responses on an easel pad.

6. At the conclusion of the allotted time, take 30 minutes to call upon the groups' spokespersons to report their groups' findings.

Whether a disaster can be forecasted or not, there is a considerable amount of information that can be captured before any major disaster that would provide initial response resources with general control objectives and unit level control operations. Additionally, this pre-incident information can be developed quickly into a written IAP that can serve the incident organization through the first operational period.

Pre-Activity Information Sheet

Preplanning specific objectives in anticipation of a disaster can be critical to successful recognition and completion of those objectives when the event occurs. Although not all conditions encountered during a disaster response will have been predicted, knowing what to do about those that were predicted will make a difference. Different disasters will cause similar objectives to be identified, but also will create objectives unique to that type of incident.

Unit or station battalion/district/division offices will require some form of guidelines to follow in the event that communications are down and they must begin service without directions from Command. It would be unfair to lay down hard and fast rules that experienced emergency service workers must follow after a catastrophic disaster has occurred. These people will have to make decisions based upon their knowledge, experience, and the situation. They should, however, understand the strategy(ies) associated with the various disasters that may strike Central City.

Activity 3.1:
Pre-Incident Action Planning
Instructor Answer Key

Suggested Responses:

Most major disasters will share similar objectives since the nature of an objective is very broad.

Unit-level control operations are directed at the strategy and tactic level and may have guidelines more specific to the disaster type.

The following suggested answers are not a complete listing. Students will provide other acceptable variations. If students provide responses other than those listed below, challenge the student for an explanation of the rationale behind his or her answer. The student's rationale should follow the definitions of objectives, strategies, and tactics covered in this unit.

Incident Objectives

Tornado, Earthquake, Hurricane

- Ensure incident personnel safety.
- Prioritize all requests for service, that is, life, environment, property, equipment.
- Provide initial EMS.
- Prevent conflagration:
  - Hold fires to building of origin;
  - Ensure availability of firefighting water; and
  - Mitigate, stabilize, or isolate hazards that could cause injury or additional property damage.

- Stay visible to public and provide assistance and reassurance.
- Provide assistance to other agencies.

Terrorism

- All of the above plus: Prioritize all requests for service, that is, life, crime scene, environment, property, equipment.

Unit-Level Control Operations

Tornado, Earthquake, Hurricane

- Prioritize all requests for service, that is, life, environment, property, equipment.
- Prevent conflagration—hold fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate, stabilize, or isolate hazards that could cause injury or additional property damage.
- Stay visible to public and provide assistance and reassurance.

US&R Control Assignments

- Provide technical rescue services to those in need.
- All confined spaces shall be considered Immediately Dangerous to Life and Health (IDLH) until proved otherwise by atmospheric monitors.
- Use first responders to complete non-technical tasks to conserve use of US&R specialist resources.

EMS Control Assignments

- Provide emergency medical services to those in need.
- Provide triage of the injured using the Simple Triage and Rapid Treatment (S.T.A.R.T.) system.
- Use BLS personnel where appropriate to conserve the use of ALS resources.

Haz Mat Control Assignments

- Contain all actual or threatened hazardous substances.
- Provide technical assistance to first responders.
- Use FRO-level personnel where appropriate to conserve on use of haz mat specialist resources.
- All haz mat incidents shall be managed using standardized tactical approach.

Unit-Level Control Operations for Terrorism

All of the above plus:

- Watch for secondary devices.
- Protect the crime scene.

Activity 3.1:
Pre-Incident Action Planning
Student Activity Worksheet

Time: 60 minutes

Purpose:

To help students understand the importance of preplanning (objectives) in anticipation of a disaster. Each type of disaster will direct you to specific objectives. These objectives form the basis of guidelines for operational and command personnel.

Directions:

1. The instructor will assign you to a small group.

2. Your group will work on one of the following worksheets associated with a disaster:

   - Worksheet #1: Hurricane
   - Worksheet #2: Tornado
   - Worksheet #3: Earthquake
   - Worksheet #4: Terrorist incident

3. Your group will complete the following tasks:

   - Elect a group recorder and spokesperson.

   - Read the Pre-Activity Information sheet.

4. Using the worksheet to organize your thoughts, develop the following Central City Fire Department items on an easel pad:

   - A list that contains a minimum of five incident control objectives and

   - A list that contains a minimum of five unit-level control operations.

5. Your group will have 30 minutes to complete these tasks and record your final responses on an easel pad.

6. After the allotted time, the instructor will call upon your group's spokesperson to report your group's findings.

Notes:

Pre-Activity Information Sheet

Preplanning specific objectives in anticipation of a disaster can be critical to successful recognition and completion of those objectives when the event occurs. Although not all conditions encountered during a disaster response will have been predicted, knowing what to do about those that will make a difference. Different disasters will cause similar objectives to be identified, but also will create objectives unique to that type of event.

Unit or station battalion/district/division offices will require some form of guidelines to follow in the event that communications are down and they must begin service without directions from command. It would be unfair to lay down hard and fast rules to be followed by experienced emergency service workers after a catastrophic disaster has occurred. These people will have to make decisions based upon their knowledge, experience, and the situation. They should, however, understand the strategy(ies) associated with the various disasters that may strike Central City.

Worksheet #1: Hurricane

Incident Objectives

Responses:

_____

_____

_____

_____

_____

_____

_____

Unit-Level Assignments

Responses:

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Worksheet #2: Tornado

Incident Objectives

Responses:

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Unit-Level Assignments

Responses:

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Worksheet #3: Earthquake

Incident Objectives

Responses:

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Unit-Level Assignments

Responses:

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Worksheet #4: Terrorist Incident

Incident Objectives

Responses:

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Unit-Level Assignments

Responses:

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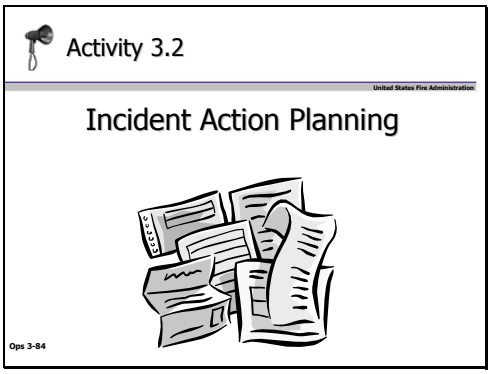
Slide 3-84: Activity 3.2: Incident Action Planning



VIII. Activity 3.2: Incident Action Planning (165 minutes)

Instructor Notes:

The following pages contain the instructor and student activity pages. Refer students to Activity 3.2, Incident Action Planning, in their student manuals.

Activity 3.2:
Incident Action Planning

Time: 165 minutes

60 minutes—directions and group work
45 minutes—planning meeting
60 minutes—copy the completed IAP and lead the class through the operations briefing process.

Purpose:

To demonstrate the ability to plan response capabilities in a manner that maximizes efforts in providing emergency services.

Instructor Notes:

Before the activity, be sure to review the following materials:

- Fire Chief's Briefing and
- Flood condition maps for 1400 hours and 1800 hours.

Materials:

- Easel pads
- Markers
- ICS Forms 202, 203, 204, 205, 206, 214, and 215 (provided in the student manuals)
- Flood condition maps for 1400 hours and 1800 hours
- Central City Fire and Emergency Medical Services
- Central City Fire/EMS Response Criteria

Directions:

1. Set up five break-out areas, one for each of the following groups:

    - Incident command group
    - Command staff group
    - Operations group
    - Planning group
    - Logistics group

Instructor Notes:

Advise the students that the finance section is very important on a large-scale incident; however, issues of procurement procedures, vendor contracts, agency agreements, and other financial concerns would be hard to work into this activity, and most students will never work in the finance section. Many departments use their civilian administrative personnel to train and fulfill this function. (The finance section objectives are included in the table so that students can see what is required of the finance section.)

2. Assign groups to the designated break-out areas. Explain to the students that during an actual disaster, a single person would represent the functional elements that they are representing as small groups. They are working in groups in this activity to allow all students to participate. Each group will work as a team, performing this activity from the perspective of their assigned ICS element.

3. Instruct students to turn to the Incident Management Team Objectives table following the activity description in their student manuals. Review the roles/tasks, listed in the table, that each group will assume during this activity.

   This activity is driven by a fire chief's briefing and maps of forecasted flood conditions. The activity begins with all groups gathering to receive an initial briefing from the Central City Fire Chief (the instructor). The briefing centers on current and projected conditions for a flood.

   Refer the students to Appendices A and B for Central City information.

4. Instruct students to turn to the Fire Chief's Briefing and the projected inundation areas maps for 1400 and 1800 hours in their student manuals.

5. Deliver the briefing to the class.

   Key scenario points that you need to be cognizant of include:

   - Various flooding problems already exist within Central City.
   - Projected conditions could cause disruption of normal fire department response to areas within the community.
   - Modifications and adjustments to normal fire department procedures are required to ensure the most effective response by resources.

6. After presenting the Fire Chief's Briefing to the class, activate an IMT. The team's focus is to assimilate information for an IAP. (Note: Advise the students not to use colored markers to develop the IAP because when copies are made all the color will be lost. The actual IAP will be assembled/completed shortly after the planning meeting associated with this activity is held).

7. Ask the groups to relocate to their assigned breakout areas.

   While in their breakout areas, groups will have 45 minutes to:

   - Elect a group spokesperson;
   - Review the flood information;
   - Discuss current and forecasted flood conditions;
   - Develop responses to the tasks listed for their assigned ICS element on the Incident Management Team Objectives sheet; and
   - Complete their portions of the IAP form(s).

8. After the Incident Commander group reviews the flood information and composes its responses, group members will circulate among the other groups in breakout areas. Their job is to ensure that other groups list all tasks necessary to respond to the current emergency.

   Stress the fact that the groups will need to interact (for example, operations with IC, plans with logistics, and logistics with operations). Interaction is the only way for them to obtain information to complete their task lists and the necessary forms for the planning meeting (ICS forms 202-206—provided in the student manuals).

   You will need to:

   - Monitor each group's completion of ICS forms;
   - Guide the planning section chief through execution of the planning meeting;
   - Review the planning group's finalized IAP to ensure that it contains correct/necessary elements; and
   - Copy the final IAP and distribute one copy to each student.

9. At the conclusion of the allotted time, reconvene the class and hold the planning meeting.

Fire Chief's Briefing

April 1, 1000 hours

Liberty County and Central City have experienced steady, moderate-to-heavy rain for the past 6 days.

During this time, water runoff into the Roaring River, especially from tributaries such as Towalomie River and Swatera Creek, has caused the Roaring River in the Central City area to rise to within one foot of the flood stage.

Some minor flooding already has occurred within low-lying areas of Central City.

Torrential rains are reported at this time in the mountain areas north of Central City. The Liberty County Weather Bureau is reporting the possibility of 4 to 5 inches of rain in the mountain areas within the next 24 hours.

Liberty County Department of Engineering, Flood Control Division, is estimating that if mountain rainfall amounts reported at this time are accurate, flood stages of the Roaring River in the Central City area will be reached in approximately 2 hours, serious major flooding could occur within 6 hours.

The Flood Control Division currently is working on a prediction based on potential 24-hour rainfall amounts and has agreed to provide updates on projected flood conditions to the fire department on a periodic basis.

The Flood Control Division also has compiled projected inundation maps of Central City based on flood conditions caused by Tropical Storm Edward in 1985.

The attached maps estimate the area(s) of the city that will be flooded by 1400 and 1800 hours.

The National Weather Service (NWS) has announced that the heavy rain will continue in the southern part of the State of Columbia for several more days.

Portions of Stramford, Apple, Granite, Mineral, Kane, and Green counties are expected to suffer flood damage.

The statewide master mutual aid system has been activated; however, Central City cannot anticipate any outside help or resources for the next 12 hours.

Public works has notified all city departments that they should plan for all bridges across the Roaring River within Central City to be impassible by 1430 hours. The closest possible crossing point will be U.S. Highway 102, four miles south of the city limits.

Public health has warned that all flood waters should be considered contaminated because of the wide area flooding and runoff from farm lands, manufacturing, and waste treatment facilities to mention just a few.

My directions to this Incident Management Team are as follows:

- Safety of our people and the public is your first priority.
- Our primary missions are rescue, fire suppression, environmental protection, and property conservation.
- The department has four radio frequencies. Dispatch is on Channel one. Channels two, three, and four can be used for the incident.
- I have put all fire department shift personnel on a 24-hour-on and 24-hour-off status until further notice. All personnel will be on telephone stand-by when off duty.
- It is 1000 hours now. I want a planning meeting started by 1100 hours and the IAP ready for distribution at the operational briefing at 1200 hours.
- This IMT shall be in place and take over the incident by 1300 hrs.
- The first operational period will be from 1300 hours to 0600 hours and then on a 12-hour cycle after that (0600 to 1800 hours). Shift personnel will be on a 24-hour cycle.
- This incident will surely become a statewide disaster and possibly a Federal disaster, so all costs may be recoverable. It is very important that everyone on the incident track his or her time on the ICS Form 214 and that Logistics will let no one demobilize without getting Form 214 from the unit or personnel.

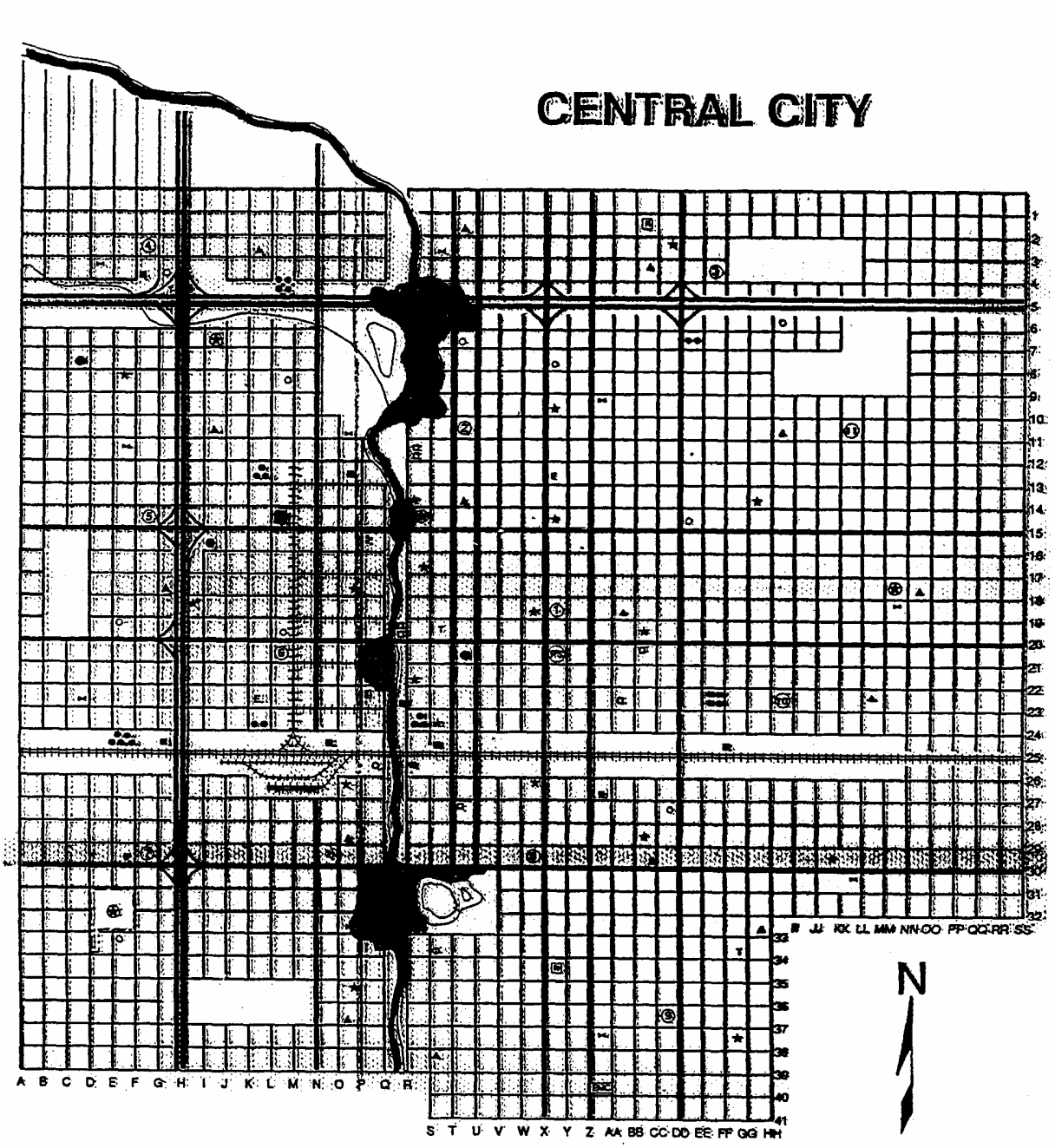
This is one of the worst days in our city's history. Let's all work to make this our department's finest hour.

Instructor Note:

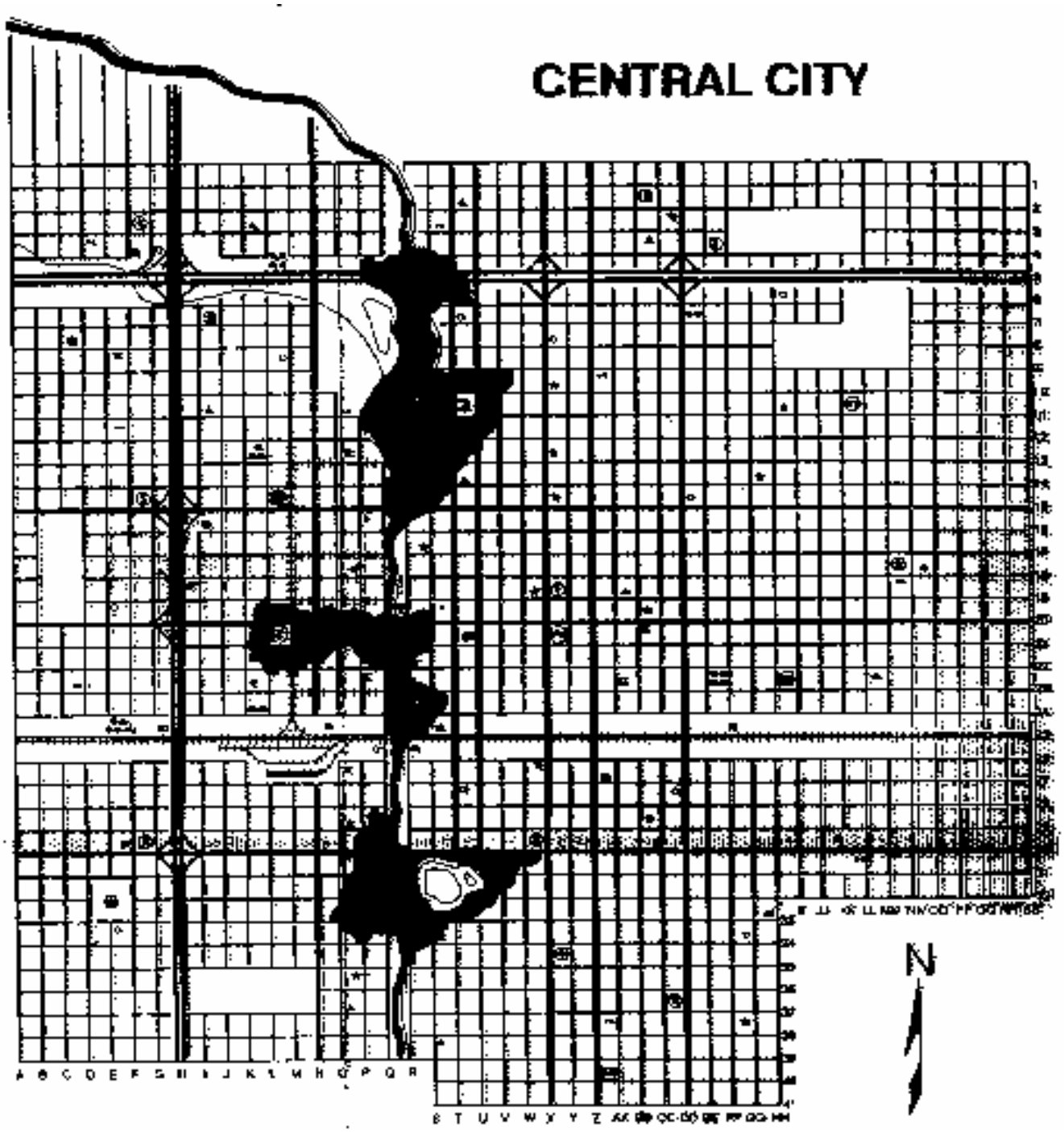
Stay in the fire chief's role and answer any questions that the group may have. Be prepared to improvise your response on any questions that were not covered in the activity briefing regarding such matters as storm conditions and hazards.

Ask the incident commander group if they have anything to add before releasing the team to the breakout areas.

1400 Hours: Projected Inundation Area(s)



1800 Hours: Projected Inundation Area(s)



Central City Fire and Emergency Medical Services

Fire Resources

Overhead Positions—one Fire Chief, one Assistant Chief, one Chief Fire Marshal, seven Fire Inspectors, one Training Captain, two Training Lts., three Deputy Chiefs (1 per shift), six Battalion Chiefs (2 Battalions x 3 shifts).

Eleven engine companies—Engines 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11. Each engine company is staffed with one officer and three firefighters.

Four truck companies—Trucks 1, 3, 5, and 8. Each truck company is staffed with one officer and three firefighters.

Squad Company 1. The squad company is staffed with one officer and two firefighters fully trained in rescue practices.

Crash/Fire/Rescue Engine. Airport-staffed with one officer and two firefighters.

Engine 103, Engine 104, Engine 105, and Engine 109. Reserve Engines—fully equipped.

Truck 103. Reserve Truck—fully equipped.

Engine 104 (1,500-gpm foam pumper). Apparatus contains one 500-gallon foam tank; 400 five-gallon cans of foam are stored at Engine 4.

All members of Engine 5 and Truck 5 have been fully trained as a Hazardous Materials Response Team.

Mask Service Unit 106.

Engine 206 (light truck).

Boat 2 - 16’ Boston Whaler.

EMS Resources (third service operated by the city and stationed in the fire stations):

Three EMS supervisors – (one per shift x 3 shifts) operating out of fire station 1.

Five ALS ambulances – ALS 2, 4, 7, 9, and 11

Five BLS ambulances – BLS 3, 5, 6, 8, and 10

Central City Fire/EMS Response Criteria

1st-Alarm Resource Card **Response time: 5 min.**

Engine 1	Truck 1	Battalion 1
Engine 2	Ambulance 2	MSU 6
Engine 3	Squad 1	

2nd-Alarm Resource Card **Response time: 10 min.**

Engine 4	Truck 3	Battalion 2
Engine 5	Ambulance 3	Deputy Chief
Engine 6	EMS Supervisor	

3rd-Alarm Resource Card **Response time: 15 min.**

Engine 7	Truck 5	Fire Marshal (Bn. Chief)
Engine 8	Trng. Battalion Chief	
Engine 9	Adm. Battalion Chief	

4th-Alarm Resource Card **Response time: 15 min.**

Engine 10	Truck 8
Engine 11	

5th-Alarm Resource Card **Response time: 20 min.**

Fisherville Engine 1
Harvest Junct. Engine 2
Kingston Engine 1

6th-Alarm Resource Card **Response time: 20 min.**

Apple Valley Engine 1
Bayport Engine 2
Jasper Engine 2

7th-Alarm Response Card **Response time: 25 min.**

Deep Water Engine 2
Kingston Engine 3

Incident Management Team Objectives Chart

Incident Management Team Objectives	
Incident Commander	1. Holds briefing before the first planning meeting (for this activity, the Fire Chief's Briefing will satisfy this requirement). 2. Obtains an overview of current and predicted flood conditions or changes. 3. Sets control objectives. 4. Determines operational periods. 5. Evaluates strategies for the next 12 hours. 6. Establishes immediate priorities. (The IC has the responsibility to establish the order in which the objectives and strategies will be addressed.) 7. Establishes an appropriate organization. 8. Identifies and establishes an ICP. 9. Generates expectations for general staff. 10. Develops list of needs before the planning meeting. 11. Determines time of first planning meeting. 12. Generates directions for facilities, communications, and safety plan. 13. Determines when the IMT officially will take command. 14. After the initial briefing, releases the IMT (to attend to its individual responsibilities prior to the planning meeting). 15. The IC now provides input to his or her command staff and the general staff to ensure that they meet assigned expectations. 16. Maintains Unit/Activity Log (ICS 214).
Command Staff	**Safety Officer:** 1. Identifies safety issues and develops safety plan. 2. Exercises emergency authority to stop and prevent unsafe acts. 3. Investigates accidents that have occurred within the incident area (involving incident personnel). **Information Officer:** 1. Determines (from the IC) if there are any limits on media releases; prepares media briefing. 2. Develops material for use in media briefing.

	3. Obtains IC approval of media release(s). 4. Conducts media briefings. 5. Arranges for tours, interviews, or briefings that may be required. 6. Obtains media information that may be useful to incident planning. **Liaison Officer:** 1. Establishes list of assisting and cooperating agencies (and their representatives). 2. Briefs assisting/cooperating agencies on incident status. All three command staff positions maintain a Unit/Activity Log (ICS 214).
Operations Section Chief	1. Works with IC to set control objectives and strategies. 2. Develops tactics for each division and group. 3. Develops division/group/branch boundaries. 4. Identifies resource/support needs (after development of tactics for each division/group, establishes immediate and 12-hour needs for resources, support, and supplies. Places order with LSC). 5. Identifies incident facilities and reports locations (the OSC, PSC, and LSC work together to evaluate/improve and plot (on a map) locations of the ICP, staging/check-in, base, camp, and drop points). 6. Communicates information (on an as-needed basis, communicates above information to incident personnel). 7. Maintains a Unit/Activity Log (ICS 214).
Planning Section Chief	1. Establishes check-in (ensures that check-in recorders have communication with the planning section). 2. Handles resource tracking (organizes resource tracking process to include what has been assigned, is available, and what has been requested). 3. Tracks situation status (on a map, documents incident perimeter, division/branch boundaries, and incident facilities). 4. Determines need for technical specialist(s) required to support the incident. 5. Establishes special information collection activities as necessary (for example, weather, toxins, and environmental conditions).

	6. Assembles information on alternative strategies. 7. Provides period predictions on incident potential. 8. Documents chronology of events (documents chronology of events from start to current). 9. Prepares IAP (responsible for collection of information from various elements of the IMT and assembly of the information into the IAP). 10. Maintains a Unit/Activity Log (ICS 214).
Finance/Administration Chief	1. Identifies jurisdictional boundaries (identifies boundaries of all jurisdictions within incident perimeter). 2. Determines existing agency agreements (determines resources that are on the incident as a result of automatic or mutual aid (and their financial agreement)). Also determines resources available by assistance-by-hire (and their rates). 3. Determines financial issues (financial issues/constraints for both the department and existing agencies). 4. Establishes procurement procedures (establishes vender list and makes contacts for anticipated procurement needs). 5. Maintains daily contact with department on finance/ administration matters. 6. Ensures that all personnel time records are completed accurately. 7. Ensures that all obligation documents and future claim documentation are completed. 8. Maintains Unit/Activity Log (ICS 214).
Logistics Section Chief	1. Works with operations, evaluates/improves communications plan and establishes incident. 2. Evaluates and improves medical and personnel rehabilitation plan. Establishes medical and rehabilitation units. 3. Works with operations to develop a traffic plan (for incidents where one is required). 4. Obtains incident personnel total from PSC (for initial food order/plan). 5. Develops food order and establishes plan. 6. Obtains resource information from PSC and develops fuel and mechanical repair plan. 7. Places resource and personnel order (LSC will place order based on IAP). 8. Maintains Unit/Activity Log (ICS 214).

Planning Meeting

The focus of the planning meeting will be to collect and exchange all information necessary to prepare an IAP for a Central City flood.

The planning chief (planning group spokesperson) will lead the planning meeting.

Each group will report its findings to the chief and turn over its ICS form(s).

The planning chief will be assisted by the instructor and other planning group members, who will begin assembling the plan as each group turns in its completed form(s).

The planning chief will use the Planning Meeting Checklist (included in the student manuals) to structure the meeting.

By the end of the meeting, the planning section should have all necessary information and should complete/assemble the IAP.

Once the planning group has completed the IAP and the instructor has checked it, copies will be made and distributed to students. Hold an operations briefing using the Operations Briefing Agenda to review the IAP.

Planning Meeting Checklist

Task Description	Responsible Person	√
1. Conduct/receive briefing on situation and resource status.	PSC	
2. Set control objectives.	IC	
3. Plot control lines, establish division boundaries, and identify group assignments.	OSC	
4. Specify tactics for each division.	OSC	
5. Specify resources needed by division/group.	OSC, PSC	
6. Specify incident facilities and reporting locations—plot on map.	OSC, PSC, LSC	
7. Review resources and personnel order (for example, engines, specialized equipment, and overhead personnel).	LSC	
8. Review communications, medical and traffic plan requirements.	PSC, LSC	
9. Finalize, approve, and implement IAP.	PSC, IC, OSC	

IC = Incident Commander
PSC = Planning Section Chief
OSC = Operations Section Chief
LSC = Logistics Section Chief

Debriefing:

Conclude the activity by ascertaining the following:

- Did each group identify all problems related to functional assignments?
- Were solutions developed for all problems identified?
- Did groups interface as necessary with other functional groups?
- Did each group identify and handle all of its required tasks (listed on the IMT Objectives sheet)?
- Were groups prepared for the planning meeting?

Facilitate a brief discussion of the value of planning before (and during) a disaster. Cover the problems that may arise if planning is not completed in a timely manner.

Instructor Notes:

The students should understand that after the planning meeting, the plan is assembled for final approval by the IC and copies are then made ready for the operations briefing, which usually takes place within an hour before the next operational period. Enough copies should be available to give one to at least each division or group supervisor.

Because many large-scale incidents and disasters strike a community without any warning, the first hours of the incident are chaotic at best and developing a written IAP seems impossible.

Most departments that use ICS and the planning process for major incidents rely on department SOGs for the first hours of the incident and work for a written plan starting with the second operational period.

After this activity, the student should be able to see that forecasted incidents could have an IAP ready and that almost all major incidents could be pre-planned and have most elements of the written IAP ready in the computer for quick adaptation to the incident at hand.

Suggested Answers to use During the Activity Review

Overall Incident Objectives

- Provide for the life safety of both the public and incident responders.
- Provide for mitigation of life-threatening hazards.
- Provide for protection of the environment.
- Protect and minimize damage to property and equipment.

First Operational Period Objectives

- Ensure safety of the public and responders.
- Prioritize all requests for service.
- Provide initial EMS care.
- Prevent conflagration by holding all structure fires to building of origin.
- Ensure the availability of firefighting water.
- Mitigate, stabilize, or isolate all hazards that could lead to personal injury or damage to the environment and property.
- Stay visible to the public as much as possible to provide assistance and reassurance.
- Provide assistance to other agencies.

General/Safety Message

- Use caution in low-lying areas that are prone to flooding. Wear personal flotation devices.
- Treat all downed electrical wires as "energized."
- Remember that response routes may have energized power lines and debris obstructing driving lanes.
- Watch for hazardous materials releases in the area.
- All floodwaters shall be considered contaminated from hazardous materials or sewage.
- All personnel entering floodwaters must go through decontamination.
- Slow down and think before you act.

On a pre-incident IAP like this flood, the assignments given on ICS Form 204 might include many of the same control objectives and safety messages from Form 202.

This is because no specific tasks or assignments are known. However, the second period IAP will usually contain more detailed direction on what is needed to be accomplished during that operational period.

Even though many of the division and group control operations repeat the objectives from Form 202, **it is not a good idea** to make a statement on Form 204 that just says "see Objectives from Form 202." The reason for this is that many resources on the incident may get a copy of Form 204 only for their division or group and not the entire IAP. In this situation, it would leave them without any control assignments with which to function.

General Control Objectives

- Prioritize all requests for service—life safety, environment, property, equipment.
- Provide initial EMS.
- Prevent conflagration by holding fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate, stabilize, or isolate hazards that could cause injury or additional property damage.
- Stay visible to public and provide assistance and reassurance.

Special Instructions/Safety Message

- Keep the chain of command advised of the availability of resources and need for additional/specialized resources.
- Record incident activity on ICS form 214.

US&R Control Assignments

- Strategic priorities—life safety, environment, property, equipment.
- Provide technical rescue services to those in need.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

US&R Special Instructions/Safety Message

- Use first responders to complete nontechnical tasks to conserve on use of US&R specialist resources.

- Maintain resource status with chain-of-command.
- Record incident activity on ICS form 214.

EMS Control Assignments

- Provide emergency medical services to those in need.
- Provide triage of the injured using the S.T.A.R.T. system.
- Provide technical assistance on EMS issues to first responders.
- Assist other agencies.

EMS Special Instructions/Safety Message

- Order all medical supplies through logistics.
- Use BLS personnel where appropriate to conserve the use of ALS resources.
- Maintain resource status with chain-of-command.
- Record incident activity on ICS form 214.

Haz Mat Control Assignments

- Strategic priorities—life safety, environment, property, equipment.
- Containment of all actual or threatened hazardous substances.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

Haz Mat Special Instructions/Safety Message

- Use First Responder Operational (FRO) level personnel where appropriate to conserve on use of haz mat specialist resources.
- All haz mat incidents shall be managed using standardized tactical approach.
- Maintain resource status with the chain-of-command.

Summary:

The value of conducting a planning meeting and developing an IAP related to impending disaster situations cannot be overemphasized. Successful mitigation and development of an effective emergency response are dependent upon these items. Managing a large-scale disaster without this type of preparation and/or appropriate organizational structure can have unlimited consequences.

Sample IAP

Activity 3.2: Incident Action Planning

INCIDENT OBJECTIVES	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
	FLOOD	11/13/02	11:30

4. OPERATIONAL PERIOD (DATE/TIME) 11/13/02 1300 TO 0600

5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)

(1) ENSURE SAFETY OF PUBLIC & 1ST RESPONDERS

(2) EVACUATE & RELOCATE FORCASTED FLOOD AREAS

(3) SECURE FLOOD AREA - DENY ENTRY

(4) MITIGATE, STABILIZE, OR ISOLATE ALL HAZARDS THAT COULD LEAD TO INJURY OR DAMAGE ENVIRONMENT

(5) WINDSHIELD WATCH IN NEIGHBORHOODS

6. WEATHER FORECAST FOR OPERATIONAL PERIOD

HEAVY RAIN FOR SEVERAL DAYS

7. GENERAL SAFETY MESSAGE

SLOW DOWN, WATCH FOR SLIPPERY SURFACE, USE CAUTION IN LOW-LYING AREAS - WEAR PERSONAL FLOTATION DEVICES. WATCH FOR ENERGIZED POWER LINES, ALL FLOOD WATER SHALL BE CONSIDERED CONTAMINATED, PERSONNEL ENTERING FLOOD WATER MUST GO THROUGH DECON

8. ATTACHMENTS (√ IF ATTACHED)

- o ORGANIZATION LIST (ICS 203)
- o ASSIGNMENT LIST (ICS 204)
- o COMMUNICATIONS PLAN (ICS 205)
- o MEDICAL PLAN (ICS 206)
- o INCIDENT MAP
- o TRAFFIC PLAN
- o _____
- o _____
- o _____

202 ICS 3-80	11. PREPARED BY (PLANNING SECTION CHIEF)	12. APPROVED BY (INCIDENT COMMANDER)
	Daryl Parker	Smith

C O T C

Operations

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
FLOOD	11/13/02	1130

OPERATIONAL PERIOD (DATE/TIME): 11/13/02 1300 TO 0600

POSITION	NAME
4. Incident Commander and Staff	
INCIDENT COMMANDER	GARY SMITH
DEPUTY	
SAFETY OFFICER	MARK ROHR
INFORMATION OFFICER	DAVID BAILEY
LIAISON OFFICER	DAVID BAILEY

5. AGENCY REPRESENTATIVES

AGENCY	NAME

6. PLANNING SECTION

CHIEF	DARYL PAYTON
DEPUTY	
RESOURCES UNIT	DON BROWN
SITUATION UNIT	GEORGE MORGAN
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	

7. LOGISTICS SECTION

CHIEF	JOHN JOHNSON
DEPUTY	
a. SUPPORT BRANCH	
DIRECTOR	TRACY RAYNOR
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	
b. SERVICE BRANCH	
DIRECTOR	JOHN JOHNSON
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

8. Operations Section

CHIEF		J. RENTERIA
DEPUTY		
a. Branch I - Division/Groups		
BRANCH DIRECTOR EAST		B. KESTING
DEPUTY		
DIVISION/GROUP	A	J. SMITH
DIVISION/GROUP	B	R. JONES
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
b. Branch II - Division/Groups		
BRANCH DIRECTOR WEST		J. BERGERON
DEPUTY		
DIVISION/GROUP	C	K. HELM
DIVISION/GROUP	D	C. WORK
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
c. BRANCH III - DIVISION/GROUPS		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
d. AIR OPERATIONS BRANCH		
AIR OPERATIONS BR. DIR.		
AIR TACTICAL GROUP SUP.		
AIR SUPPORT GROUP SUP.		
HELICOPTER COORDINATOR		
AIR TANKER/FIXED-WING CRD.		
FINANCE SECTION		
CHIEF		
DEPUTY		
TIME UNIT		
PROCUREMENT UNIT		
COMPENSATION/CLAIMS UNIT		
COST UNIT		

203 ICS 1-82 | 9. PREPARED BY (RESOURCES UNIT)

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
EAST	A	

3. INCIDENT NAME: FLOOD

4. OPERATIONAL PERIOD — DATE 11/13/02 — TIME 1300 — 0600

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF: J.R. RENTERIA
DIVISION/GROUP SUPERVISOR: SMITH
BRANCH DIRECTOR: BC2 CRANDEL
AIR TACTICAL GROUP SUPERVISOR:

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME
S-1	JONES	4			
E 1	SMITH	4			
E 2	ROHR	4			
E 3	PIERCE	4			
ALS-1	NEEDLES	2			

7. CONTROL OPERATIONS

1. PRIORITIZE ALL REQUESTS FOR SERVICE - LIFE, ENVIRONMENT, PROPERTY, EQUIP.
2. EVACUATE ALL FORCASTED FLOOD AREAS BY 1530 HRS.
3. ENGINE CO. DECON OF PEOPLE WHO ENTER FLOOD WATER
4. SECURE FLOOD AREA - DENY ENTRY

8. SPECIAL INSTRUCTIONS

- DO NOT ENTER FLOOD AREAS WITHOUT - PERSONAL FLOTATION.
- FLOOD WATER CONTAMINATED - IF ENTERED MUST BE DECONED.
- CITY WATER CONTAMINATED - DRINK ONLY BOTTLED.
- RECORD ALL ACTIVITY ON FORM 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL	154.280		4	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL		154.430		2	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME

ICS 204 1-82

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
EAST	B	

3. INCIDENT NAME: FLOOD

4. OPERATIONAL PERIOD: DATE 11/13/02 TIME 1300 — 0600

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF: J.R. RENTERIA
DIVISION/GROUP SUPERVISOR: R. JONES
BRANCH DIRECTOR: KESTING
AIR TACTICAL GROUP SUPERVISOR:

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME
E-108	RENOLDS	4			
E-104	EGGBERT	4			
T-8	BUTTERFIELD	4			
ALS-4	THOMPSON	2			

7. CONTROL OPERATIONS

(1) PRIORITIZE ALL REQUESTS FOR SERVICE - LIFE, ENVIRONMENT, PROPERTY, EQUIPMENT.
(2) EVACUATE ALL FORCASTED FLOOD AREAS BY 1530HRS
(3) ENGINE CO. DECON OF PEOPLE WHO ENTERED FLOOD WATER.
(4) SECURE FLOOD AREAS - DENY ENTRY

8. SPECIAL INSTRUCTIONS

- DO NOT ENTER FLOOD AREA WITHOUT PERSONAL FLOTATION
- FLOOD WATER CONTAMINATED - IF ENTERED - MUST DECON.
- CITY WATER CONTAMINATED - DRINK ONLY BOTTLED.
- RECORD ALL ACTIVITIES ON FORM 214

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL	154.280		4	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL		154.430		2	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME

ICS 204 1-82

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
WEST	C	

3. INCIDENT NAME: FLOOD

4. OPERATIONAL PERIOD: DATE 11/13/02 TIME 1300 — 0600

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF: JR. RENTERIA
DIVISION/GROUP SUPERVISOR: K. HELM
BRANCH DIRECTOR: J. BERGERON
AIR TACTICAL GROUP SUPERVISOR:

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME
E-4	PETULA	4			
E-5	MELTON	4			
E-6	LEE	4			
ALS-3	MARTIN	2			

7. CONTROL OPERATIONS

1. PRIORITIZE ALL REQUESTS FOR SERVICE - LIFE, ENVIRONMENT, PROPERTY, EQUIPMENT.
2. EVACUATE ALL FORCASTED FLOOD AREAS BY 1530HRS
3. ENGINE CO. DECON OF PEOPLE WHO ENTERED FLOOD WATER.
4. SECURE FLOOD AREAS - DENY ENTRY

8. SPECIAL INSTRUCTIONS

- DO NOT ENTER FLOOD AREA WITHOUT PERSONAL FLOTATION
- FLOOD WATER CONTAMINATED - IF ENTERED - MUST DECON.
- CITY WATER CONTAMINATED - DRINK ONLY BOTTLED.
- RECORD ALL ACTIVITIES ON FORM 214

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL	154.280		4	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL		155.160		3	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
	D. Taylor		

ICS 204 1-82

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
WEST	D	

3. INCIDENT NAME: FLOOD

4. OPERATIONAL PERIOD — DATE 11/13/02 — TIME 1300 — 0600

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF: J.R. RENTERIA — DIVISION/GROUP SUPERVISOR: C. WORK

BRANCH DIRECTOR: J. BERQERON — AIR TACTICAL GROUP SUPERVISOR:

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME
E-7	GREATHOUSE	4			
E-109	BUTLER	4			
ALS-2	BREATENBACK	2			

7. CONTROL OPERATIONS

(1) PRIORITIZE ALL REQUESTS FOR SERVICE - LIFE, ENVIRONMENT, PROPERTY, EQUIPMENT.
(2) EVACUATE ALL FORCASTED FLOOD AREAS BY 1530HRS
(3) ENGINE CO. DECON OF PEOPLE WHO ENTERED FLOOD WATER.
(4) SECURE FLOOD AREAS - DENY ENTRY

8. SPECIAL INSTRUCTIONS

- DO NOT ENTER FLOOD AREA WITHOUT PERSONAL FLOTATION
- FLOOD WATER CONTAMINATED - IF ENTERED - MUST DECON.
- CITY WATER CONTAMINATED - DRINK ONLY BOTTLED.
- RECORD ALL ACTIVITIES ON FORM 214

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL	154.280		4	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL		155.160		3	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
	D. [illegible]		

ICS 204 1-82

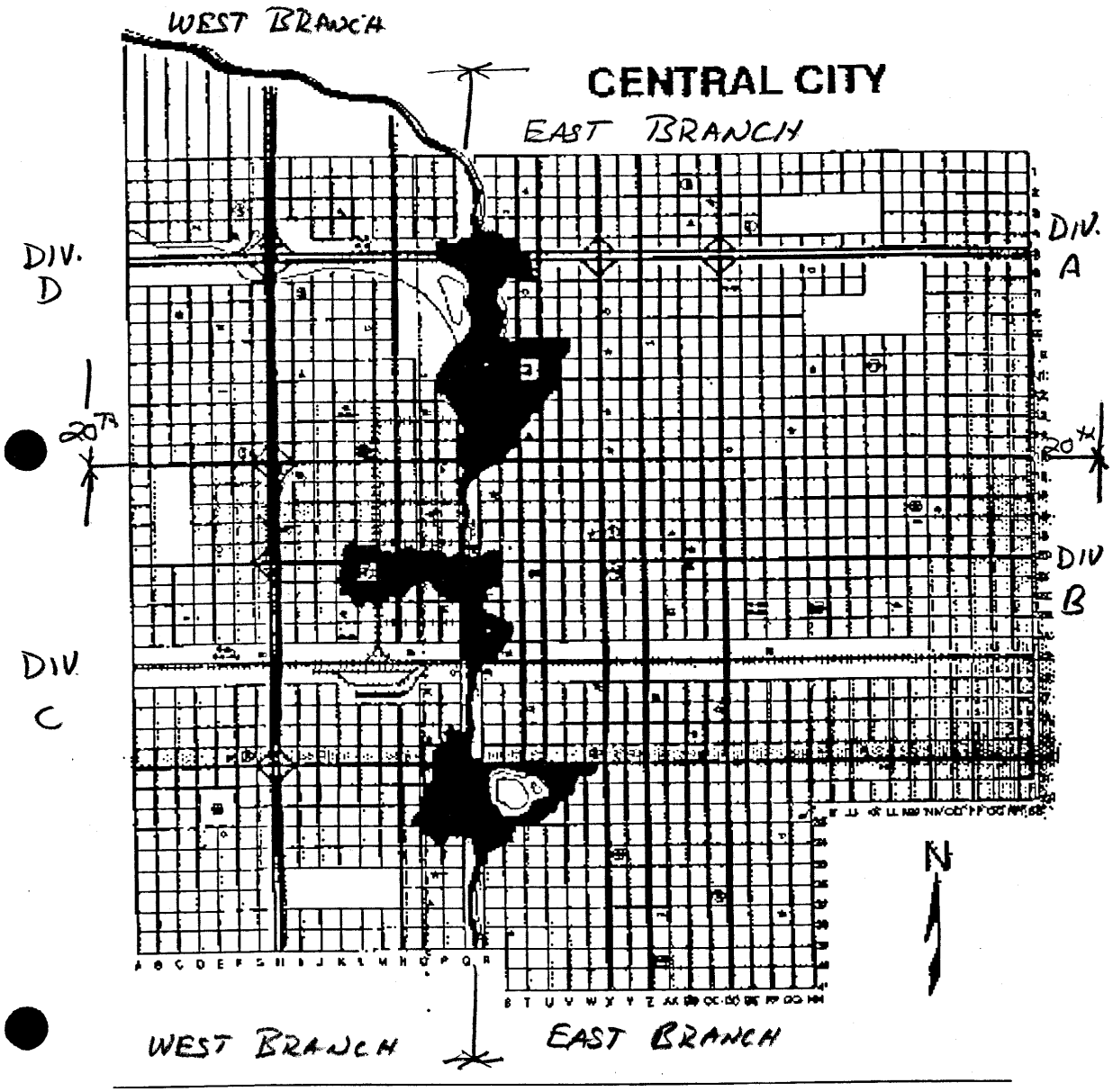
INCIDENT RADIO COMMUNICATIONS PLAN	1. INCIDENT NAME	2. DATE/TIME PREPARED	3. OPERATIONAL PERIOD DATE/TIME
	FLOOD	11/13/02 1130	11/13/02 1300 TO 0600

4. BASIC RADIO CHANNEL UTILIZATION

SYSTEM/CACHE	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMARKS
CENTRAL CITY	1	DISPATCH	154.250		
CENTRAL CITY	2	TACTICAL	154.430	EAST BRANCH	
CENTRAL CITY	3	TACTICAL	155.160	WEST BRANCH	
CENTRAL CITY	4	COMMAND	154.250	COMMAND THROUGH DIVISIONS	

205 ICS 9/86	5. PREPARED BY (COMMUNICATIONS UNIT)

1800 Hours: Projected Inundation Area(s)



~~ICS 223~~
Incident Action Plan **Health and Safety Message**

Incident Name: CENTRAL CITY FLOOD	Date Prepared: 11/13/02	Time Prepared: 1000 hrs.
Operational Period Date: From: APRIL 1, 02 To: APRIL 2, 02	Operational Period Time: From: 1300 To: 0600	

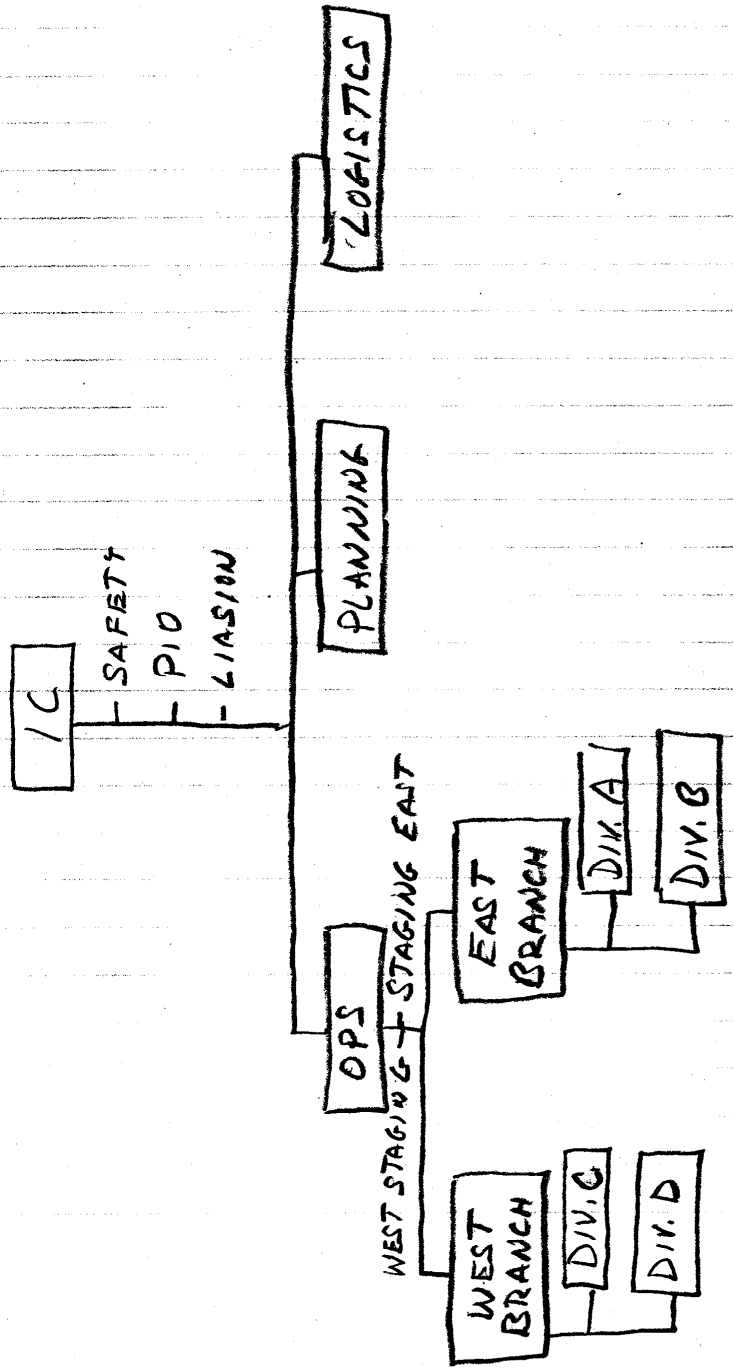
Major Hazards and Risks:

Low-lying area flooding
SWIFT WATER
STRUCTURAL DAMAGE
LIMITED RESOURCES (12 hrs)
RESTRICTED TRAVEL
CONTAMINATED WATER / INFECTIOUS DISEASE ISSUES / NEED DRINKING H_2O
POSS. LOSS OF COMMUNICATIONS + POWER
HEALTHCARE FOR FF'S (DECON + GEAR REPLACEMENT)
FLOATING DEBRIS
HAZMAT RELEASE

Narrative:

The immediate hazard will be from high, swift water. All personnel are required to wear PFD when operating within 20' of floodwater and in boots. Use of turnout gear is not recommended also. Personnel should report the location of and use caution near compromised structures. Travel routes to hospitals and evac centers should be determined as conditions change. Use of medivac should be considered as weather permits. All water is presumed to be contaminated. Limit contact w/water when possible. All locations should secure loose items and consider moving to upper floors. Generators should be started and run. All apparatus should be fueled up prior to 1300 hrs. Decon procedures should be reviewed w/ field personnel and hospital staff. Beware of floating debris + HAZMAT releases.

Prepared By: M. ROHL	Company Name:	ICS Position: Safety Officer
Approved By:	Company Name:	ICS Position:


I/C
SAFETY
PIO
LIASION
LOGISTICS
PLANNING
OPS
WEST STAGING
STAGING EAST
WEST BRANCH
EAST BRANCH
DIV. C
DIV. D
DIV. A
DIV. B

MEDIA NEWS RELEASE

Due to heavy rains during the last 6 days and the continuation of more rain, we expect major flooding to occur within the next six hours. We expect the flooding to encompass all streets that lie within 7 blocks of both sides of the Roaring River.

The flooding should start at 2:00 pm today. Roadways into and out of the area will be affected. Therefore, if you live or work in that area, we URGE you to evacuate. Take your pets with you. Turn off all utilities to your home including electricity, gas, and water service. Lock your homes. Be prepared to stay away from your home for up to 7 days.

Do not contact floodwater. Do not attempt to drive through floodwater. More people drown in their cars than anywhere else. Do not attempt to walk through floodwater. The water is often deeper and faster than you anticipate.

Three shelters are open at schools in the city. If you need shelter, go to one of these schools. The locations of these schools are F & 12th, NN & 18th, and Z & 37th. If you cannot make it to the shelters, go to a fire station. We will have someone there 24 hours a day to help you. Our fire units will be on the streets to help our citizens. DO NOT go to Fire Station 2 at T &10th, station 6 at L &21st, and station 8 at W & 29th. They will be closed as they are close to the River.

All city drinking water is considered contaminated during the flood. Therefore, drink water that has been boiled for a minimum of 10 minutes, or drink bottled water. We will advise when the water system has been declared safe for drinking.

Keep abreast of developments through all of the local radio and TV stations. If you have specific questions, please call our Public Information # at 1-800-555-1212. If you have any type of emergency, call 911.

Media Facility @ X & 26th

INCIDENT OBJECTIVES	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
4. OPERATIONAL PERIOD (DATE/TIME)			
5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)			
6. WEATHER FORECAST FOR OPERATIONAL PERIOD			
7. GENERAL SAFETY MESSAGE			
8. ATTACHMENTS (√ IF ATTACHED)			
o ORGANIZATION LIST (ICS 203)	o MEDICAL PLAN (ICS 206)	o _____	
o ASSIGNMENT LIST (ICS 204)	o INCIDENT MAP	o _____	
o COMMUNICATIONS PLAN (ICS 205)	o TRAFFIC PLAN	o _____	
202 ICS 3-80	9. PREPARED BY (PLANNING SECTION CHIEF)	10. APPROVED BY (INCIDENT COMMANDER)	

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED

OPERATIONAL PERIOD (DATE/TIME)

POSITION	NAME
4. Incident Commander and Staff	
INCIDENT COMMANDER	
DEPUTY	
SAFETY OFFICER	
INFORMATION OFFICER	
LIAISON OFFICER	

5. AGENCY REPRESENTATIVES

AGENCY	NAME

6. PLANNING SECTION	
CHIEF	
DEPUTY	
RESOURCES UNIT	
SITUATION UNIT	
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	

7. LOGISTICS SECTION	
CHIEF	
DEPUTY	
a. SUPPORT BRANCH	
DIRECTOR	
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	
b. SERVICE BRANCH	
DIRECTOR	
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

8. Operations Section		
CHIEF		
DEPUTY		
a. Branch I - Division/Groups		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
b. Branch II - Division/Groups		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
c. BRANCH III - DIVISION/GROUPS		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
d. AIR OPERATIONS BRANCH		
AIR OPERATIONS BR. DIR.		
AIR TACTICAL GROUP SUP.		
AIR SUPPORT GROUP SUP.		
HELICOPTER COORDINATOR		
AIR TANKER/FIXED-WING CRD.		
FINANCE SECTION		
CHIEF		
DEPUTY		
TIME UNIT		
PROCUREMENT UNIT		
COMPENSATION/CLAIMS UNIT		
COST UNIT		

203 ICS 1-82 | 9. PREPARED BY (RESOURCES UNIT)

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST

3. INCIDENT NAME	4. OPERATIONAL PERIOD DATE _____ TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF _____ DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

8. SPECIAL INSTRUCTIONS

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME

INCIDENT RADIO COMMUNICATIONS PLAN

1. INCIDENT NAME	2. DATE/TIME PREPARED	3. OPERATIONAL PERIOD DATE/TIME

4. BASIC RADIO CHANNEL UTILIZATION

SYSTEM/CACHE	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMARKS

205 ICS 9/86	5. PREPARED BY (COMMUNICATIONS UNIT)

ICS 204 1-82MEDICAL PLAN	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED	4. OPERATIONAL PERIOD

5. INCIDENT MEDICAL AID STATIONS

MEDICAL AID STATIONS	LOCATION	PARAMEDICS	
		YES	NO

6. TRANSPORTATION

A. AMBULANCE SERVICES

NAME	ADDRESS	PHONE	PARAMEDICS	
			YES	NO

B. INCIDENT AMBULANCES

NAME	LOCATION	PARAMEDICS	
		YES	NO

7. HOSPITALS

NAME	ADDRESS	TRAVEL TIME		PHONE	HELIPAD		BURN CENTER	
		AIR	GRND		YES	NO	YES	NO

8. MEDICAL EMERGENCY PROCEDURES

206 ICS 8-78	9. PREPARED BY (MEDICAL UNIT LEADER)	10. REVIEWED BY (SAFETY OFFICER)

UNIT LOG	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
4. UNIT NAME/DESIGNATORS	5. UNIT LEADER (NAME AND POSITION)	6. OPERATIONAL PERIOD	

7. PERSONNEL ROSTER ASSIGNED

NAME	ICS POSITION	HOME BASE

8. ACTIVITY LOG (CONTINUE ON REVERSE)

TIME	MAJOR EVENTS	

ICS Form 214

Operational Planning Worksheet

1. INCIDENT NAME	2. DATE PREPARED	TIME PREPARED	3. OPERATIONAL PERIOD (DATE/TIME)

4. DIVISION OR OTHER LOCATION	5. WORK ASSIGNMENTS	6. RESOURCES BY TYPE (SHOW STRIKE TEAM AS ST)							7. REPORTING LOCATION	8. REQUESTED ARRIVAL TIME
		RESOURCE								
		TYPE								
		REQ								
		HAVE								
		NEED								
		REQ								
		HAVE								
		NEED								
		REQ								
		HAVE								
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		HAVE								
		NEED								
		REQ								
		HAVE								
		NEED								
		REQ								
		HAVE								
		NEED								
		REQ								
		HAVE								
		NEED								
215 ICS 9-66	9. TOTAL RESOURCES REQUIRED	SINGLE RESOURCES / STRIKE TEAMS							10. PREPARED BY (NAME AND POSITION)	
	TOTAL RESOURCES ON HAND									
	TOTAL RESOURCES NEEDED									

Activity 3.2:
Incident Action Planning
Student Activity Worksheet

Time: 165 minutes

60 minutes—directions and group work
45 minutes—planning meeting
60 minutes—class discussion

Purpose:

To demonstrate the ability to plan response capabilities in a manner that maximizes efforts in providing emergency services.

Directions:

1. Your instructor will divide the class into five ICS functional groups:

    - Incident command group
    - Command staff group
    - Operations group
    - Planning group
    - Logistics group

2. You group will be assigned a breakout area. Your group will work as a team, performing this activity from the perspective of your assigned ICS element.

3. Your instructor will review the roles/tasks that each group will assume during this activity (shown on the Incident Management Team Objectives Chart).

    This activity is driven by a fire chief's briefing and maps of forecasted flood conditions. The activity begins with all groups gathering to receive an initial briefing from the Central City Fire Chief (the instructor). The briefing centers on current and projected conditions for a Central City flood.

4. After your instructor has briefed the class, he or she will activate the Incident Management Team. The team's focus is to assimilate information for an IAP. (**Note:** The actual IAP will be assembled/completed after the planning meeting associated with this activity.)

5. You will relocate to your assigned break-out area.

   While in your breakout area, your group will have 45 minutes to:

   - Elect a group spokesperson;
   - Review the flood information;
   - Discuss current and forecasted flood conditions;
   - Develop responses to the tasks listed for your assigned ICS element on the Incident Management Team Objectives sheet; and
   - Complete your portion of the IAP form(s).

6. After the incident command group reviews the flood information and composes its responses, group members will circulate among the other groups in breakout areas. Their job is to ensure that other groups list all tasks necessary to respond to the current emergency.

   Groups will need to interact (for example, operations with IC, plans with logistics, and logistics with operations). Interaction is the only way for you to obtain information to complete your task lists and the necessary forms for the planning meeting.

7. At the conclusion of the allotted time, your instructor will reconvene the class and hold the planning meeting.

   The focus of the planning meeting will be to collect and exchange all information necessary to prepare an IAP for a Central City flood.

   The planning chief (planning group spokesperson) will lead the planning meeting.

   Each group will report its findings to the chief and turn over its ICS form(s).

   The planning chief will be assisted by the instructor and other planning group members, who will begin assembling the plan as each group turns in its completed form(s).

   The planning chief will use the Planning Meeting Checklist to structure the meeting.

   By the end of the meeting, the planning section should have all necessary information and should complete/assemble the IAP.

Once the planning group has completed the IAP and the instructor has checked its work, copies will be made and distributed to students. At that point, an operations briefing will be held using the Operations Briefing Agenda in Table 3-3. The operations briefing will be conducted as though the IMT were briefing the responders before starting the operational period.

Notes:

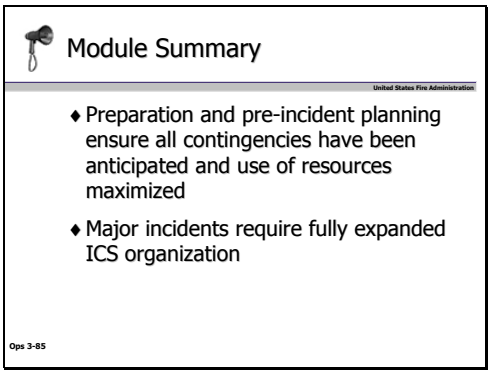
Activity 3.2:
Incident Action Planning
Student Assessment Sheet

While developing your part of the IAP, did you:

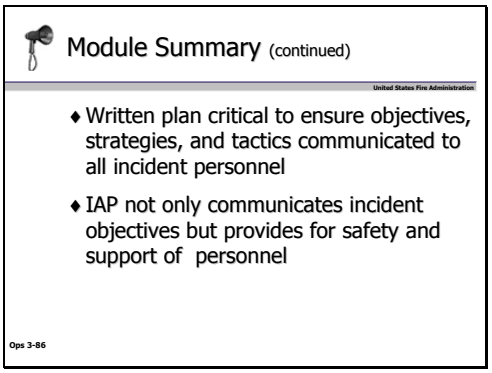
- Identify all problems related to functional assignments?
- Develop solutions for all problems you identified?
- Interact with other functional groups as necessary?
- Identify and handle all of your required tasks (listed on the IMT Objectives sheet)?
- Prepare for the planning meeting

Notes:

Slide 3-85: Module Summary



Slide 3-86: Module Summary (continued)



IX. Module Summary (10 minutes)

- Successful management of major incidents is greatly enhanced by the command and general staff's knowledge and ability to perform the planning function.

- Managing a major incident is not like managing day-to-day emergencies, just more of it. It takes preparation and pre-incident planning to anticipate all contingencies and maximize the use of resources.

- Major emergencies up to and including third-alarm incidents may not require a written IAP. However, major incidents require a fully expanded ICS organization. A written plan is critical to ensure the incident objectives, strategies, and tactics are communicated to all incident personnel.

- When done correctly, the planning process provides a guidance document (the IAP) that not only communicates the incident objectives but also provides for the safety and support of all incident personnel.

MODULE 3

APPENDIX A

STANDARD OPERATING GUIDELINES FORMAT

CENTRAL CITY SOGS FOR:

EARTHQUAKE
HURRICANE
TERRORIST INCIDENT
TORNADO

DEVELOPMENT OF STANDARD OPERATING GUIDELINES AND SUGGESTED FORMAT

When developing Standard Operating Guidelines (SOGs), consideration should be given to their use when developing future Incident Action Plans (IAPs). An effort to capture all required information in the SOGs will reduce IAP development time during the actual incident.

When developing operating guidelines for various types of incidents, the following format will ensure consistency in content.

SOG Format

I. Introduction

Purpose (a statement containing an overview of guidelines, intent, and direction).

II. Procedures

A. Situation Assessment/Size up

This component is intended to provide company officers and battalion commanders with guidance on how to provide for security of department resources and personnel (while fulfilling first responder requirements during the initial stage of a major incident or disaster). Additionally, this component should contain guidelines for situation assessment (to provide command with information on what has happened—Is the incident going to get bigger or smaller? What are present and future resource and organizational needs?).

B. Incident Objectives

This component is intended to provide statements of guidance and direction necessary for the selection of appropriate strategies, and the tactical direction of resources.

1. Information is based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed.

2. It must be achievable and measurable, yet flexible enough to allow for strategic and tactical alternatives.

3. Objectives can be transferred to ICS Form 202 (when operating on an incident that requires a written IAP).

C. Organization

This component describes those of the Incident Command System (ICS) organization that may be deployed to effectively manage the particular type of incident/disaster.

(This portion of the SOG can be transferred to the ICS Form 203 when developing the written IAP.)

D. Strategies

This component provides a general plan or direction selected to accomplish incident objectives. Strategies should answer the question: “What needs to be done?”

Strategies help identify the general control objectives (on ICS Form 202) and tactics and assignments (on ICS Form 204) of the written IAP.

E. Tactics

This component consists of guidelines concerning incident deployment and direction of resources to accomplish a designated strategy. Tactical information should answer the question: “How will it be accomplished?”

This information can be transferred to (ICS Form 204 of) the written IAP.

F. Resources

This component is intended to provide guidelines for identifying, obtaining, and assigning the proper resource to accomplish tactical directions and staffing of critical positions.

This information will help in the development of ICS Forms 203, 204, and 206 as well as staffing of other positions critical to incident operations.

G. Communications

This describes radio channels or frequencies that will be used for each element of the incident organization.

This information can be transferred to ICS Form 205 (of the written IAP).

H. Incident Safety

This component is intended to identify personnel safety hazards associated with the incident/disaster type.

This information can be transferred to ICS Form 202 (of the written IAP). It can also be transferred in an IAP attachment page (usually titled “Safety Message”).

I. Medical Plan

This component should describe what needs to be done in the event of an injured firefighter.

This information can be transferred to the ICS Form 206 in the written IAP.

Once developed, the Incident Management Team (IMT) shall review the SOGs on an annual basis to ensure that the documents contain current information on such matters as lessons learned, department capability changes, new technologies, equipment, and mutual aid agreements.

CENTRAL CITY FIRE DEPARTMENT

STANDARD OPERATING GUIDELINES: EARTHQUAKE

I. Introduction

Purpose: To establish guidelines for the mobilization of resources and lifesaving operations immediately following an earthquake.

Note: The following guidelines should not preclude station personnel from taking the appropriate initiative before an earthquake notification by the dispatch center. There may be instances when an earthquake notification is delayed and the public's best interest is served by taking immediate action.

II. Procedures

A. Situation Assessment/Size-Up

The intent of these guidelines is to provide company officers and battalion commanders with guidance on how to provide for their personnel and secure their administrative site. In addition, they are meant to provide dispatch and command with planning information on the availability of resources and company status in areas with greatest structural damage.

1. Company status and site survey (snapshot survey): When an earthquake occurs, the site supervisor and/or company officer shall:

   a. Ensure the safety of all personnel.

   b. Direct the movement of apparatus to a safe location.

c. Go on radio standby.

d. Determine the status of the site/facility utilities (gas, electricity, and water) and direct the stabilization of any found damage or leakage.

e. Direct a site survey to determine:

* Injuries to personnel.

* Availability of company or unit.

* Availability of other resources at the site.

* Damage to the administrative site using the Earthquake Intensity Rating Level Scale:

Level 0	Nothing felt.
Level 1	Earthquake felt, no damage.
Level 2	Items thrown from shelves; windows broken.
Level 3	Block walls down.
Level 4	Structures shifted off foundations.
Level 5	Structure collapse.

f. Upon completion of the site survey, the company officer or site supervisor shall report the site survey information to the jurisdictional battalion commander within 10 minutes of the event or as soon as possible upon completion.

2. Jurisdictional Survey (Windshield Survey): Provides a situational survey of the preplanned locations for information on the condition of high life hazard occupancies, essential facilities, potential multicasualty incidents, status of major transportation arteries, response routes, and resource needs (for example, structure collapse, fires, hospital status, water systems, dams, and petro-chemical/tank farms).

a. Company officers shall complete a jurisdictional survey:

   * When any administrative site in the battalion has experienced an earthquake with an earthquake intensity rating of a Level 2 or greater.

   * When directed by dispatch.

   * When directed by the jurisdictional battalion commander.

b. The jurisdictional survey shall be conducted with red lights and siren and completed in less than 30 minutes.

c. Company officers shall report jurisdictional survey information to the battalion commander within 30 minutes or immediately upon the completion of respective survey to allow for department-wide emergency planning.

d. The company officer shall only interrupt a primary jurisdictional survey to respond to an immediate life-threatening incident.

   * The company officer shall assume command of the life-threatening incident and provide a status report to the battalion commander.

   * The company officers shall, upon completion of the incident, report the unit's status to the battalion commander and resume the jurisdictional survey.

e. The company officer shall report potential life-threatening incidents encountered during the jurisdictional survey immediately to the

battalion commander. These reports shall be made while continuing the survey.

f. The jurisdictional survey reports shall be made using the following communication priorities:

* Assigned tactical frequency.
* Assigned command frequency.
* Telephone.
* Relay via field units.

g. If unable to contact the jurisdictional battalion commander, the company officer should contact dispatch and relay the jurisdictional status.

h. If a company reports that they are unable to complete a jurisdictional survey, the battalion commander shall assign resources as needed to complete the survey.

i. Company officers shall track all responses and record all pertinent information on an ICS Form 214, including the address, type of call, and any other responding units.

3. Battalion Command: When an earthquake occurs the field battalion chief shall:

a. If not already alerted, ensure that dispatch is aware that an earthquake has occurred in their battalion.

b. When paged by dispatch, report to dispatch the earthquake intensity rating level for their immediate location within 5 minutes.

c. Be prepared to establish a battalion command post within 15 minutes of an earthquake and/or "ALL-CALL" notification:

   * Battalion commanders shall maintain adequate personnel at battalion headquarters to receive site and jurisdictional survey reports and the establishment of a command post.

d. Determine resource needs and forward the request to dispatch if command has not been implemented.

e. Immediately, upon completion, report battalion site and jurisdictional survey information to dispatch and assistant chief or command if established using the following communication priorities:

   * Command channel.

   * Phone.

   * Tactical frequency.

f. If a company reports that they are unable to complete their jurisdictional survey, the battalion commander shall assign resources as needed to complete the survey.

B. Incident Objectives

The intent of these procedures is to provide guidance and direction necessary for the selection of appropriate strategies, and the tactical direction of resources.

1. All decision-making and action plans will be based on the departmental priorities of:

a. Protecting life.

b. Protecting property.

c. Protecting the environment.

d. Assisting other agencies.

2. Assign resources according to the following priorities:

   a. Life-threatening incidents, such as rescues, persons trapped, collapsed buildings, and structure fires.

   b. Potential life-threatening incidents, such as inside gas leaks and elevator rescues.

   c. Non-life-threatening incidents, such as flooding, public assists, fire alarms, and gas leaks outside.

   d. As units become available, reassign them using the same priorities listed above.

C. Organization

These guidelines describe what elements of the ICS organization may be deployed to effectively manage an earthquake.

1. Command structure—In the event of a large-area disaster, the command structure can be configured in several ways depending on the needs of the incident.

2. The decision to establish area command, a complex, or operate as a single large incident should be strongly influenced by where the planning, logistics, and finance functions would best serve the organization. The key to this decision

would be an organization that did not overlook a function and limited duplication of functions.

3. Develop an organization from the start to meet the expected needs of the incident (for example, if you think the incident will eventually require an area command organization, then start with area command).

4. Command shall develop broad objectives, strategies, and resource priorities to manage the entire disaster area.

D. Strategies

This component provides a general plan or direction selected to accomplish the incident objectives and answers: "What needs to be done?"

1. Establish the immediate priorities.

2. Develop a command organization.

3. Request adequate/specialized resources and do it early.

4. Establish incident facilities.

5. Establish communications with assisting agencies and exchange liaison officers with essential agencies.

6. Ensure that adequate safety measures are in place.

7. Update the fire chief and the city Emergency Operations Center (EOC) on a regular basis.

8. Ensure the development of a written IAP for each operational period.

E. Tactics

This component gives guidelines on the deployment and directing of resources on an incident to accomplish a designated strategy and answers: “How it will be accomplished.”

1. Incident assignments will be reduced to one unit for each incident.

2. The company officer shall notify the battalion commander of any significant working incidents, such as structure fires, hazardous materials, and persons trapped.

3. The company officer shall prioritize and handle outstanding incidents, documenting all actions on ICS form 214.

4. Battalion commanders shall establish a battalion command.

   a. Battalion commanders will not be responded on incidents by dispatch.

   b. Develop a written IAP using ICS Form 201.

   c. Display the situation information for significant incidents, such as fires, hazardous materials, and persons trapped.

   d. Establish an action item list.

   e. Monitor radio traffic and identify where battalion resources are committed.

   f. Develop an organization for the battalion, including possible division boundaries, staging locations, and number of overhead required.

g. Battalion commanders shall record all pertinent information on an ICS Form 214.

h. Prepare to brief the assistant fire chief or command.

F. Resources

The intent of these guidelines is for obtaining, and assigning of proper resources to accomplish the tactical directions and staffing of critical positions.

1. Off-duty personnel

a. If damage is localized:

* Recall of shift personnel shall be altered so that those employees that live in the area least affected by the earthquake are recalled first.

* Shift personnel who voluntarily call in for an assignment shall be recalled if necessary.

* If possible, shift personnel shall be recalled to cover for employees who are on duty and who live in the area most affected by earthquake damage.

* If proper relief is provided, or coverage can be made, the on-duty shift personnel may be released to go home to check on their families. These personnel shall return to their assignments after attending to the needs of their families.

b. If damage is extensive and widespread:

* Shift personnel shall report to their battalion headquarters after stabilizing their families or within 2 hours of the event.

c. Develop and implement a plan to use volunteers, both department and convergent.

G. Communications

The intent of these procedures is to expedite responses to alarms and to maintain an effective communications system in both the affected and unaffected areas of the community during a major incident or disaster.

1. Establish communication link with Central City Police Department, County Sheriff, and Central City EOC.

2. Establish communications with assisting agencies and cooperative agencies and exchange liaison officers with essential agencies.

3. Ensure department representative is responded to the Central City EOC.

4. Dispatch will relay to the Central City EOC (when it becomes operational) the jurisdictional survey information for processing.

5. Dispatch center to make contact with mutual aid departments and obtain a status of resource availability.

6. Dispatch shall also forward the survey information to the assistant fire chief or command, if not already advised.

7. The Dispatch Communication Plan has two (2) dispatch modes.

a. Mode 1: Normal dispatching procedures.

b. Mode 2: Disaster mode:

* During this mode, dispatch will send all responses to operations, branch, division, or group as directed by the IMT Incident Commander (IC).

* Dispatch shall not dispatch resources to obvious non-life-threatening incidents such as public assist and water leaks.

* All units go to radio standby.

* Dispatch may respond companies from adjoining jurisdictions to life-threatening incidents within another unit's jurisdiction if that unit is committed to another life-threatening incident.

* Commanders may intervene, directing dispatch to assign multiple incidents to jurisdictional companies or multiple companies to a single incident.

H. Incident Safety

1. During an earthquake, all personnel shall seek the closest, safe refuge and assist others in doing the same.

2. All personnel in fire department structures shall report to the personnel reporting area as soon as it is safe to do so.

3. Factor in the possibility of a major aftershock in all decisions.

I. Medical Plan

This component should describe what needs to be done in the event of an injured firefighter.

1. Upon the activation of an IMT, a medical unit shall be established and a medical plan shall be developed using ICS Form 206.

2. The medical plan shall be communicated to all personnel down to the leader level.

CENTRAL CITY FIRE DEPARTMENT

STANDARD OPERATING GUIDELINES: HURRICANE

I. Introduction

Purpose: To establish guidelines for the mobilization of resources and lifesaving operations immediately following a hurricane.

II. Procedures

A. Situation Assessment/Size-Up

The intent of these procedures is to provide Central City Fire Department commanding officers with guidance on how to provide for their personnel and secure their administrative site. In addition, they are meant to provide the Central City Communication Center, Central City IMT, and Central City EOC with planning information on the availability of resources and company status in areas with greatest structural damage.

1. Company status and site survey (snapshot survey). Upon the passing of a hurricane event and after sustained winds have diminished below 40 miles per hour, the site supervisor and/or commanding officer shall:

   a. Ensure the safety of all personnel.

   b. Direct the movement of apparatus to a safe location.

   c. Go on radio standby and determine the status of the site/facility utilities (gas, electricity, and water) and direct the stabilization of any found damage or leakage.

d. Direct a site survey to determine:

* Injuries to personnel.

* Availability of company or unit.

* Availability of other resources at the site (fire station).

e. Upon completion of the site survey, the company officer of site supervisor shall report the site survey information to the communications center, IMT, and the EOC.

2. Jurisdictional Survey (Windshield Survey): Provides a situational survey of the pre-planned locations for information on the condition of high life hazard occupancies, essential facilities, potential multicasualty incidents, status of major transportation arteries, response routes, and resource needs (for example, structure collapse, fires, hospital status, water systems, dams, and petro-chemical/tank farms). Commanding officers shall complete a jurisdictional survey:

a. Upon hurricane winds diminishing to sustained winds below 40 mph.

b. When directed by communications center.

c. When directed by the IMT.

d. Jurisdictional survey shall be conducted with red lights and siren.

e. Commanding officer shall report jurisdictional survey information to the communications center, IMT, and the EOC IMMEDIATELY after the completion of respective survey (to

allow for department-wide emergency planning).

f. Commanding officer shall interrupt a primary jurisdictional survey only to respond to an immediate life-threatening incident.

g. Commanding officer shall assume command of the life-threatening incident and provide a status report to the IMT.

h. Commanding officer shall (upon completion of the incident) report the unit's status to the communications center and IMT and resume the jurisdictional survey.

i. Commanding officer shall report potential life-threatening incidents (encountered during the jurisdictional survey) immediately to the communications center and IMT. These reports shall be made while continuing the survey.

j. Jurisdictional survey reports shall be made using the following communication priorities:

   * Assigned radio frequency.

   * Telephone.

   * Cellular telephone.

k. If a commanding officer reports that they are unable to complete a jurisdictional survey, the IMT shall assign resources as needed to complete the survey.

3. Area Command: It is anticipated that an area command structure will be established following a hurricane event.

a. Area command shall develop broad objectives, planning concerns, and resource priorities to manage the entire disaster area.

b. Area command shall be located in the EOC.

4. Incident Management Teams: Two, full IMTs shall be established to manage the consequences of the hurricane event.

   a. IMTs will geographically split Central City.

   b. East IMT will have responsibility for the area east of the Roaring River.

   c. West IMT will have responsibility for the area west of the Roaring River.

   d. Each IMT shall:

      * Develop an organization from the start to meet the expected needs of the incident.

      * Develop strategies, and resource priorities to manage their area of responsibility.

      * Develop a written IAP for each operational period.

      * Establish communications with assisting agencies.

      * Ensure that adequate safety measures are in place.

      * Update the area commander and EOC on a regular basis.

5. Strategic Considerations: The intent of these procedures is to guide communications center,

IMT, and commanding officers in the triage and decision-making necessary to respond to the consequences of a hurricane event

a. Department priorities.

All decision-making and action plans will be based on the departmental priorities of:

* Protecting life.
* Protecting property.
* Protecting the environment.
* Assisting other agencies.

b. Assigning resources.

Assign resources according to the following priorities.

* Life-threatening incidents, such as rescues, people trapped, collapsed buildings, and structure fires.
* Potential life-threatening incidents, such as gas leaks and elevator rescues.
* Non-life-threatening, such as flooding, public assists, and fire alarms.

B. Incident Safety

1. During a hurricane, all personnel shall seek the closest, safe refuge and assist others in doing the same.

2. All personnel in fire department structures shall report to the Personnel Reporting Area as soon as it is safe to do so.

C. Resources

Off-duty Personnel:

1. If damage is localized recall of shift personnel shall be altered so that those employees that live in the area least affected by the hurricane are recalled first.

2. Shift personnel who voluntarily call in for an assignment shall be recalled if necessary.

3. If possible, shift personnel shall be recalled to cover for employees who are on duty and who live in the area most affected by hurricane damage. If proper relief is provided, or coverage can be made, the on-duty shift personnel may be released to go home to check on their families. These personnel shall return to their assignments after attending to the needs of their families.

4. If damage is extensive and widespread, shift personnel shall report to their battalion headquarters after stabilizing their families or within 2 hours of the event.

5. Develop and implement a plan to use volunteers – both department and convergent.

CENTRAL CITY FIRE DEPARTMENT

STANDARD OPERATING GUIDELINES: TERRORISM

I. Introduction

Purpose: To establish guidelines for the mobilization of resources and lifesaving operations immediately following terrorist incident.

II. Procedures

A. Situation Assessment/Size-Up

The intent of these guidelines is to provide company officers and incident command with guidance on how to care for the security of department personnel and resources while making an incident assessment during the initial stage of a major incident or disaster.

1. First arriving company: responsible for providing the initial size-up.

2. Approach uphill/upwind/upstream: select a route that will take you uphill, upwind, and upstream from the incident.

3. Consider worst case: all unknown substances will be considered a lethal substance until proven otherwise.

4. Prepare for immediate egress: position apparatus for immediate egress and maximum personnel safety.

5. Protective clothing: all personnel shall be in full PPE with SCBA.

6. The size-up should answer the following questions:

   a. What happened?

   b. Is the incident going to get bigger or smaller?

   c. What are present and future resource needs?

   d. What are present and future organizational needs?

7. Critical cues: size-up should consider the following critical cues:

   a. Weather—wind direction, speed, temperature, and humidity.

   b. Plume direction.

   c. Topography.

   d. Population in danger.

   e. Number of casualties.

   f. Victim signs and symptoms (that could indicate NBC agents).

   g. Witness statements or observations.

   h. Time of day.

B. Incident Objectives

The intent of this component is to provide statements of guidance and direction necessary for the selection of appropriate strategies, and the tactical direction of resources.

1. Protection of life.

2. Protection of the environment.

3. Protection of the crime scene.

4. Protection of property and equipment.

C. Organization

An NBC terrorist incident may require command to anticipate the full expansion of the ICS with unified command to include multijurisdiction and multi-agencies. Develop an organization from the start to meet the expected needs of the incident (for example, if you think the incident will eventually require a fully expanded ICS with unified command, then start it that way).

1. Command Post and Staging Locations: the first arriving command officer should select appropriate command post and staging locations. These locations should be uphill/upwind from the incident and large enough to accommodate the resources for unified command. Dispatcher should provide this information to all assisting agencies.

   Establish the incident facilities as far away as possible to reduce exposure or possibility of relocation due to wind change.

2. Unified Command: the unified command is responsible for notifying the appropriate agencies, acquiring the necessary resources, and coordinating all of the activities at the scene to properly handle the incident. Scene management responsibilities continue until the emergency has ended and order has been restored.

3. Cleanup/Final Clearance: the cleanup of an NBC incident is the responsibility of the Department of Health Services who will coordinate with state, Federal, and private agencies to obtain an all clear on the equipment and property involved.

   Federal assets will be needed for conducting low level monitoring, detection, and identification to verify and certify the site is safe to reoccupy.

4. Crime Scene: a terrorist incident is a crime scene. Law enforcement, headed by the Federal Bureau of Investigation, is responsible for the preservation of evidence and security of the crime scene.

5. Evacuation: the responsibility for evacuation usually rests with law enforcement; however, the fire department IC is almost always consulted before evacuation is initiated. The IC should make the decision to evacuate or shelter-in-place early on in the incident. If the IC decides to evacuate, he or she should meet with law enforcement to plan:

   a. The area to be evacuated.

   b. The priorities of the evacuation.

   c. The access and egress routes.

   d. The location of evacuation shelters.

D. Strategies

This component provides a general plan or direction selected to accomplish the incident objectives. A strategy should answers the question: “What needs to be done?”

1. Establish the immediate priorities (safety first—then rescue).

2. Develop a command organization.

3. Make notifications early.

4. Request adequate/specialized resources (and do it early).

5. Establish incident facilities.

6. Establish communications with assisting agencies and exchange liaison officers with essential agencies.

7. Ensure that adequate safety measures are in place

8. Update the fire chief and City EOC on a regular basis.

9. Ensure the development of an IAP for each operational period.

E. Tactics

This component gives guidelines on the deployment and directing of resources to accomplish a designated strategy. A tactic should answer the question: "How it will be accomplished?"

1. Rescue:

   a. Rescue Plan: a rescue plan will be formulated whenever practical. Rescue team(s) will be briefed on the plan before entry. The minimum rescue plan should identify:

      * The boundaries of the exclusion zone (hot zone).

* The location of refuge area(s) within the exclusion zone.

* The location of the contamination reduction zone (outside of the exclusion zone).

* The safe refuge area within the contamination reduction zone.

* The location of the support zone.

* The location of access control points (into and out of these zones).

b. Rescue teams should approach a spill from uphill/upwind whenever possible.

c. Rescue team leaders will be responsible for providing the IC with ongoing status reports.

d. Egress from the exclusion zone (for all victims and rescue team personnel) will be through the decontamination corridor into a contamination reduction zone.

e. If contaminated, victims must be moved before the establishment of a decontamination corridor. They should be moved to a predetermined location of safe refuge (within the exclusion zone) where they can remain until the decontamination corridor can be established.

f. Noncontaminated victims should be moved to the safe refuge area located in the contamination reduction zone.

2. Make notifications. Early notification of type and magnitude of incident to the communications center, hospitals, and other medical facilities (to

warn of mass casualties and self transported contaminated victims) is important.

3. Stabilize incident.

   a. Isolate the area.

      * Establish exclusion and contamination reduction zones.

      * Give specific verbal instructions and warn people of dangers.

      * Establish and maintain crowd control.

      * Walking casualties or possible exposed people should be corralled upwind, upgrade, and segregated.

        They should be held in a safe refuge area to await decontamination.

      * Within the limits of your PPE, carry out non-ambulatory victims and conduct rescue operations.

      * Small children and the elderly are more susceptible to toxic effects and therefore may need special attention.

   b. Deny entry.

      * Cordon off the area (to prevent people from entering or leaving).

      * The site (and down wind hazard area) must be secured and entry restricted.

   c. Shelter-in-place versus evacuation. Consider:

* Wind direction and speed.

* Population to be moved.

* Hospitals and schools in the path.

* Where to evacuate to, how long it will take, and what means of transportation would be used.

* If the chemical agent is in the area.

d. Protect the environment.

* Runoff should be contained when possible (but don't delay decontamination of victims to do so).

* Contain away from leading edge of runoff (to reduce exposure of personnel).

e. Protect the crime scene.

* Remember, this is a crime scene—every effort should be taken to preserve evidence that could be used to apprehend and prosecute the perpetrators.

4. Decontamination considerations.

a. NBC agents could require decontamination of numerous people (possibly hundreds or even thousands).

b. Due to their high toxicity and fast action, NBC agents must be rapidly removed to reduce exposure.

c. The following is a list of decontamination considerations:

* Time is critical.

* Need large area out of the exclusion zone. Area should be uphill and upwind so that contaminated runoff will flow back into the already contaminated area.

* Communicate by loudspeaker/PA (for example, what you want the exposed people to do).

* Casualties must be kept out of the exclusion zone (but still controlled).

* Isolate upwind, uphill, upstream.

* Separate those with symptoms from those with no symptoms.

* Use hose lines and elevated streams (low pressure fog) to rain down (like a shower) on the people. Arms should be out and legs spread. Wash top down, blot agent off in a pinching motion, and do not rub.

* If available, 1:10 solution of household bleach is best to remove (and neutralize) chemical and biological contamination. Use one gallon of bleach to ten gallons of water.

* Use soap and water for radiological agents.

* Wetting people down (prior to stripping) will help keep the agent on the clothes.

* Have them strip down to their undergarments—note that pantyhose go

(approximately 80 percent of contamination will be removed).

* Expect modesty to be a problem (separate sites for men and women/use screens for separation).

* Collect personnel items, bag, and identify.

* Provide cover after decontamination (for example, blankets and sheets).

* Establish defensive control operations (such as diking) to contain runoff and limit the spread of contamination. Anticipate runoff to enter sewer system, streams, and rivers and notify proper authorities.

* Provide emergency medical care after decontamination is completed.

* Decedents and their personnel effects will be managed by the coroner's office; however, contaminated bodies or items shall need to go through decontamination first.

* Need Federal assets in conducting low level monitoring, detection, and identification (to verify and certify that the site is safe to re-occupy).

5. EMS considerations

   a. Establish a medical branch or group.

      * Establish triage, treatment, and transportation of victims in a clean area.

      * Large enough to hold all casualties.

* Locate the treatment area between the triage area and the transportation area.

b. Ensure all responders are aware of the signs and symptoms.

c. Assume victims may still have some contamination on them.

d. Wear PPE and use mechanical ventilation.

e. Drug therapy is required to stabilize casualties.

f. Interface with local hospitals receiving casualties.

g. Consider mass transit to move casualties.

h. After working in EMS areas, consider yourself contaminated and go through decontamination.

i. Limit the number of responders exposed to victims.

j. Keep contaminated clothing away from victim's face when removing (cut away).

6. Chemical Downwind Hazard Analysis

a. Depending on the concentration of the agent, people downwind of the release can become victims. However, just as with any HAZMAT incident, the cloud will eventually be diluted by air to the point that it poses no further hazard.

b. The weather plays a major role in determining the potential for down wind contamination hazards. Just as with your everyday HAZMAT incident, wind speed, direction, temperature,

and humidity are all factors that must be considered.

c. At wind speeds below 6 mph, the cloud tends to disperse evenly in all directions around the release. At speeds above 6 mph, the cloud tends to form a “pear shaped” plume down wind.

d. The *North American Emergency Response Guidebook* is a good reference to help establish the downwind hazard area. When using this reference you can follow these steps:

Step 1: Look up the chemical identification number in the blue pages. If you don’t know the exact agent, or its name is not there, use the agent class.

* Nerve agents ID 2810.
* Blood agents ID 1051.
* Blister agents ID 2810.
* Choking agents ID 1076.

If unknown agent or class, use ID 2810 until more exact information is available.

Step 2: Look up the identification number in green pages and read across to establish the initial isolate and protect distances. A small spill is less than 55 gallons, and a large spill is more than 55 gallons.

Step 3: On a map of the incident draw a circle, to scale, using the isolate distance as the radius. The center of the circle will be the center of the release site. Draw a line from the center of the circle in the direction of the wind and indicate

the wind speed above the line. Then, using the protect distance, draw a line perpendicular to the wind direction through the center of the circle. This line represents the upwind edge of a square box which is the protect distance on each side. You have now identified the potential hazard area and the toxic plume should pass somewhere within this area. You can identify the leading edge of the plume by multiplying the wind speed by the time.

Now that you have a prediction of where the hazard might exist, you can decide if you are going to evacuate or shelter in place.

e. Radiological and biological hazard predictions can be determined by contacting the National Response Center (NRC) for technical assistance.

F. Resources

The intent of these guidelines is to provide for identifying, obtaining, and assigning of proper resources to accomplish the tactical directions and staffing of critical positions.

Off-duty personnel:

1. Personnel working in full PPE and Level A suits can become exhausted. Consider recall of off-duty personnel for crew rotation and rehabilitation and do it early.

2. Recall of shift personnel shall be altered so that those employees that live in the area least affected by the terrorist incident are recalled first.

3. Shift personnel who voluntarily call in for an assignment shall be called if necessary.

4. If possible, shift personnel shall be recalled to cover for employees who are on duty and who live in the area or have family members affected by the terrorist attack.

G. Communications

The intent of these guidelines is to insure adequate communications is established and maintained to support the incident.

1. Establish communication links with Central City Police Department, County Sheriff, and Central City EOC.

2. Establish communications with assisting agencies and cooperative agencies and exchange liaison officers with essential agencies.

3. Ensure department representative is responded to the Central City EOC.

4. Dispatch center to make contact with mutual aid departments and obtain a status of resource availability.

H. Incident Safety

The intent of these guidelines is to identify the personnel safety hazards associated with a terrorist incident.

1. Limit the number of responders who will be exposed to any NBC agents.

2. Stay upwind, uphill, and up stream.

   a. A minimum safe distance from a chemical attack is 700 feet (exclusion zone) and a

minimum of 1/3 mile (1,750 feet) for an explosive.

b. Be aware of ventilation exhaust ports from the incident site such as from buildings and subways.

3. In no case should you come in contact with a victim without the proper PPE to safely do the job.

4. Only Level A protection is recommended for initial entry into a chemical agent exclusion zone until the actual agent and health risk is known. To adjust the level of equipment you need advanced detection equipment.

5. Structural firefighting PPE can be compared to OSHA level C protection and will protect against inhalation exposure but only provides limited splash protection and no protection against skin absorption.

   May provide adequate protection against airborne biological agents and some radiological materials.

6. Be alert for secondary devices.

7. After working in the hot or warm zone, consider yourself contaminated and go through decontamination. When in doubt, decontaminate!

8. Be alert for signs and symptoms of agent exposure among responders.

9. Follow up with medical assessments after incident to ensure response personnel have not been contaminated with agent.

I. Medical Plan

The intent of these guidelines is to describe what needs to be done in the event of an injured firefighter.

1. All supervisors shall be watchful of their personnel for signs of exposure to chemical agents.

2. All personnel that exhibit signs or symptoms of exposure to and NBC agents must immediately go through decon and then receive the appropriate treatment.

3. Do not transport contaminated incident personnel without being decontaminated.

4. Incident injuries, not related to an NBC agent, that require emergency treatment should be transported to the closest appropriate receiving facility. Other more minor injuries shall be treated by the medical unit as identified in the incident IAP.

5. All designated medical units will have rehab capability.

CENTRAL CITY FIRE DEPARTMENT

STANDARD OPERATING GUIDELINES: TORNADO

I. Introduction

Purpose: To establish guidelines for the mobilization of resources and lifesaving operations immediately following a tornado touchdown event.

II. Procedures

A. Situation Assessment/Size-Up

The intent of these procedures is to provide Central City Fire Department commanding officers with guidance on how to provide for their personnel and secure their administrative site. In addition, they are meant to provide the Central City communications center, Central City Fire Department IMT, and Central City EOC with planning information on the availability of resources and resources status in areas with greatest damage.

1. Company status and site survey (snapshot survey): Upon a tornado touchdown occurring, the site supervisor and/or company officer shall:

   a. Ensure the safety of all personnel.

   b. Direct the movement of apparatus to a safe location.

   c. Go on radio and determine the status of the site/facility utilities (gas, electricity, and water) and direct the stabilization of any found damage or leakage.

d. Direct a site survey to determine:

* Injuries to personnel.
* Availability of company or unit.
* Availability of other resources at the site.
* Damage to the administrative site (fire station).

e. Upon completion of the site survey, the commanding officer shall report the site survey information to the communications center, IMT, and EOC.

2. Jurisdictional Survey (Windshield Survey): Provides a situational survey of the preplanned locations for information on the condition of high life hazard occupancies, essential facilities, potential multicasualty incidents, status of major transportation arteries, response routes, and resource needs (for example, structure collapse, fires, hospital status, water systems, dams, and petro-chemical/tank farms). Commanding officers shall complete a jurisdictional survey.

a. After a tornado touchdown event has occurred and it is deemed safe to respond.

b. When directed by the dispatch center.

c. When directed by the IMT.

d. Jurisdictional survey shall be conducted with red lights and siren.

e. Commanding officers shall report jurisdictional survey information to the communications

center, IMT, and EOC immediately upon the completion of respective survey to allow for department-wide emergency planning.

f. Commanding officer shall interrupt a primary jurisdictional survey only to respond to an immediate life-threatening incident.

g. Commanding officer shall assume command of the life-threatening incident and provide a status report to the IMT.

h. Commanding officer shall (upon completion of the incident) report the unit's status to the communications center and IMT and then resume the jurisdictional survey.

i. Commanding officer shall report potential life-threatening incidents encountered during the jurisdictional survey immediately to the communications center and IMT. These reports shall be made while continuing the survey.

j. Jurisdictional survey reports shall be made using the following communication priorities:

   * Assigned radio frequency.

   * Telephone.

   * Cellular telephone.

k. If a commanding officer reports that he or she is unable to complete a jurisdictional survey, the IMT shall assign resources as needed to complete the survey.

B. Incident Command: After a tornado touchdown occurs the CCFD IMT shall be activated and assembled at a command post site outside of the touchdown area.

C. Organization

1. Geographical or functional branches are to be established for command and control of damaged areas.

2. Establish an incident staging area.

3. Maintain adequate personnel at the command post site and to receive site and jurisdictional survey reports.

4. Determine resource needs and request resources from the communications center.

5. All incident resources shall respond to the incident staging area for deployment into branches as required.

D. Strategies

The intent of these procedures is to guide communications center, IMT, and commanding officers in the triage and decision-making necessary to respond to a tornado touchdown incident.

1. Department Priorities: All decision-making and action plans will be based on the departmental priorities of:

   a. Protecting life.

   b. Protecting property.

   c. Protecting the environment.

   d. Assisting other agencies.

2. Assigning Resources: Assign resources according to the following priorities.

   a. Life-threatening incidents, such as rescues, persons trapped, collapsed buildings, and structure fires.

   b. Potential life-threatening incidents, such as gas leaks and elevator rescues.

   c. Non-life-threatening incidents, such as flooding, public assists, and fire alarms.

3. Incident Commander: In the event of a tornado touchdown incident the IC shall:

   a. Develop an organization from the start to meet the expected needs of the incident.

   b. Develop broad objectives, strategies, and resource priorities to manage the entire disaster area.

   c. Ensure the development of a written IAP for each operational period.

   d. Determine incident objectives and strategy.

   e. Establish the immediate priorities.

   f. Establish communications with assisting agencies.

   g. Ensure that adequate safety measures are in place.

   h. Update the EOC on a regular basis.

4. Incident Management Team

   a. Develop a written IAP using ICS Form 201.

   b. Display the situation information for significant incidents, such as fires, hazardous materials, and persons trapped.

   c. Establish an action item list.

   d. Monitor radio traffic and identify where resources are committed.

   e. Develop and implement a plan to use volunteers (departmental or convergent).

   f. Branch directors shall record all pertinent information on an ICS Form 214.

   g. Prepare to brief the EOC.

E. Resources

Off-duty personnel:

1. If damage is localized, recall of shift personnel shall be altered so that those employees that live in the area least affected by the tornado touchdown are recalled first.

2. Shift personnel who voluntarily call in for an assignment shall be recalled if necessary.

3. If possible, shift personnel shall be recalled to cover for employees who are on duty and who live in the area most affected by the tornado touchdown. If proper relief is provided, or coverage can be made, the on-duty shift personnel may be released to go home to check on their families.

These personnel shall return to their assignments after attending to the needs of their families.

4. If damage is widespread, shift personnel shall report to their battalion headquarters after stabilizing their families or within 2 hours of the event.

5. Develop and implement a plan to use volunteers, both department and convergent.

F. Incident Safety

1. Upon receiving a tornado warning, all personnel shall seek safe refuge below ground if possible and assist others in doing the same.

2. All personnel in fire department structures shall report to the Personnel Reporting Area as soon as it is safe to do so.

3. Factor in the possibility of a second tornado touch down.

MODULE 3

APPENDIX B

SAMPLE INCIDENT ACTION PLANS

CENTRAL CITY

CENTRAL CITY

HURRICANE INCIDENT

6-25-98

(SAMPLE INCIDENT ACTION PLAN)

C O T C
Operations

OBJECTIVES	1. INCIDENT NAME ***Area*** ***Hurricane INC***	2. DATE PREPARED ***6/25/98***	3. TIME PREPARED

4. OPERATIONAL PERIOD (DATE/TIME)
First

5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)

- Provide for life safety of both the public & incident responders.
- Provide for the mitigation of life threatening hazards.
- Provide for the protection of the environment.
- Protect & minimize damage to property & equipment.

6. OBJECTIVES FOR THIS OPERATIONAL PERIOD.

- Ensure safety of public & responders.
- Prioritize requests--Life, Environment, Property, Equipment.
- Provide EMS care.
- Prevent conflagration--hold fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate, stabilize, isolate all life-threatening hazards.
- Provide assistance to other agencies.
- Stay visible to public & provide assistance and reassurance.

7. WEATHER FORECAST FOR OPERATIONAL PERIOD

8. GENERAL SAFETY MESSAGE

- Use caution in low-lying areas that are prone to flooding.
- Response routes will have debris obstructing driving lane.
- Be observant for haz mat releases.
- All floodwater shall be considered contaminated from haz mat & sewage.
- All personnel entering floodwater must go through decon.
- Slow down & think before you act.

9. ATTACHMENTS (√ IF ATTACHED)

☐ ORGANIZATION LIST (ICS 203)	☐ MEDICAL PLAN (ICS 206)	☐ _____
☐ ASSIGNMENT LIST (ICS 204)	☐ INCIDENT MAP	☐ _____
☐ COMMUNICATIONS PLAN (ICS 205)	☐ TRAFFIC PLAN	☐ _____

ICS 202 5.94	10. PREPARED BY (PLANNING SECTION CHIEF) ***Ted Hoffman***	11. APPROVED BY (INCIDENT COMMANDER) ***Dave Evans***

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
Hurricane	*6/25/98*	

POSITION **Area** NAME

OPERATIONAL PERIOD (DATE/TIME) ***First***

4. Incident Commander and Staff

INCIDENT COMMANDER	*Dave Evans*
DEPUTY	
SAFETY OFFICER	
INFORMATION OFFICER	
LIAISON OFFICER	

5. AGENCY REPRESENTATIVES

AGENCY	NAME

6. PLANNING SECTION

CHIEF	*Ted Hoffman*
DEPUTY	
RESOURCES UNIT	
SITUATION UNIT	
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	

7. LOGISTICS SECTION

CHIEF	*Jimmy Parker*
DEPUTY	
a. SUPPORT BRANCH	
DIRECTOR	
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	
b. SERVICE BRANCH	
DIRECTOR	
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

8. Operations Section

CHIEF		
DEPUTY		
a. Branch I - Division/Groups		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
b. Branch II - Division/Groups		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
c. BRANCH III - DIVISION/GROUPS		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
d. AIR OPERATIONS BRANCH		
AIR OPERATIONS BR. DIR.		
AIR TACTICAL GROUP SUP.		
AIR SUPPORT GROUP SUP.		
HELICOPTER COORDINATOR		
AIR TANKER/FIXED-WING CRD.		
FINANCE SECTION		
CHIEF		
DEPUTY		
TIME UNIT		
PROCUREMENT UNIT		
COMPENSATION/CLAIMS UNIT		
COST UNIT		

203 ICS 1-82 9. PREPARED BY (RESOURCES UNIT)

C O T C
Operations

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
Hurricane	*6/25/98*	

POSITION ***West IC*** NAME

OPERATIONAL PERIOD (DATE/TIME) ***First***

4. Incident Commander and Staff

INCIDENT COMMANDER	*Jim Scherer*
DEPUTY	
SAFETY OFFICER	*Ed Delp*
INFORMATION OFFICER	*Ed Delp*
LIAISON OFFICER	*Ed Delp*

5. AGENCY REPRESENTATIVES

AGENCY	NAME

6. PLANNING SECTION

CHIEF	*Floyd Lecuyer*
DEPUTY	*Ellery Stowell*
RESOURCES UNIT	
SITUATION UNIT	
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	

7. LOGISTICS SECTION

CHIEF	*Skip Koening*
DEPUTY	*Ray Sullivan*

a. SUPPORT BRANCH

DIRECTOR	
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	

b. SERVICE BRANCH

DIRECTOR	
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

8. Operations Section

CHIEF	*Ross Hawkins*
DEPUTY	*Madric*

a. ***S & R-Suppression*** Branch I - Division/Groups

BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		

b. ***EMS*** branch ii - division/groups

BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		

c. ***HAZ MAT*** BRANCH III - DIVISION/GROUPS

BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		

d. AIR OPERATIONS BRANCH

AIR OPERATIONS BR. DIR.	
AIR TACTICAL GROUP SUP.	
AIR SUPPORT GROUP SUP.	
HELICOPTER COORDINATOR	
AIR TANKER/FIXED-WING CRD.	

FINANCE SECTION

CHIEF	
DEPUTY	
TIME UNIT	
PROCUREMENT UNIT	
COMPENSATION/CLAIMS UNIT	
COST UNIT	

203 ICS 1-82

9. PREPARED BY (RESOURCES UNIT)

NFES 1327

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
Search & Rescue Suppression	*Suppression*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
West IC Hurricane Inc.	DATE *6/25/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ross Hawkins* DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Prioritize all requests for service--life, environment, property, equip.
- Provide initial EMS.
- Prevent conflagration--hold fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate, stabilize, isolate all life-threatening hazards.
- Stay visible to public & provide assistance & reassurance.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- Keep Branch Director advised of availability of resources & need for additional/specialized resources
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND *DISPATCH*	LOCAL			*4*	SUPPORT	LOCAL			
	REPEAT			*1*		REPEAT			
DIV/GROUP TACTICAL				*3*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Ellery Stowell	*Floyd Lecuyer*	*6/25/98*	

ICS 204 1-82

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
EMS	*Triage Treatment*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD
West IC *Hurricane Inc.*	DATE *6/25/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF Ross Hawkins
DIVISION/GROUP SUPERVISOR _____
BRANCH DIRECTOR _____
AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Provide emergency medical services to those in need.
- Provide triage of the injured using the START system.
- Provide technical assistance on EMS issues to first responders.
- Assist other agencies.

8. SPECIAL INSTRUCTIONS

- Order all medical supplies through Logistics.
- Use BLS personnel where appropriate to conserve the use of ALS resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*4*	SUPPORT	LOCAL			
Dispatch	REPEAT			*1*		REPEAT			
DIV/GROUP TACTICAL				*3*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Ellery Stowell	*Floyd Lecuyer*	*6/25/98*	

ICS 204 1-82

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
S & R Suppression	*USAR*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD
West IC *Hurricane Inc.*	DATE *6/25/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ross Hawkins* DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--Life, Environment, Property, Equipment.
- Provide technical rescue services to those in need.
- Provide technical assistance to first responders.
- Assist assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- All confined spaces shall be considered IDLH until proven otherwise by atmospheric monitors.
- Use first responders to complete non-technical tasks to conserve on use of USAR specialist resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND *DISPATCH*	LOCAL			*4*	SUPPORT	LOCAL			
	REPEAT			*1*		*REPEAT*			
DIV/GROUP TACTICAL				*3*	*GROUND-TO-AIR*				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
E. Stowell	*Floyd Lecuyer*	*6/25/98*	

ICS 204 1-82

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
EMS	Patient Transportation	

3. INCIDENT NAME	4. OPERATIONAL PERIOD
West IC Hurricane Inc.	DATE 6/25/98 TIME

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF: Ross Hawkins
DIVISION/GROUP SUPERVISOR:
BRANCH DIRECTOR:
AIR TACTICAL GROUP SUPERVISOR:

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Provide emergency medical services to those in need.
- Provide triage of the injured using the START system.
- Provide technical assistance on EMS issues to first responders.
- Assist other agencies.

8. SPECIAL INSTRUCTIONS

- Order all medical supplies through Logistics.
- Use BLS personnel where appropriate to conserve the use of ALS resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			4	SUPPORT	LOCAL			
DISPATCH	REPEAT			1		REPEAT			
DIV/GROUP TACTICAL				3	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Ellery Stowell	Floyd Lecuyer	6/25/98	

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP *Haz Mat*	**ASSIGNMENT LIST**
3. *INCIDENT NAME* *West IC* *Hurricane Inc.*		4. OPERATIONAL PERIOD *DATE* *6/25/98* *TIME* _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ross Hawkins*

DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--protect Life, Environment, Property, Equipment.
- Containment of all actual or threatened hazardous substance releases.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- Use FRO-level personnel where appropriate to conserve on use of haz mat specialist personnel.
- All haz mat incidents shall be managed using the standardized tactical approach.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*4*	SUPPORT	LOCAL			
DISPATCH	REPEAT			*1*		REPEAT			
DIV/GROUP TACTICAL				*3*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Ellery Stowell	*Floyd Lecuyer*	*6/25/98*	

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
Hurricane	6/25/98	

POSITION East IC NAME

OPERATIONAL PERIOD (DATE/TIME) First

4. INCIDENT COMMANDER AND STAFF

INCIDENT COMMANDER	Bill Becker
DEPUTY	
SAFETY OFFICER	Rod Neufield
INFORMATION OFFICER	Tom O'Neal
LIAISON OFFICER	Tom O'Neal

5. AGENCY REPRESENTATIVES

AGENCY	NAME

6. PLANNING SECTION

CHIEF	Terry McClimens
DEPUTY	Daryl Payton
RESOURCES UNIT	
SITUATION UNIT	
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	

7. LOGISTICS SECTION

CHIEF	Dan Dickerson
DEPUTY	Ed Fitzgerald

a. SUPPORT BRANCH

DIRECTOR	
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	

b. SERVICE BRANCH

DIRECTOR	
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

8. OPERATIONS SECTION

CHIEF	Ted Korgenski
DEPUTY	Dave Balthis

a. S & R Suppression BRANCH I - DIVISION/GROUPS

BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		

b. EMS BRANCH II - DIVISION/GROUPS

BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		

c. Haz Mat BRANCH III - DIVISION/GROUPS

BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		

d. AIR OPERATIONS BRANCH

AIR OPERATIONS BR. DIR.	
AIR TACTICAL GROUP SUP.	
AIR SUPPORT GROUP SUP.	
HELICOPTER COORDINATOR	
AIR TANKER/FIXED-WING CRD.	

FINANCE SECTION

CHIEF	
DEPUTY	
TIME UNIT	
PROCUREMENT UNIT	
COMPENSATION/CLAIMS UNIT	
COST UNIT	

203 ICS 1-82

9. PREPARED BY (RESOURCES UNIT)

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
Search & Rescue Suppression	*Suppression*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
East IC *Hurricane Inc.*	DATE *6/25/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ted Korgenski* DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Prioritize all requests for service--Life, Environment, Property, Equipment.
- Provide initial EMS.
- Prevent conflagration--hold fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate, stabilize, isolate all life-threatening hazards.
- Stay visible to public & provide assistance & reassurance.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- Keep branch director advised of availability of resources & need for additional/specialized resources.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*4*	SUPPORT	LOCAL			
Dispatch	REPEAT			*1*		REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
D. Payton	*T. McClimens*	*6/25/98*	

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
S & R Suppression	*USAR*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
East IC *Hurricane Inc.*	DATE *6/25/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ted Korgenski* DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--Life, Environment, Property, Equipment.
- Provide technical rescue services to those in need.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- All confined spaces shall be considered IDLH until proven otherwise by atmospheric monitors.
- Use first responders to complete non-technical tasks to conserve on use of USAR specialist resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*4*	SUPPORT	LOCAL			
Dispatch	REPEAT			*1*		REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
D. Payton	*T. McClimens*	*6/25/98*	

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
EMS	*Triage/Treat*	

3. INCIDENT NAME
East IC
Hurricane Inc.

4. OPERATIONAL PERIOD *First*
DATE *6/25/98*
TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ted Korgenski*
DIVISION/GROUP SUPERVISOR _____
BRANCH DIRECTOR _____
AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS
- *Provide emergency medical services to those in need.*
- *Provide triage of the injured using the START system.*
- *Provide technical assistance on EMS issues to first responders.*
- *Assist other agencies.*

8. SPECIAL INSTRUCTIONS
- *Order all medical supplies through Logistics.*
- *Use BLS personnel where appropriate to conserve the use of ALS resources.*
- *Maintain resource status with chain of command.*
- *Record incident activity on ICS Form 214.*

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*4*	SUPPORT	LOCAL			
Dispatch	REPEAT			*1*		REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
D. Payton	*T. McClimens*	*6/25/98*	

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
EMS	*Patient Transportation*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
East IC *Hurricane Inc.*	DATE *6/25/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ted Korgenski* DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Provide emergency medical services to those in need.
- Provide triage of the injured using the START system.
- Provide technical assistance on EMS issues to first responders.
- Assist other agencies.

8. SPECIAL INSTRUCTIONS

- Order all medical supplies through Logistics.
- Use BLS personnel where appropriate to conserve the use of ALS resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*4*	SUPPORT	LOCAL			
Dispatch	REPEAT			*1*		REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
D. Payton	*T. McClimens*	*6/25/98*	

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP *Haz Mat*	**ASSIGNMENT LIST**
3. INCIDENT NAME *East IC Hurricane Inc.*		4. OPERATIONAL PERIOD *First* DATE *6/25/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ted Korgenski* DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--protect Life, Environment, Property, Equipment.
- Containment of all actual or threatened hazardous substance releases.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

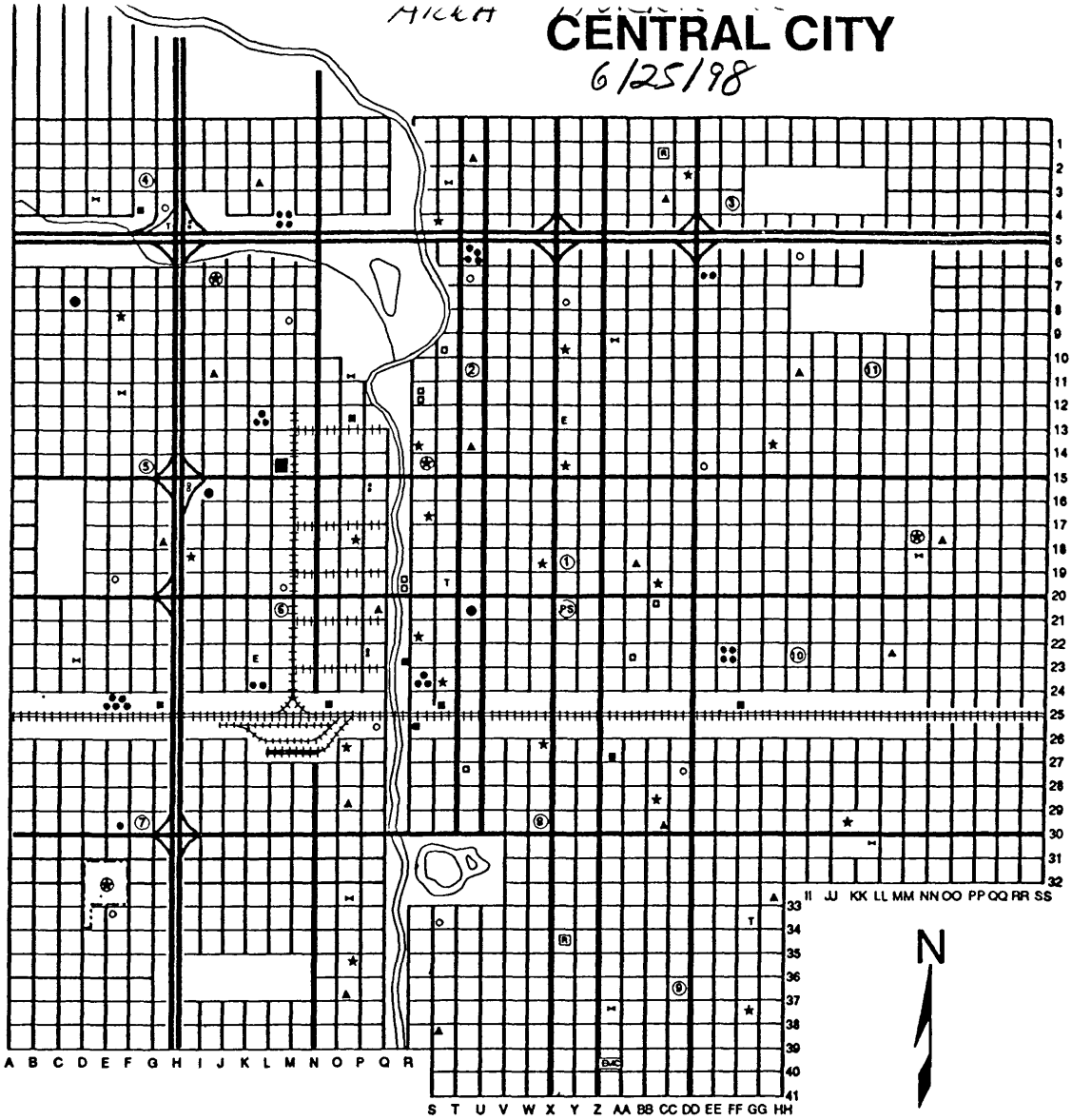
8. SPECIAL INSTRUCTIONS

- Use FRO-level personnel where appropriate to conserve on use of haz mat specialist personnel.
- All haz mat incidents shall be managed using the standardized tactical approach
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

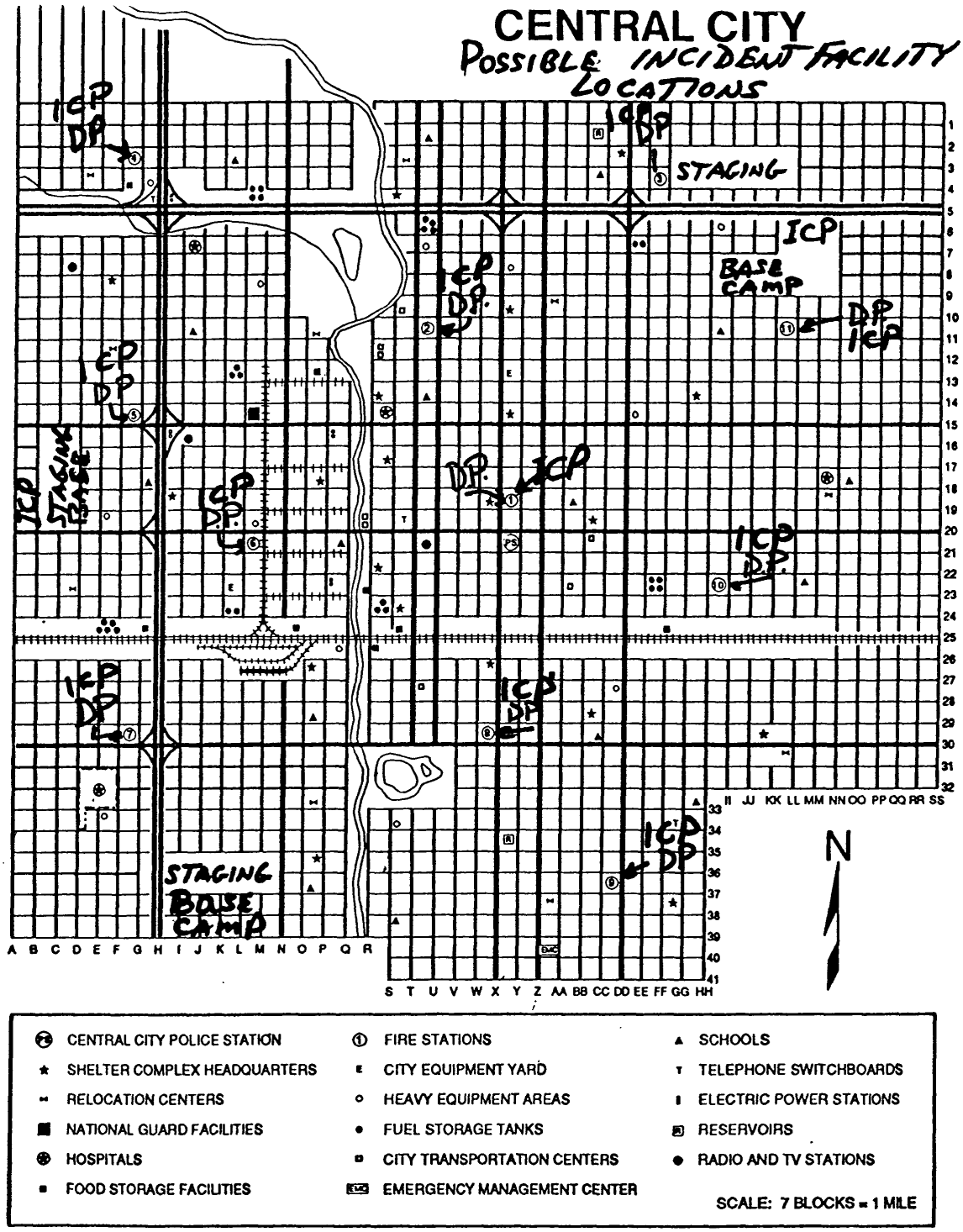
9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*4*	SUPPORT	LOCAL			
Dispatch	REPEAT			*1*		REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
D. Payton	*T. McClimens*	*6/25/98*	



CENTRAL CITY POLICE STATION	FIRE STATIONS	SCHOOLS
SHELTER COMPLEX HEADQUARTERS	CITY EQUIPMENT YARD	TELEPHONE SWITCHBOARDS
RELOCATION CENTERS	HEAVY EQUIPMENT AREAS	ELECTRIC POWER STATIONS
NATIONAL GUARD FACILITIES	FUEL STORAGE TANKS	RESERVOIRS
HOSPITALS	CITY TRANSPORTATION CENTERS	RADIO AND TV STATIONS
FOOD STORAGE FACILITIES	EMERGENCY MANAGEMENT CENTER	SCALE: 7 BLOCKS = 1 MILE


CENTRAL CITY
POSSIBLE INCIDENT FACILITY LOCATIONS
ICP
DP
STAGING
BASE CAMP
STAGING BASE
STAGING BASE CAMP
N
CENTRAL CITY POLICE STATION
SHELTER COMPLEX HEADQUARTERS
RELOCATION CENTERS
NATIONAL GUARD FACILITIES
HOSPITALS
FOOD STORAGE FACILITIES
FIRE STATIONS
CITY EQUIPMENT YARD
HEAVY EQUIPMENT AREAS
FUEL STORAGE TANKS
CITY TRANSPORTATION CENTERS
EMERGENCY MANAGEMENT CENTER
SCHOOLS
TELEPHONE SWITCHBOARDS
ELECTRIC POWER STATIONS
RESERVOIRS
RADIO AND TV STATIONS
SCALE: 7 BLOCKS = 1 MILE

CENTRAL CITY

TORNADO INCIDENT

6-23-98

(SAMPLE INCIDENT ACTION PLAN)

C O T C
Operations

OBJECTIVES	1. INCIDENT NAME *Tornado incident*	2. DATE PREPARED ***6/23/98***	3. TIME PREPARED

4. OPERATIONAL PERIOD (DATE/TIME)
First operational period 1400 hrs. --6-22-98--to 0800 6/23/98

5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)

Provide for the life safety of the public & responders
Provide for the mitigation of life-threatening hazards.
Provide for the protection of the environment.
Provide for the conservation of property.

6. OBJECTIVES FOR THIS OPERATIONAL PERIOD:

- Ensure safety of the public and responders.
- Prioritize all requests for service.
- Provide initial EMS care.
- Prevent conflagration by holding fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate, stabilize, or isolate hazards that could cause injury/damage
- Stay visible to public & provide assistance & reassurance.
- Provide assistance to other agencies

7. WEATHER FORECAST FOR OPERATIONAL PERIOD

Moderate to heavy rain until 2100 hrs. Then reduced to light showers through the night. Day light temp at 65ºF dripping to 45ºF at night. Winds from the s/w at 20 mph. Reduced to 5 to 10 mph after dark.

8. GENERAL SAFETY MESSAGE

- Response routes may have energized lines & debris obstructions
- Be observant for hazardous materials released in the area.
- Watch for utility hazards (electric, gas, water).
- Slow down & think before you act.

9. ATTACHMENTS (√ IF ATTACHED)

- ☐ ORGANIZATION LIST (ICS 203)
- ☐ ASSIGNMENT LIST (ICS 204)
- ☐ COMMUNICATIONS PLAN (ICS 205)
- ☐ MEDICAL PLAN (ICS 206)
- ☐ INCIDENT MAP
- ☐ TRAFFIC PLAN
- ☐ _____
- ☐ _____
- ☐ _____

202 ICS 3-80	10. PREPARED BY (Planning Section Chief) ED DELP	11. APPROVED BY (Incident Commander)

C O T C
Operations

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
Tornado Inc.	*6/23/98*	

OPERATIONAL PERIOD (DATE/TIME)

POSITION	NAME
4. INCIDENT COMMANDER AND STAFF	
INCIDENT COMMANDER	*Ray Sullivan*
DEPUTY	*Ed Fitzgerald*
SAFETY OFFICER	*John Madric*
INFORMATION OFFICER	*Tom Conner*
LIAISON OFFICER	*Tom Conner*

5. AGENCY REPRESENTATIVES	
AGENCY	NAME

6. PLANNING SECTION	
CHIEF	*Eddie Delp*
DEPUTY	
RESOURCES UNIT	*Dan Dickerson*
SITUATION UNIT	*Bill Becker*
DOCUMENTATION UNIT	*Dan Dickerson*
DEMOBILIZATION UNIT	*Bill Becker*
TECHNICAL SPECIALISTS	

7. LOGISTICS SECTION	
CHIEF	*Ellery Stowell*
DEPUTY	
a. SUPPORT BRANCH	
DIRECTOR	*Ted Korgenski*
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	
b. SERVICE BRANCH	
DIRECTOR	*Dave Evans*
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

8. OPERATIONS SECTION		
CHIEF		*Rod Neufeld*
DEPUTY		*Roy Hawkins*
A. *NORTH* BRANCH I - DIVISION/GROUPS		
BRANCH DIRECTOR		*Floyd Lecuyer*
DEPUTY		*Ted Hoffman*
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
b. *CENTRAL* BRANCH II - DIVISION/GROUPS		
BRANCH DIRECTOR		*Tom O'Neal*
DEPUTY		*Dave Bacthis*
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
c. *SOUTH* BRANCH III - DIVISION/GROUPS		
BRANCH DIRECTOR		*Mel Tomes*
DEPUTY		*Skip Koenig*
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
d. AIR OPERATIONS BRANCH		
AIR OPERATIONS BR. DIR.		
AIR TACTICAL GROUP SUP.		
AIR SUPPORT GROUP SUP.		
HELICOPTER COORDINATOR		
AIR TANKER/FIXED-WING CRD.		
FINANCE SECTION		
CHIEF		
DEPUTY		
TIME UNIT		
PROCUREMENT UNIT		
COMPENSATION/CLAIMS UNIT		
COST UNIT		

203 ICS 1-82

9. PREPARED BY (RESOURCES UNIT)

NFES 1327

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
North		

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Tornado Inc.	DATE *6/23/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Rod Neufeld*

BRANCH DIRECTOR *Floyd Lecuyer*

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Prioritize all requests for service.
- Provide initial EMS.
- Prevent conflagration--hold fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate or isolate hazards that could cause injury or additional damage.
- Stay visible to public & provide assistance & reassurance.

8. SPECIAL INSTRUCTIONS

- Keep Branch Director advised of availability of resources & need for additional/specialized resources.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*1*	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Dan Dickerson	*Eddie Delp*		*6/23/98*

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
Central		

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Tornado Inc.	DATE *6/23/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Rod Neufeld*

BRANCH DIRECTOR *Tom O'Neal*

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Prioritize all requests for service.
- Provide initial EMS.
- Prevent conflagration--hold fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate or isolate hazards that could cause injury or additional damage.
- Stay visible to public & provide assistance & reassurance.

8. SPECIAL INSTRUCTIONS

- Keep Branch Director advised of availability of resources & need for additional/specialized resources.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*1*	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				*3*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Dan Dickerson	*Eddie Delp*		*6/23/98*

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
South		

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Tornado Inc.	DATE *6/23/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Rod Neufeld*

BRANCH DIRECTOR *Mel Tomes*

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Prioritize all requests for service.
- Provide initial EMS.
- Prevent conflagration--hold fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate or isolate hazards that could cause injury or additional damage.
- Stay visible to public & provide assistance & reassurance.

8. SPECIAL INSTRUCTIONS

- Keep Branch Director advised of availability of resources & need for additional/specialized resources.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL			*1*	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				*4*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Dan Dickerson	*Ed Delp*		*6/23/98*

1. BRANCH	2. DIVISION/GROUP *EMS*	ASSIGNMENT LIST

3. INCIDENT NAME *Tornado Inc.*	4. OPERATIONAL PERIOD *First* DATE *6/23/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Rod Neufeld*
DIVISION/GROUP SUPERVISOR _____
BRANCH DIRECTOR _____
AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Prioritize emergency medical services to those in need.
- Provide triage of the injured using the START system
- Provide technical assistance on EMS issues to first responders.
- Assist other agencies.

8. SPECIAL INSTRUCTIONS

- Order all medical supplies through Logistics.
- Use BLS personnel where appropriate to conserve the use of ALS resources.
- Maintain resources status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Dan Dickerson	*Ed Delp*		*6/23/98*

1. BRANCH	2. DIVISION/GROUP *USAR*	**ASSIGNMENT LIST**

3. INCIDENT NAME *Tornado Inc.*	4. OPERATIONAL PERIOD *First* DATE *6/23/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Rod Neufeld* DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--Life, Environment, Property, Equipment.
- Provide technical rescue services to those in need.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- All confined spaces shall be considered IDLH until proven otherwise by atmospheric monitors.
- Use first responders to complete non-technical tasks to conserve on use of USAR specialist resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Dan Dickerson	*Ed Delp*		*6/23/98*

1. BRANCH	2. DIVISION/GROUP *Haz Mat*	**ASSIGNMENT LIST**

3. INCIDENT NAME *Tornado Inc.*	4. OPERATIONAL PERIOD *First* DATE *6/23/98* TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Rod Neufeld*
DIVISION/GROUP SUPERVISOR _____
BRANCH DIRECTOR _____
AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--protect Life, Environment, Property, Equipment.
- Containment of all actual or threatened hazardous substance releases.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- Use FRO-level personnel where appropriate to conserve on use of haz mat specialist personnel
- All haz mat incidents shall be managed using the standardized tactical approach.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Dan Dickerson	*Ed Delp*		*6/23/98*

MEDICAL PLAN	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED	4. OPERATIONAL PERIOD

5. INCIDENT MEDICAL AID STATIONS

MEDICAL AID STATIONS	LOCATION	PARAMEDICS	
		YES	NO

6. TRANSPORTATION

A. AMBULANCE SERVICES

NAME	ADDRESS	PHONE	PARAMEDICS	
			YES	NO
Fisherville Amb.	*F & 7th Fisherville*		*1 of 3*	
Bay Port Amb.	*Ferry & 7th Bay Port*		*1 of 2*	
Harvest Junction Amb.	*M & 1st-Harvest Junction*		*1 of 3*	
Kingston	*L & 18th Kingston*		*1 of 3*	
Central City EMS	*10 Fire Stations*		*5 of 10*	

B. INCIDENT AMBULANCES

NAME	LOCATION	PARAMEDICS	
		YES	NO
Med-Flight 1	*Central City Hospital*	*3*	
Flight for Life	*St. Dorthy's Hospital Monroe*	*Dr.*	
Central City EMS	*10 Fire Stations*	*5 of 10*	

7. HOSPITALS

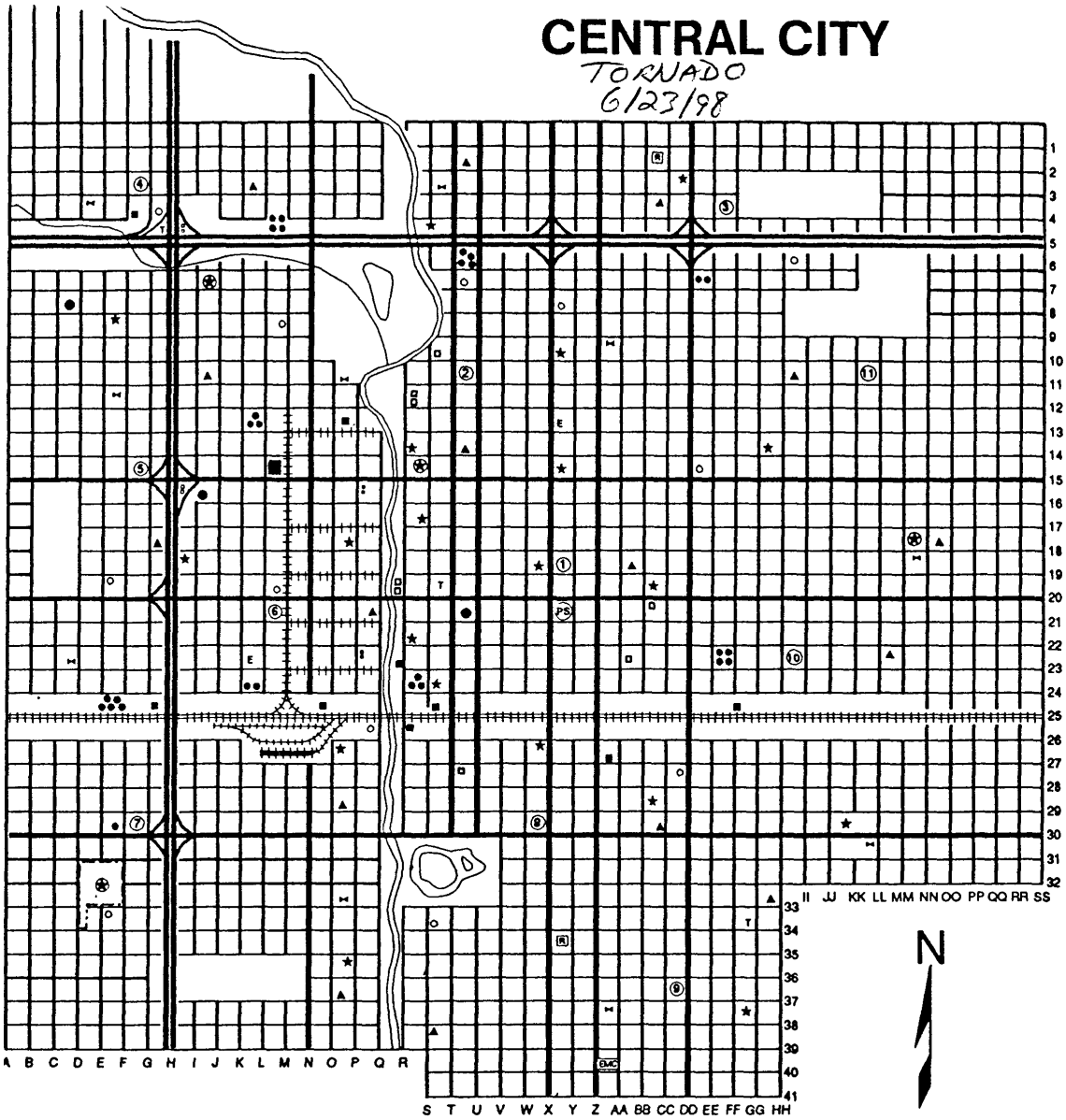
NAME	ADDRESS	TRAVEL TIME		PHONE	HELIPAD		BURN CENTER	
		AIR	GRND		YES	NO	YES	NO
Central City Hospital.	*D & 31st*			*374-1501*	*3*		*3*	
Faith Hospital.	*S & 14th*			*374-0690*				*3*
Lavine Hospital	*MM & 17th*			*436-9197*				*3*
Columbia Veterans	*J & 7th*							*3*

8. MEDICAL EMERGENCY PROCEDURES

- If incident personnel have minor injuries contact Logistics for medical unit assistance.

- Major medical emergencies for incident personnel shall contact dispatch on command channel.

206 ICS 8-78	9. PREPARED BY (MEDICAL UNIT LEADER)	10. REVIEWED BY (SAFETY OFFICER)
	Dave Evans	*John Madric*



CENTRAL CITY POLICE STATION	FIRE STATIONS	SCHOOLS
SHELTER COMPLEX HEADQUARTERS	CITY EQUIPMENT YARD	TELEPHONE SWITCHBOARDS
RELOCATION CENTERS	HEAVY EQUIPMENT AREAS	ELECTRIC POWER STATIONS
NATIONAL GUARD FACILITIES	FUEL STORAGE TANKS	RESERVOIRS
HOSPITALS	CITY TRANSPORTATION CENTERS	RADIO AND TV STATIONS
FOOD STORAGE FACILITIES	EMERGENCY MANAGEMENT CENTER	SCALE: 7 BLOCKS = 1 MILE

CENTRAL CITY

EARTHQUAKE INCIDENT

6-24-98

(SAMPLE INCIDENT ACTION PLAN)

C O T C
Operations

OBJECTIVES	1. INCIDENT NAME ***Earthquake***	2. DATE PREPARED ***6/24/98***	3. TIME PREPARED

4. OPERATIONAL PERIOD (DATE/TIME)
First period

5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)

- Provide for life safety of both the public & responders.
- Provide for protection of environment.
- Protect & minimize damage to property & equipment.

6. OBJECTIVES FOR THIS OPERATIONAL PERIOD:

- Ensure safety of the public & responders.
- Prioritize all requests for service.
- Provide initial EMS care.
- Prevent conflagration--hold fires to building of origin.
- Ensure availability of firefighting water.
- Mitigate, stabilize, or isolate all hazards that could injure.
- Stay visible to the public as much as possible & assist.
- Provide assistance to other agencies.

10. WEATHER FORECAST FOR OPERATIONAL PERIOD

10. GENERAL SAFETY MESSAGE

- Response routes may have many road hazards.
- Watch for haz mat releases.
- Factor in major aftershocks in all decisions.
- Use caution when crossing under/over all bridges.
- Watch for utility hazards (gas, electric, water).
- Slow down & think before you act.

9. ATTACHMENTS (√ IF ATTACHED)

- ☐ ORGANIZATION LIST (ICS 203)
- ☐ MEDICAL PLAN (ICS 206)
- ☐ _____
- ☐ ASSIGNMENT LIST (ICS 204)
- ☐ INCIDENT MAP
- ☐ _____
- ☐ COMMUNICATIONS PLAN (ICS 205)
- ☐ TRAFFIC PLAN
- ☐ _____

ICS 202	10 PREPARED BY (Planning Section Chief) ***Ted Korgenski***	11. APPROVED BY (Incident Commander) ***Dan Dickerson***

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
Earthquake	6/24/98	

OPERATIONAL PERIOD (DATE/TIME): First Period

POSITION	NAME
4. INCIDENT COMMANDER AND STAFF	
INCIDENT COMMANDER	Dan Dickerson
DEPUTY	John Madric
SAFETY OFFICER	Dan Payton
INFORMATION OFFICER	Ellery Stowell
LIAISON OFFICER	

5. AGENCY REPRESENTATIVES

AGENCY	NAME

6. PLANNING SECTION	
CHIEF	Ted Korgenski
DEPUTY	
RESOURCES UNIT	Dave Evans
SITUATION UNIT	Dave Bacthis
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	
7. LOGISTICS SECTION	
CHIEF	Terry McClimens
DEPUTY	
a. SUPPORT BRANCH	
DIRECTOR	Ted Hoffman
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	
b. SERVICE BRANCH	
DIRECTOR	Ed Delp
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

8. OPERATIONS SECTION		
CHIEF		Ed Fitzgerald
DEPUTY		J. Parker/M. Tomes
a. EAST BRANCH I - DIVISION/GROUPS		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
b. WEST BRANCH II - DIVISION/GROUPS		
BRANCH DIRECTOR		Bill Becker
DEPUTY		Scherer/Neufeld
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
c. BRANCH III - DIVISION/GROUPS		
BRANCH DIRECTOR		
DEPUTY		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
d. AIR OPERATIONS BRANCH		
AIR OPERATIONS BR. DIR.		
AIR TACTICAL GROUP SUP.		
AIR SUPPORT GROUP SUP.		
HELICOPTER COORDINATOR		
AIR TANKER/FIXED-WING CRD.		
FINANCE SECTION		
CHIEF		
DEPUTY		
TIME UNIT		
PROCUREMENT UNIT		
COMPENSATION/CLAIMS UNIT		
COST UNIT		

203 ICS 1-82

9. PREPARED BY (RESOURCES UNIT)

NFES 1327

MEDICAL PLAN	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED	4. OPERATIONAL PERIOD

5. INCIDENT MEDICAL AID STATIONS

MEDICAL AID STATIONS	LOCATION	PARAMEDICS	
		YES	NO

6. TRANSPORTATION

A. AMBULANCE SERVICES

NAME	ADDRESS	PHONE	PARAMEDICS	
			YES	NO
Fisherville Amb.	*F & 7th Fisherville*		*1 of 3*	
Bay Port Amb.	*Ferry & 7th Bay Port*		*1 of 2*	
Harvest Junction Amb.	*M & 1st-Harvest Junction*		*1 of 3*	
Kingston	*L & 18th Kingston*		*1 of 3*	
Central City EMS	*10 Fire Stations*		*5 of 10*	

B. INCIDENT AMBULANCES

NAME	LOCATION	PARAMEDICS	
		YES	NO
Med-Flight 1	*Central City Hospital*	*3*	
Flight for Life	*St. Dorthy's Hospital. Monroe*	*Dr.*	
Central City EMS	*10 Fire Stations*	*5 of 10*	

7. HOSPITALS

NAME	ADDRESS	TRAVEL TIME		PHONE	HELIPAD		BURN CENTER	
		AIR	GRND		YES	NO	YES	NO
Central City Hospital.	*D & 31st*			*374-1501*	*3*		*3*	
Faith Hospital.	*S & 14th*			*374-0690*				*3*
Lavine Hospital	*MM & 17th*			*436-9197*				*3*
Columbia Veterans	*J & 7th*							*3*

8. MEDICAL EMERGENCY PROCEDURES

- If incident personnel have minor injuries contact Logistics for medical unit assistance.

- Major medical emergencies for incident personnel shall contact dispatch on command channel.

206 ICS 8-78	10. PREPARED BY (MEDICAL UNIT LEADER)	10. REVIEWED BY (SAFETY OFFICER)
	Jim Parker	*Ed Delp-West, Neufeld-East*

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
West		

3. INCIDENT NAME	4. OPERATIONAL PERIOD First
Earthquake Inc.	DATE 6/24/98
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF Ed Fitzgerald

BRANCH DIRECTOR Bill Becker

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Perform company, site & jurisdictional survey's.
- Mitigate life threatening hazards.
- Respond as directed by Branch Director.
- Provide initial EMS.
- Hold fires to building of origin.
- Ensure availability of firefighting water.

8. SPECIAL INSTRUCTIONS

- Factor in major aftershocks in all decisions.
- Use caution when crossing under/over bridges.
- Watch for utility hazards (Gas, Electric, Water).
- Watch for haz mat releases.
- Inform branch of need/availability of resources.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND Dispatch	LOCAL			1	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				3	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Ted Korgenski	Ted Korgenski	6/24/98	

1. BRANCH	2. DIVISION/GROUP *USAR*	**ASSIGNMENT LIST**

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Earthquake Inc.	DATE *6/24/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ed Fitzgerald*

DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--Life, Environment, Property, Equipment.
- Provide technical rescue services to those in need.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- All confined spaces shall be considered IDLH until proven otherwise by atmospheric monitors.
- Use first responders to complete non-technical tasks to conserve on use of USAR specialist resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.
- Inform branch of need/availability of resources.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
		6/24/98	

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
	Haz Mat	

3. INCIDENT NAME	4. OPERATIONAL PERIOD
Earthquake Inc.	DATE 6/24/98 TIME

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF Ed Fitzgerald
DIVISION/GROUP SUPERVISOR
BRANCH DIRECTOR
AIR TACTICAL GROUP SUPERVISOR

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--protect Life, Environment, Property, Equipment.
- Containment of all actual or threatened hazardous substance releases.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

-Use FRO level personnel where appropriate to conserve on use of haz mat specialist personnel.
- All haz mat incidents shall be managed using the standardized tactical approach.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
		6/24/98	

1. BRANCH	2. DIVISION/GROUP *EMS*	ASSIGNMENT LIST

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Earthquake Inc.	DATE *6/24/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Ed Fitzgerald*

DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- *Provide emergency medical services to those in need.*
- *Provide triage of the injured using the START system.*
- *Provide technical assistance on EMS issues to first responders.*
- *Assist other agencies.*

8. SPECIAL INSTRUCTIONS

- *Order all medical supplies through Logistics.*
- *Use BLS personnel where appropriate to conserve the use of ALS resources.*
- *Maintain resource status with chain of command.*
- *Record incident activity on ICS Form 214.*

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
		6/24/98	

MEDICAL PLAN	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED	4. OPERATIONAL PERIOD

5. INCIDENT MEDICAL AID STATIONS

MEDICAL AID STATIONS	LOCATION	PARAMEDICS	
		YES	NO

6. TRANSPORTATION

A. AMBULANCE SERVICES

NAME	ADDRESS	PHONE	PARAMEDICS	
			YES	NO
Fisherville Amb.	F & 7th Fisherville		1 of 3	
Bay Port Amb.	Ferry & 7th Bay Port		1 of 2	
Harvest Junction Amb.	M & 1st-Harvest Junction		1 of 3	
Kingston	L & 18th Kingston		1 of 3	
Central City EMS	10 Fire Stations		5 of 10	

B. INCIDENT AMBULANCES

NAME	LOCATION	PARAMEDICS	
		YES	NO
Med-Flight 1	Central City Hospital	3	
Flight for Life	St. Dorthy's Hospital. Monroe	Dr.	
Central City EMS	10 Fire Stations	5 of 10	

7. HOSPITALS

NAME	ADDRESS	TRAVEL TIME		PHONE	HELIPAD		BURN CENTER	
		AIR	GRND		YES	NO	YES	NO
Central City Hospital.	D & 31st			374-1501	3		3	
Faith Hospital.	S & 14th			374-0690				3
Lavine Hospital	MM & 17th			436-9197				3
Columbia Veterans	J & 7th							3

8. MEDICAL EMERGENCY PROCEDURES

- If incident personnel have minor injuries contact Logistics for medical unit assistance.

- Major medical emergencies for incident personnel shall contact dispatch on command channel.

206 ICS 8-78	11. PREPARED BY (MEDICAL UNIT LEADER)	10. REVIEWED BY (SAFETY OFFICER)
	Terry McClimens	Darryl Payton

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
East		

3. INCIDENT NAME	4. OPERATIONAL PERIOD ***First***
Earthquake Inc.	DATE ***6/24/98***
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF ***Ed Fitzgerald***

BRANCH DIRECTOR ***Ben Hudgens***

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Perform company site & jurisdictional survey's.
- Mitigate life threatening hazards.
- Respond as directed by Branch Director.
- Provide initial EMS.
- Hold fires to building of origin.
- Ensure availability of firefighting water.

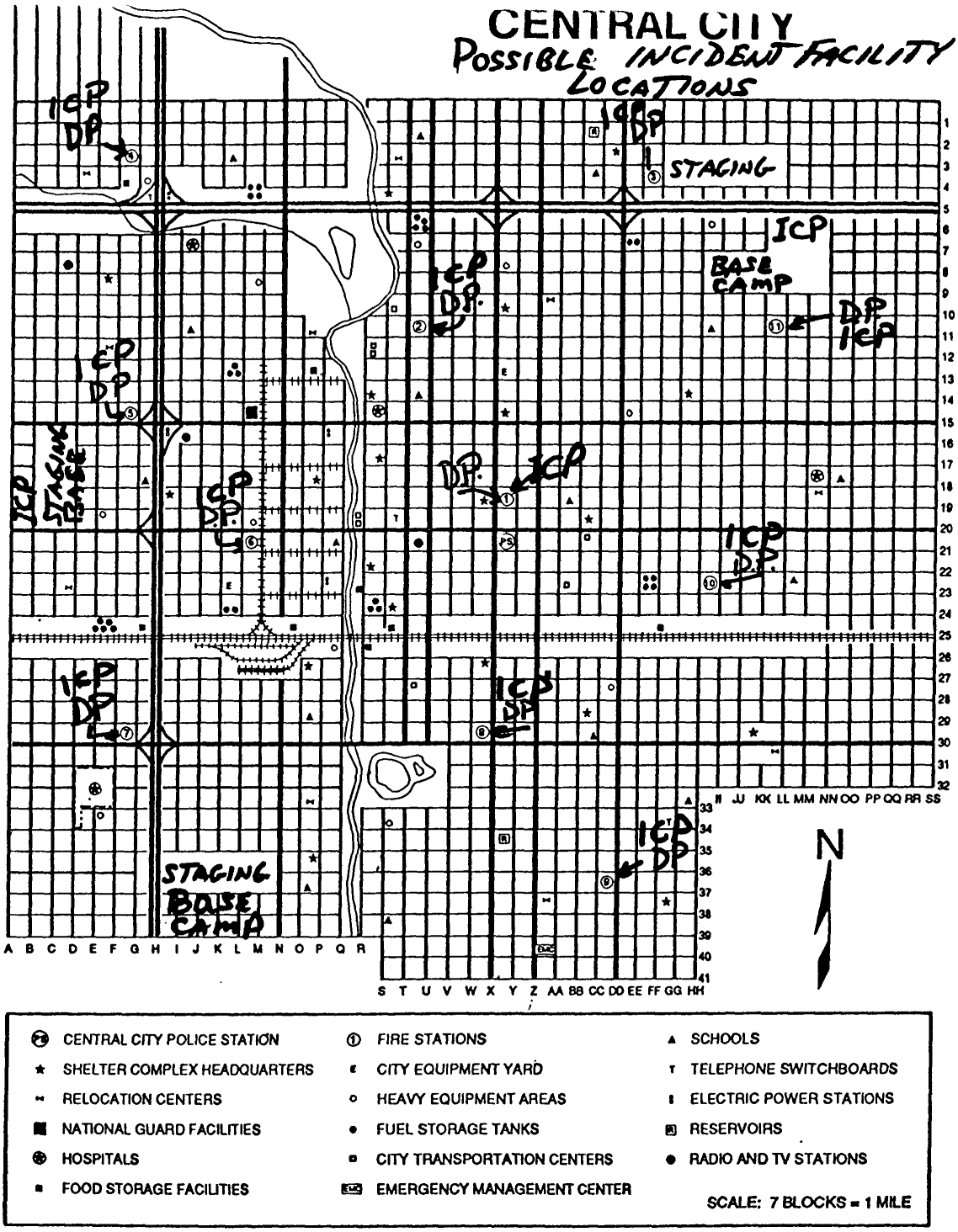
8. SPECIAL INSTRUCTIONS

- Factor in major aftershocks in all decisions.
- Use caution when crossing under/over bridges.
- Watch for utility hazards (Gas, Electric, Water).
- Watch for haz mat releases.
- Inform branch of need/availability or resources.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND ***Dispatch***	LOCAL			***1***	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				***2***	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Ted Korgenski	***Ted Korgenski***	***6/24/98***	


CENTRAL CITY
POSSIBLE INCIDENT FACILITY LOCATIONS
ICP DP
STAGING
ICP
BASE CAMP
DP ICP
ICP DP
ICP STAGING BASE
DP ICP
ICP DP
ICP DP
ICP DP
STAGING BASE CAMP
N
CENTRAL CITY POLICE STATION
SHELTER COMPLEX HEADQUARTERS
RELOCATION CENTERS
NATIONAL GUARD FACILITIES
HOSPITALS
FOOD STORAGE FACILITIES
FIRE STATIONS
CITY EQUIPMENT YARD
HEAVY EQUIPMENT AREAS
FUEL STORAGE TANKS
CITY TRANSPORTATION CENTERS
EMERGENCY MANAGEMENT CENTER
SCHOOLS
TELEPHONE SWITCHBOARDS
ELECTRIC POWER STATIONS
RESERVOIRS
RADIO AND TV STATIONS
SCALE: 7 BLOCKS = 1 MILE

CENTRAL CITY

TERRORIST INCIDENT

6-23-98

(SAMPLE INCIDENT ACTION PLAN)

C O T C
Operations

OBJECTIVES	1. INCIDENT NAME ***Terrorist Inc.***	2. DATE PREPARED ***6/23/98***	3. TIME PREPARED

4. OPERATIONAL PERIOD (DATE/TIME)
First Period

5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)

- Provide for the life safety of the responders & public.
- Stabilize the incident.
- Protect the environment.
- Preserve the crime scene, limit damage to property/equipment.

6. OBJECTIVES FOR THIS OPERATIONAL PERIOD:

- Ensure safety of the responders and public.
- Prioritize all requests for service.
- Provide initial EMS care.
- Prevent conflagration--hold fires to floor/building of origin.
- Mitigate, stabilize, isolate all hazards that could lead to injury.
- Protect & preserve evidence & the crime scene.

7. WEATHER FORECAST FOR OPERATIONAL PERIOD

8. GENERAL SAFETY MESSAGE

- All personnel shall wear appropriate level of PPE while in the operational area.
- Watch for symptoms of exposure to NBC agents (flu-like symptoms) in responders, if noted, remove from area & advise chain of command.

9. ATTACHMENTS (√ IF ATTACHED)

- ☐ ORGANIZATION LIST (ICS 203)
- ☐ ASSIGNMENT LIST (ICS 204)
- ☐ COMMUNICATIONS PLAN (ICS 205)
- ☐ MEDICAL PLAN (ICS 206)
- ☐ INCIDENT MAP
- ☐ TRAFFIC PLAN
- ☐ _____
- ☐ _____
- ☐ _____

202 ICS 3-80	10. PREPARED BY (Planning Section Chief) ***Tom Conners***	12. APPROVED BY (Incident Commander) ***Dave Bacthis***

ORGANIZATION ASSIGNMENT LIST

1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
Terrorist	*6/23/98*	

OPERATIONAL PERIOD (DATE/TIME) *First Period*

POSITION	NAME
4. INCIDENT COMMANDER AND STAFF	
INCIDENT COMMANDER	*Balthis*
DEPUTY	*Tomes*
SAFETY OFFICER	*Koenig*
INFORMATION OFFICER	*Parker*
LIAISON OFFICER	*Parker*
5. AGENCY REPRESENTATIVES	
AGENCY	NAME
6. PLANNING SECTION	
CHIEF	*Conners*
DEPUTY	
RESOURCES UNIT	*Evans*
SITUATION UNIT	*Hudgens*
DOCUMENTATION UNIT	
DEMOBILIZATION UNIT	
TECHNICAL SPECIALISTS	
7. LOGISTICS SECTION	
CHIEF	*Hawkins*
DEPUTY	
a. SUPPORT BRANCH	
DIRECTOR	*Neufeld*
SUPPLY UNIT	
FACILITIES UNIT	
GROUND SUPPORT UNIT	
b. SERVICE BRANCH	
DIRECTOR	*Scherer*
COMMUNICATIONS UNIT	
MEDICAL UNIT	
FOOD UNIT	

8. OPERATIONS SECTION		
CHIEF		*Lecuyer*
DEPUTY		*Stowell/Dickerson*
a. BRANCH I - DIVISION/GROUPS		
S & R & SUPPRESSION		
BRANCH DIRECTOR		*D & LP*
DEPUTY		*Fitzgerald*
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
b. BRANCH II - DIVISION/GROUPS		
EMS		
BRANCH DIRECTOR		*McClimens*
DEPUTY		*Sullivan*
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
c. BRANCH III - DIVISION/GROUPS		
Evac/Exposure		
BRANCH DIRECTOR		*Payton*
DEPUTY		*O'Neal*
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
DIVISION/GROUP		
d. AIR OPERATIONS BRANCH		
AIR OPERATIONS BR. DIR.		
AIR TACTICAL GROUP SUP.		
AIR SUPPORT GROUP SUP.		
HELICOPTER COORDINATOR		
AIR TANKER/FIXED-WING CRD.		
FINANCE SECTION		
CHIEF		
DEPUTY		
TIME UNIT		
PROCUREMENT UNIT		
COMPENSATION/CLAIMS UNIT		
COST UNIT		

203 ICS 1-82

9. PREPARED BY (RESOURCES UNIT)

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
Search & Rescue Suppression	*Suppression*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Terrorist Inc.	DATE *6/23/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Lecuyer*

BRANCH DIRECTOR *Delp*

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--Life, Environment, Crime Scene, Property, Equipment.
- Provide initial EMS then transfer to EMS branch.
- Protect the victims & the property from further damage by fire.
- Mitigate, stabilize, isolate all hazards that could lead to injury.
- Protect & preserve evidence & the crime scene.

8. SPECIAL INSTRUCTIONS

- Watch for secondary devices.
- Look for symptoms of exposure to NBC agents (flu-like symptoms).
- All confined spaces shall be considered IDLH until proven otherwise by atmospheric monitors
- Maintain resource status with chain-of-command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND *Dispatch*	LOCAL			*1*	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Evans	*Conners*	*6/23/98*	

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
S & R Suppression	*USAR*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Terrorist Inc.	DATE *6/23/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Lecuyer*

BRANCH DIRECTOR *Delp*

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--Life, Environment, Property, Equipment.
- Provide technical rescue services to those in need.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- All confined spaces shall be considered IDLH until proven otherwise by atmospheric monitors.
- Use first responders to complete non-technical task to conserve on use of USAR specialist resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND *Dispatch*	LOCAL			*1*	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Evans	*Conners*	*6/23/98*	

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
Search & Rescue Suppression	*Haz Mat*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Terrorist Inc.	DATE *6/23/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Lecuyer*

BRANCH DIRECTOR *Delp*

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--protect Life, Environment, Property, Equipment.
- Containment of all actual or threatened hazardous substance releases.
- Provide technical assistance to first responders.
- Provide assistance to other agencies.

8. SPECIAL INSTRUCTIONS

- Use FRO-level personnel where appropriate to conserve on use of haz mat specialist personnel.
- All haz mat incidents shall be managed using the standardized tactical approach.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND *Dispatch*	LOCAL			*1*	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				*2*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Evans	*Conners*	*6/23/98*	

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
EMS	Treatment	

3. INCIDENT NAME	4. OPERATIONAL PERIOD First
Terrorist Inc.	DATE 6/23/98
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF Lecuyer

BRANCH DIRECTOR McClimens

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Provide emergency medical services to those in need.
- Provide triage of the injured using the START system.
- Provide technical assistance on EMS issues to first responders.
- Assist other agencies.

8. SPECIAL INSTRUCTIONS

- Order all medical supplies through Logistics.
- Use BLS personnel where appropriate to conserve the use of ALS resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND Dispatch	LOCAL			1	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				2	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Evans	Conners	6/23/98	

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
EMS	Transportation	

3. INCIDENT NAME
Terrorist Inc.

4. OPERATIONAL PERIOD First
DATE 6/23/98
TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF Lecuyer
BRANCH DIRECTOR McClimens
DIVISION/GROUP SUPERVISOR _____
AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Provide emergency medical services to those in need.
- Provide triage of the injured using the START system.
- Provide technical assistance on EMS issues to first responders.
- Assist to other agencies.

8. SPECIAL INSTRUCTIONS

- Order all medical supplies through Logistics.
- Use BLS personnel where appropriate to conserve on use of ALS resources.
- Maintain resource status with chain of command.
- Record incident activity on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Evans	Conners	6/23/98	

C O T C
Operations

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
Evac/Exposure	*Exposure*	

3. INCIDENT NAME	4. OPERATIONAL PERIOD *First*
Terrorist Inc.	DATE *6/23/98*
	TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF *Lecuyer*

BRANCH DIRECTOR *Payton*

DIVISION/GROUP SUPERVISOR _____

AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Strategic priorities--Life, Environment, Crime Scene, Property, Equipment.
- Hold fires to building of origin.
- Mitigate, stabilize, isolate hazards that could cause injury.
- Preserve evidence & the crime scene.

8. SPECIAL INSTRUCTIONS

- Request additional/specialized resources as needed.
- Maintain resources status with chain-of-command.
- Record incident activity on ICS Form 214.
- Keep eyes open for secondary device.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND *Dispatch*	LOCAL			*1*	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				*4*	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Evans	*Conners*	*6/23/98*	

1. BRANCH	2. DIVISION/GROUP	ASSIGNMENT LIST
Evac/Exposure	Evacuation	

3. INCIDENT NAME
Terrorist Inc.

4. OPERATIONAL PERIOD First
DATE 6/23/98
TIME _____

5. OPERATIONS PERSONNEL

OPERATIONS CHIEF Lecuyer
BRANCH DIRECTOR Payton
DIVISION/GROUP SUPERVISOR _____
AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE RESOURCE DESIGNATOR	LEADER	NUMBER PERSONS	TRANS. NEEDED	DROP OFF PT/TIME	PICK-UP PT/TIME

7. CONTROL OPERATIONS

- Evacuation/Evaluation inside hot zone will be handled by fire department personnel.
- Evacuation/Evaluation outside hot zone will be handled by PD
- Provide first aid to minor injuries.
- Injuries requiring transport to hospital--move to EMS Branch

8. SPECIAL INSTRUCTIONS

- Ensure safety of the responders & the public.
- Where safe to do so, use volunteers to conserve resources.
- Maintain resource status with chain-of-command.
- Record incident activities on ICS Form 214.

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND Dispatch	LOCAL			1	SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL				4	GROUND-TO-AIR				

10. PREPARED BY (RESOURCES UNIT)	11. APPROVED BY (PLANNING SECTION CHIEF)	DATE	TIME
Evans	Conners	6/23/98	

MEDICAL PLAN	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED	4. OPERATIONAL PERIOD

5. INCIDENT MEDICAL AID STATIONS

MEDICAL AID STATIONS	LOCATION	PARAMEDICS	
		YES	NO

6. TRANSPORTATION

A. AMBULANCE SERVICES

NAME	ADDRESS	PHONE	PARAMEDICS	
			YES	NO
Fisherville Amb.	*F & 7th Fisherville*		*1 of 3*	
Bay Port Amb.	*Ferry & 7th Bay Port*		*1 of 2*	
Harvest Junction Amb	*M & 1st-Harvest Junction*		*1 of 3*	
Kingston	*L & 18th Kingston*		*1 of 3*	
Central City EMS	*10 Fire Stations*		*5 of 10*	

B. INCIDENT AMBULANCES

NAME	LOCATION	PARAMEDICS	
		YES	NO
Med-Flight 1	*Central City Hospital*	*3*	
Flight for Life	*St. Dorthy's Hospital Monroe*	*Dr.*	
Central City EMS	*10 Fire Stations*	*5 of 10*	

7. HOSPITALS

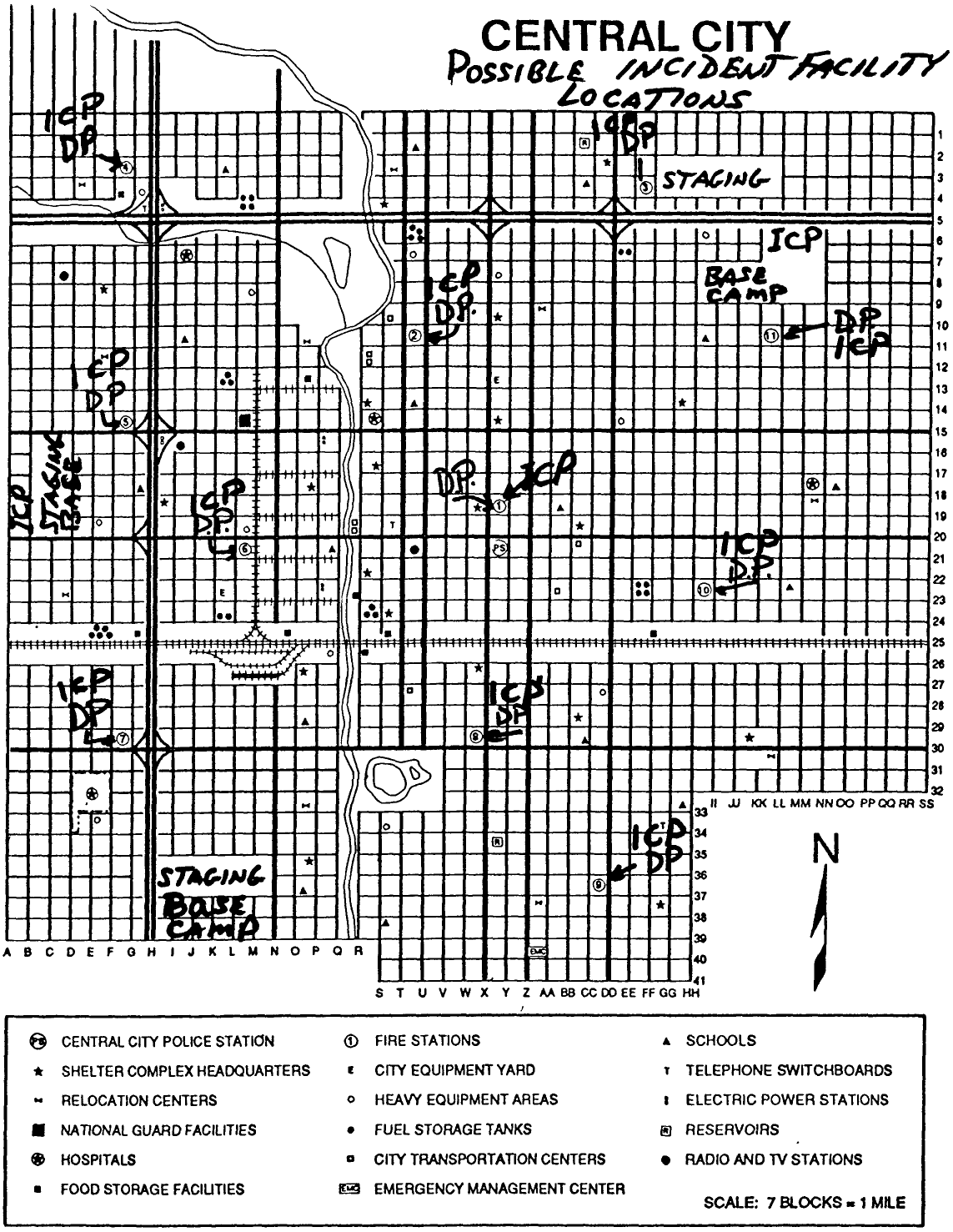
NAME	ADDRESS	TRAVEL TIME		PHONE	HELIPAD		BURN CENTER	
		AIR	GRND		YES	NO	YES	NO
Central City Hospital.	*D & 31st*			*374-1501*	*3*		*3*	
Faith Hospital.	*S & 14th*			*374-0690*				*3*
Lavine Hospital	*MM & 17th*			*436-9197*				*3*
Columbia Veterans	*J & 7th*							*3*

8. MEDICAL EMERGENCY PROCEDURES

- If incident personnel have minor injuries contact Logistics for medical unit assistance.

- Major medical emergencies for incident personnel shall contact dispatch on command channel.

206 ICS 8-78	12. PREPARED BY (MEDICAL UNIT LEADER)	10. REVIEWED BY (SAFETY OFFICER)
	Hawkins	*Koenig*


CENTRAL CITY
POSSIBLE INCIDENT FACILITY LOCATIONS
ICP DP
STAGING
ICP
BASE CAMP
DP ICP
STAGING BASE
STAGING BASE CAMP
N
CENTRAL CITY POLICE STATION
SHELTER COMPLEX HEADQUARTERS
RELOCATION CENTERS
NATIONAL GUARD FACILITIES
HOSPITALS
FOOD STORAGE FACILITIES
FIRE STATIONS
CITY EQUIPMENT YARD
HEAVY EQUIPMENT AREAS
FUEL STORAGE TANKS
CITY TRANSPORTATION CENTERS
EMERGENCY MANAGEMENT CENTER
SCHOOLS
TELEPHONE SWITCHBOARDS
ELECTRIC POWER STATIONS
RESERVOIRS
RADIO AND TV STATIONS
SCALE: 7 BLOCKS = 1 MILE

MODULE 4

MODULE 4

ICS FOR EMERGENCY MEDICAL SYSTEMS (EMS)

MODULE 4:

ICS FOR EMERGENCY MEDICAL SYSTEMS (EMS)

Terminal Objective

Upon completing the module, students will be able to apply the ICS organization to an EMS incident, addressing organizational structure, identifying resource needs, and identifying potential problems.

Enabling Objectives

Students will:

- Identify positions and responsibilities in the ICS organization for EMS incidents;
- Identify the elements of S.T.A.R.T.;
- Identify potential problems for an EMS incident;
- Identify resource needs at an EMS incident; and
- Develop a command and organizational structure at an EMS incident.

Requirements

Facility

Classroom with tables

Materials

- COTC Operations Instructor guide
- COTC Operations Student Manual
- PowerPoint® Slides

Equipment

- Computer
- LCD projector
- One portable screen or classroom equipped with screen

- Chalkboard/wipeboard
- Easel pads with markers

References

- Student Manual

Instructor guidelines

This course is intended for a third level of management, the battalion chief or newly promoted chief officer, in a typical emergency services organization. The newly promoted chief officer will think in terms of strategy, as opposed to tactics, on an emergency scene. The officer will need a good, basic understanding of tactics as they play into strategic decisions, but will focus on strategic decisions. To this end, it is recommended that students complete Modules 1 through 3 (Application of the Incident Command System [ICS], Incident Command Decision-Making, and Incident Action Plan [IAP]/Planning) before enrolling in any of the simulation exercise modules.

The simulations in this course are designed to provide opportunities for the newly promoted chief officers to develop their skills as incident commanders at emergencies that require more resources than “normal” first-alarm, initial attacks in their communities. This simulation methodology allows the students to transition from the tactical perspective of a company officer to a strategic perspective of a chief officer who makes command level decisions based on strategic objectives required of an incident commander at a major target hazard incident.

The officers attending this course should be familiar with the target hazards found in their communities. Some of these hazards are significant and are known as target hazards. Target hazards are defined as incidents that:

- Overload fire equipment and personnel resources;
- Involve atypical hazards;
- Produce a significant negative impact on the community;
- Require technical advice for effective strategy development; and
- May initiate multi-agency involvement.

The most serious of these target hazards, for example, a major commercial or high-rise fire, can quickly stretch the capacity of the fire department's resources.

The students should rotate through the various command and general staff positions to see the responsibilities of the incident commander as individual components. The instructor would normally divide the class into groups of six to eight students, assigning each student a position on the Incident Management Team (IMT). An alternate method is to assign more experienced students to the IMT positions and assign other students in deputy or assistant roles, which allows them to shadow their more experienced peers. As the course develops, the instructor may begin to assign additional responsibilities to the command and general staff, including the development of the Incident Action Plan (IAP). The ICS forms needed to complete the IAP are included in the appendix of each simulation exercise module.

The instructor should carefully read the instructor guide and the student manual and become familiar with the content before presenting the course.

If available, bring a triage tag used in your area to show the students during the lecture on the S.T.A.R.T. system of triage.

Support students throughout the simulation by coaching and encouraging. Encourage students to ask

questions about administrative matters and course content.

Methodology

This module uses lecture, discussion, and an activity.

Outline

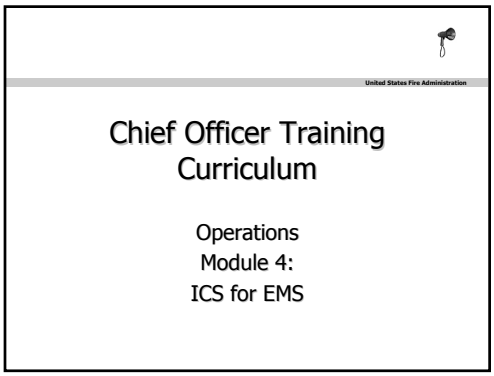
I. Objectives and Overview ..... 5 minutes
II. Benefits of an ICS at EMS Incidents ..... 5 minutes
III. Levels of EMS Incidents ..... 5 minutes
IV. Who is in Charge at EMS Incidents? ..... 10 minutes
V. Role and Responsibilities of the Incident Commander ..... 10 minutes
VI. Roles and Responsibilities of Group/Division Supervisors and Unit Leaders ..... 50 minutes
VII. The Basic Organization ..... 10 minutes
VIII. Expanding the Organization ..... 10 minutes
IX. Expanded Generic ICS Positions for EMS Incidents ..... 20 minutes
X. Expansion of the ICS Branch ..... 20 minutes
XI. Activity 4.1: Liberty County Vehicle Accident ..... 90 minutes
XII. Module Summary ..... 5 minutes

240 minutes

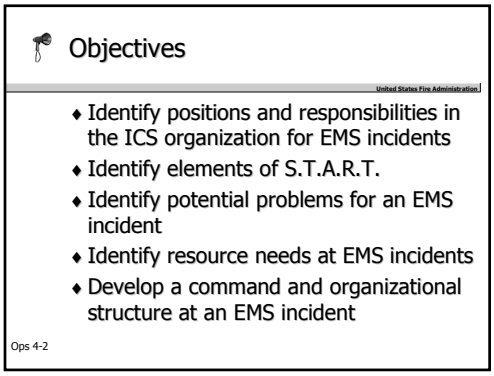
NFPA 1021 Standards Cross-Reference Matrix

3-6, 3-7, 4-6, 4-7

Slide 4-1: Module 4, ICS for EMS



Slide 4-2: Objectives



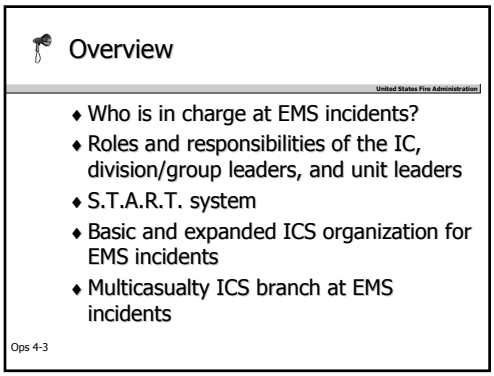
I. Objectives and Overview (5 minutes)

A. Objectives

Students will be asked to:

- Identify positions and responsibilities in the ICS organization for EMS incidents;
- Identify the elements of the Simple Triage And Rapid Transport (S.T.A.R.T.) system;
- Identify potential problems for an EMS incident;
- Identify resource needs at an EMS incident; and
- Develop a command and organizational structure at an EMS incident.

Slide 4-3: Overview



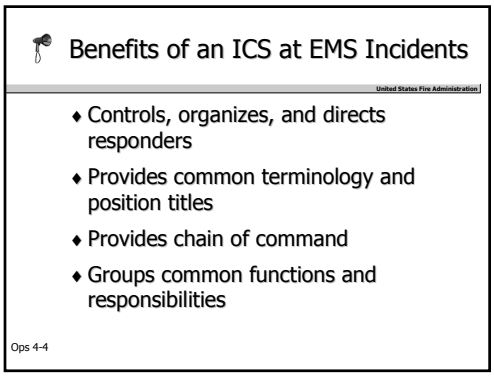
B. Overview

A proven system, the ICS, is designed to provide the emergency responder with an organization and system to effectively manage EMS incidents.

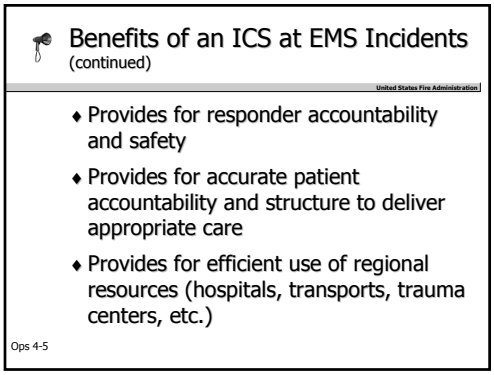
In this module we will discuss:

- Levels of EMS incidents;
- Who is in charge at EMS incidents;
- The roles and responsibilities of the IC, division/group leaders, and unit leaders;
- The S.T.A.R.T. system;
- The basic and expanded ICS organization for EMS incidents; and
- The branch used at EMS incidents.

Slide 4-4: Benefits of ICS at EMS Incidents



Slide 4-5: Benefits of ICS at EMS Incidents (continued)

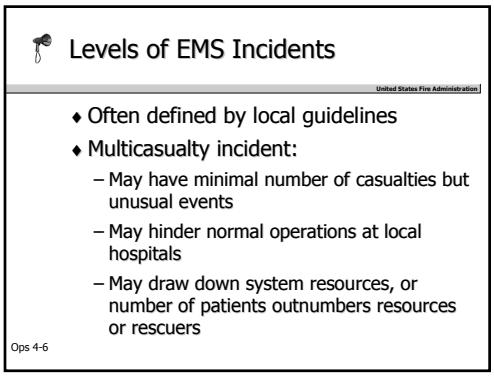


II. Benefits of an ICS at EMS Incidents (5 minutes)

Using an ICS at EMS incidents has many benefits. An ICS organization:

- Controls, organizes, and directs responders toward efficient patient care;
- Provides common terminology and position titles, particularly where multiple agencies may be used;
- Provides a chain of command for decision-making both at and away from the incident;
- Groups common functions and responsibilities to meet resource availability and patient needs;
- Provides for responder accountability, safety, and efficient utilization;
- Provides for accurate patient accountability and a structure for delivering the appropriate degree of patient care services; and
- Provides for efficient use of regional EMS services such as hospitals, transport units, and specialty services (trauma units, burn centers).

Slide 4-6: Levels of EMS Incidents



III. Levels of EMS Incidents (5 minutes)

An EMS incident can range from a single-patient to a multicasualty incident. Incidents beyond a single patient are often defined by local guidelines. In general, a multicasualty incident can be defined by any of the following thresholds:

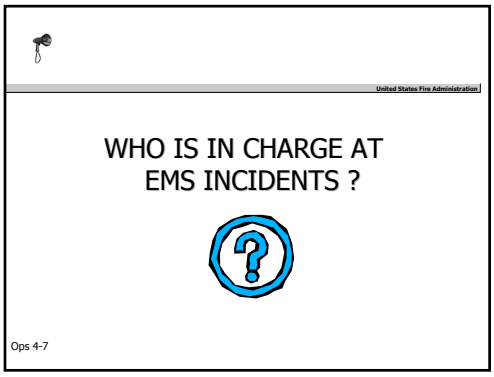
- Produces a minimal number of casualties, but has unusual events surrounding the incident (for example, a haz mat or a multiple-vehicle accident);
- Affects local hospital(s) receiving the patients to the point that normal EMS operations become hindered, thereby having a negative impact on system efficacy; and
- Generally may draw down the system resources because the number of patients outnumbers the resources of initial rescuers.

Instructor Notes:

The students need to be aware that these are general, recommended guidelines. They will need to assess local capabilities to determine the exact definition/qualification for their own jurisdictions.

Lead a discussion with students about their local/community "thresholds" for identifying levels of EMS incidents.

Slide 4-7: Who is in Charge at EMS Incidents?



IV. Who is in Charge at EMS Incidents? (10 minutes)

Local and state laws and ordinances may define the authority responsible for managing EMS incidents.

- The fire department is most often given the responsibility for directing fire, EMS (when EMS is a component of the agency), hazardous materials, and other non-law enforcement emergency operations.
- In instances where the EMS provision is through a third service or other system configuration, the EMS agency may be responsible for command of medical operations.
- Generally, law enforcement agencies are responsible for directing operations related to criminal events (for example, terrorist incidents).
- A single Incident Commander (IC) must be appointed for an incident unless the incident is to be managed under a unified command.

- Pre-incident planning must define who is in command and how all responding agencies should be merged into a single-incident organization.

- All potential responding disciplines and agencies should be involved in pre-incident planning that includes establishing written agreements before an incident.

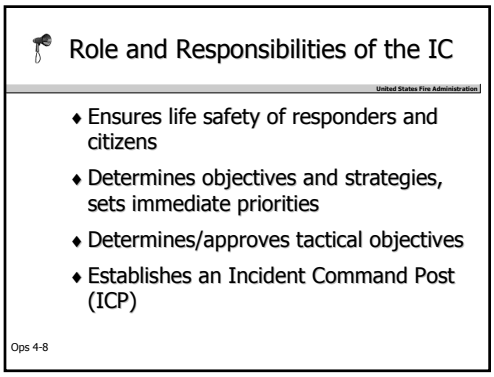
- Fire departments, because of their extensive experience in the use of ICS, should take a lead role in assisting other agencies in the adoption and implementation of an ICS for their agencies or disciplines.

Instructor Notes:

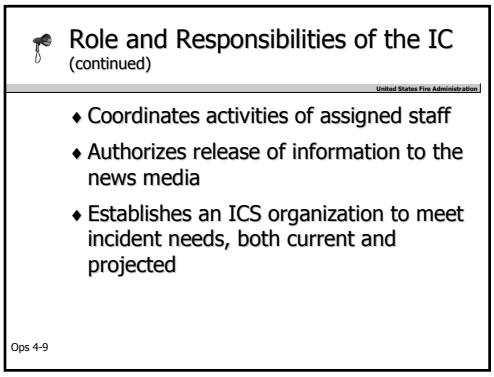
While at an incident, it is important not to argue over who should or should not be the IC. Emphasizing pre-incident planning and policy statements (SOGs) to resolve these issues before an emergency is extremely important.

Suggest to students that it would be wise for them to research their local laws and ordinances to find the exact authority for command and which agency has such authority.

Slide 4-8: Role and Responsibilities of the IC



Slide 4-9: Role and Responsibilities of the IC (continued)



V. Role and Responsibilities of the Incident Commander (10 minutes)

A. Responsibilities

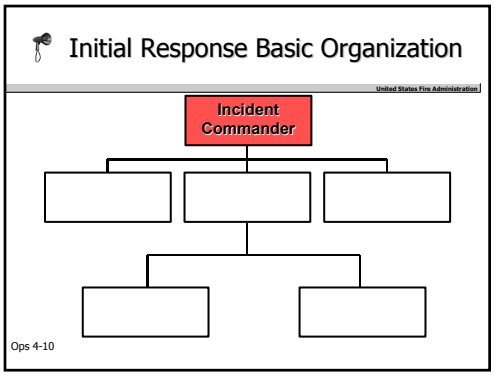
The IC is responsible for overall incident management at EMS incidents.

He or she:

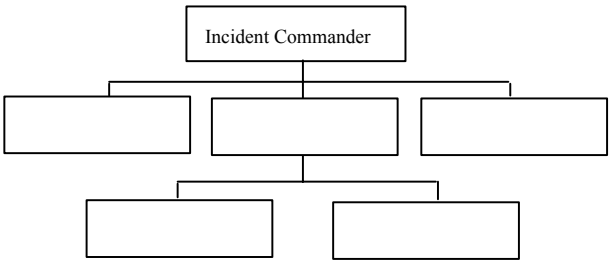
- Ensures life safety of responders and citizens;
- Determines objectives and strategies and sets immediate priorities;
- Determines/approves tactical objectives;
- Establishes an Incident Command Post (ICP);
- Coordinates activities of assigned staff;
- Authorizes release of information to the news media; and
- Establishes an ICS organization to meet incident needs, both current and projected:
  - Rescue/extrication group supervisor,
  - Triage unit leader,

* Treatment unit leader,
* Medical transportation group supervisor, and
* Medical group supervisor.

Slide 4-10: Initial Response Basic Organization



B. Initial response basic organization



VI. Roles and Responsibilities of Division/Group Supervisors and Unit Leaders (50 minutes)

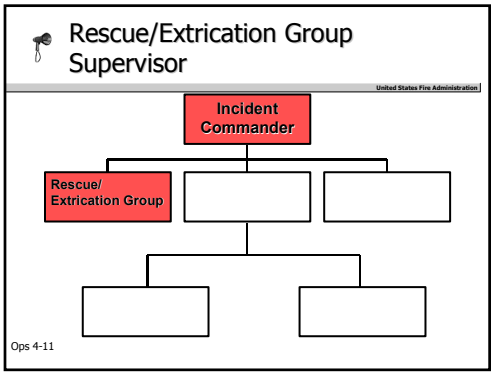
Instructor Notes:

The modular design of ICS allows the IC to establish ICS positions on an as-needed or projected need basis. Therefore, organizational development will vary from incident to incident. ICS development then should center on maintaining an effective span-of-control in order to meet incident objectives.

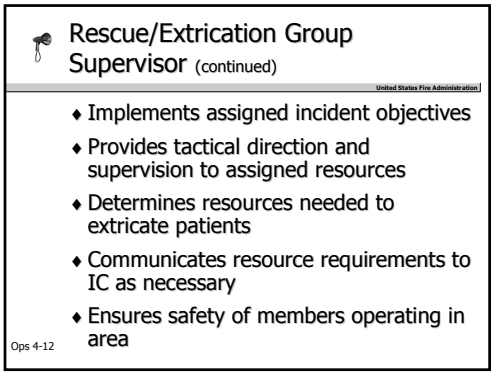
For purposes of presentation, the information contained in this and subsequent units is not presented in

mandated development sequence. The presentation is designed to deliver information regarding specific positions within the ICS branch and to illustrate appropriate organizational design. An IC may choose to fill lower level positions first and fill upper level positions as span-of-control becomes an issue.

Slide 4-11: Roles and Responsibilities of Division/Group Supervisors and Unit Leaders

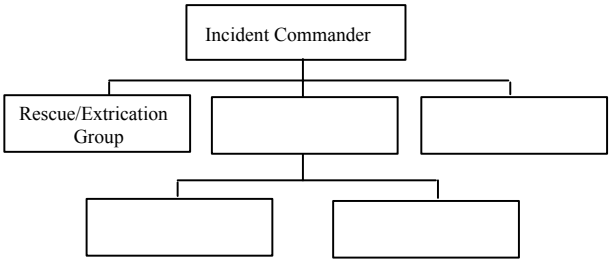


Slide 4-12: Rescue/Extrication Group Supervisor (continued)



A. Rescue/extrication group supervisor

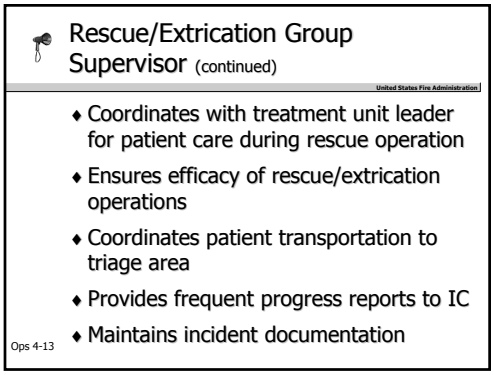
The rescue/extrication group supervisor is responsible for managing the rescue of trapped victims.



He or she:

- Implements assigned incident objectives;
- Provides tactical direction and supervision to assigned resources;
- Determines resources needed to extricate patients:
  - Rescue tools,

Slide 4-13: Rescue/Extrication Group Supervisor (continued)



- Backboards,
- Personnel, and
- Relief personnel;

- Communicates resource requirements to IC as necessary;
- Ensures safety of members operating in area;
- Coordinates with the treatment unit leader for patient care during the rescue operation;
- Ensures efficacy of rescue/extrication operations;
- Coordinates patient transportation to triage area;
- Provides frequent progress reports to the IC; and
- Maintains incident documentation.

Instructor Notes:

Discuss the following points.

Resource needs develop from the number of patients involved. A heavy initial commitment may be needed in rescue/extrication.

The work area may have significant safety risks that will have to be addressed.

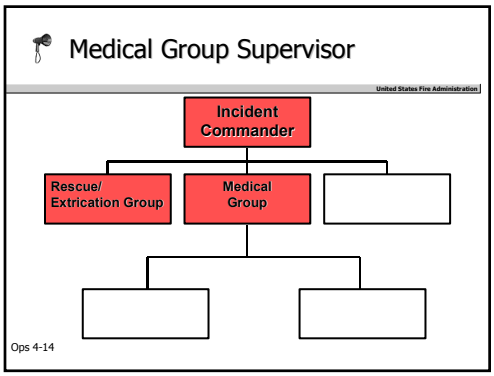
Heavy extrication situations, such as moving patients uphill or over long distances, will limit the number of trips rescue/extrication personnel can take before exhaustion becomes an issue and replacement personnel are needed. The group supervisor needs to plan for these situations and request resources before they are needed.

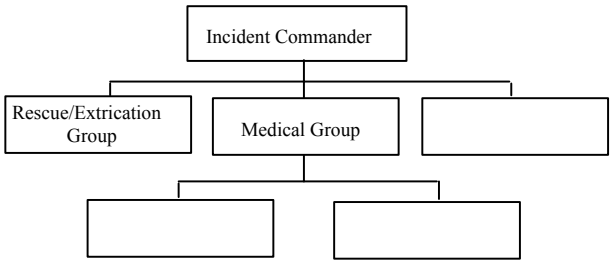
B. Medical group/division supervisor

- The medical group/division supervisor reports to the branch director and supervises the triage unit leader, treatment unit leader, and medical supply coordinator.

- The medical group/division supervisor establishes command and controls the activities within a medical group/division in order to assure the best possible emergency medical care to patients during a multicasualty incident.

Slide 4-14: Medical Group Supervisor





Slide 4-15: Medical Group Supervisor (continued)

He or she:

- Implements assigned incident objectives;
- Participates in multicasualty branch/operations section planning activities;
- Establishes medical group/division with assigned personnel;
- Requests additional personnel and resources sufficient to handle the magnitude of the incident (for example, medical caches, backboards, litters, and cots);
- Designates unit leaders and treatment area locations as appropriate;

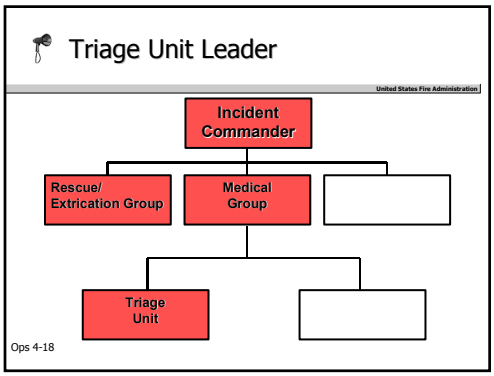
Slide 4-16: Medical group supervisor (continued)

- Isolates morgue and minor treatment area from immediate and delayed treatment areas;
- Requests law enforcement/ coroner involvement as needed;
- Establishes communications and coordination with patient transportation group supervisor;
- Ensures activation of hospital alert system, local EMS/health agencies;

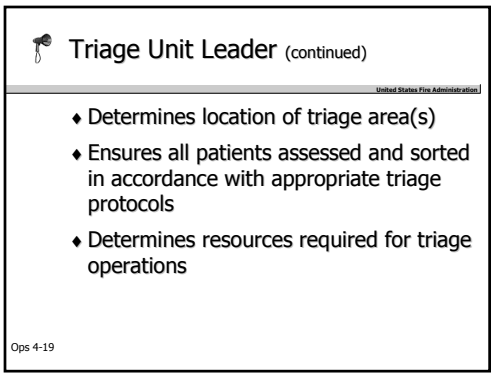
Slide 4-17: Medical Group Supervisor (continued)

- Directs and/or supervises on-scene personnel from agencies such as coroner's office, Red Cross, law enforcement, ambulance companies, county health agencies, and hospital volunteers;
- Ensures proper security, traffic control, and access for the medical group/division area;
- Directs medically trained personnel to the appropriate unit leader; and
- Maintains incident documentation.

Slide 4-18: Triage Unit Leader

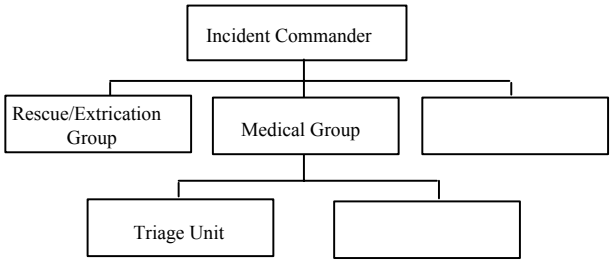


Slide 4-19: Triage Unit Leader (continued)



C. Triage unit leader

The triage unit leader is responsible for the sorting of patients based on their current medical conditions.

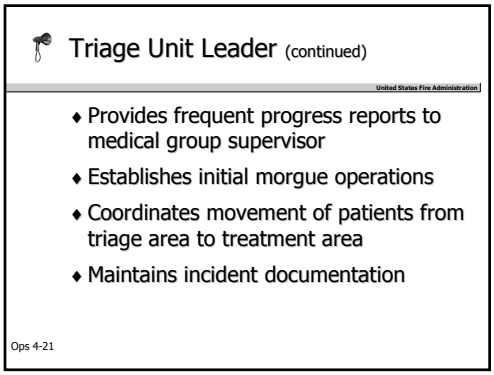


The triage unit leader will:

- Determine location of triage area(s);
- Ensure that all patients are assessed and sorted in accordance with appropriate triage protocols;
- Determine resources required to conduct triage operations:
  - Communications,
  - Personnel,
  - Equipment and supplies, and
  - Relief units;

Slide 4-20: Triage Unit Leader (continued)

Slide 4-21: Triage Unit Leader (continued)



- Communicate resource requirements to the medical group supervisor as necessary;
- Develop a triage organization sufficient to handle assignment;
- Ensure the safety and security of all members operating in the triage area;
- Ensure the efficacy of triage operations;
- Provide frequent progress reports to the medical group supervisor;
- Establish initial morgue operations (as needed);
- Coordinate movement of patients from the triage area to the treatment area; and
- Maintain incident documentation.

Instructor Notes:

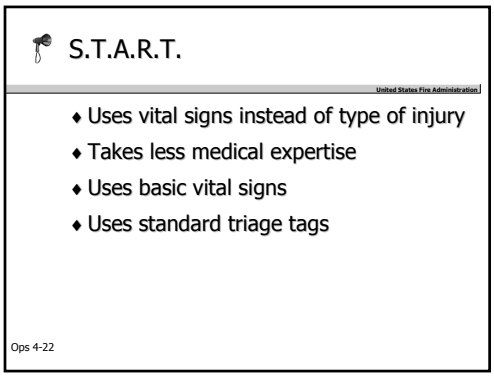
Emphasize that moving patients from one area to another is labor intensive. Crews will need relief over time.

Instructor Notes:

If the students are familiar with the S.T.A.R.T. system of triage, skip the walk through. If they are not familiar, it is worth the time to review the system even though it is task-level material. Nothing can make a multicasualty incident move more quickly and smoothly than a well-run triage area.

Have students turn to the algorithm on S.T.A.R.T. to follow along while you review the criteria.

Slide 4-22: S.T.A.R.T.



D. S.T.A.R.T. system

The Simple Triage and Rapid Transport (S.T.A.R.T.) system of triage was designed as a method to quickly triage victims at a multicasualty incident:

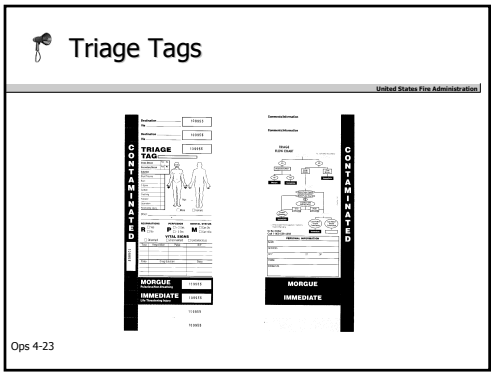
- Uses vital signs rather than type of injury to sort;
- Takes less medical expertise than assessing by type of injury;
- Can be done quickly by rescue workers without the help of advanced medical experience;
- Uses three basic vital signs to make the determination of the victim's condition:
  - Ventilation,

* Perfusion, and

* Mental status; and

- Uses standard triage tags (red-immediate, yellow-delayed, green-minor, and black-deceased).

Slide 4-23: Triage Tag



Instructor Notes:

If you have a triage tag used in your area, show it to the students.

E. Minor treatment unit

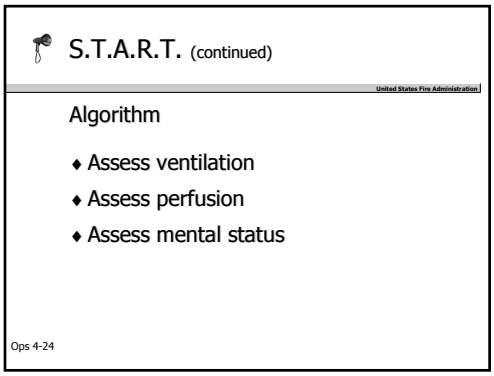
Instructor Notes:

Refer students to Figure 4-5, S.T.A.R.T. Method Algorithm, in their student manuals before making the following points. The algorithm is provided in the instructor guide as Figure 4-1.

- Victims who able to walk are sent to the minor treatment unit.

  * Those victims who respond will usually have stable vital signs.

Slide 4-24: S.T.A.R.T. (continued)



- This is not a perfect way to sort victims but is only used for quick sorting of the injured in a multicasualty incident.
- If vital signs change, victims can be upgraded to the immediate or delayed treatment areas.

- Assess ventilation
  - If the victim is not breathing, reposition the airway and check again.
  - If the victim's breathing resumes, tag him or her immediate and move to the next victim.
  - If the victim is still not breathing, tag him or her deceased and move on.
  - If the victim's respirations are over 30 breaths per minute, tag immediate and move to the next victim.
  - If the victim is breathing but the respirations are less than 30 per minute, assess the perfusion.

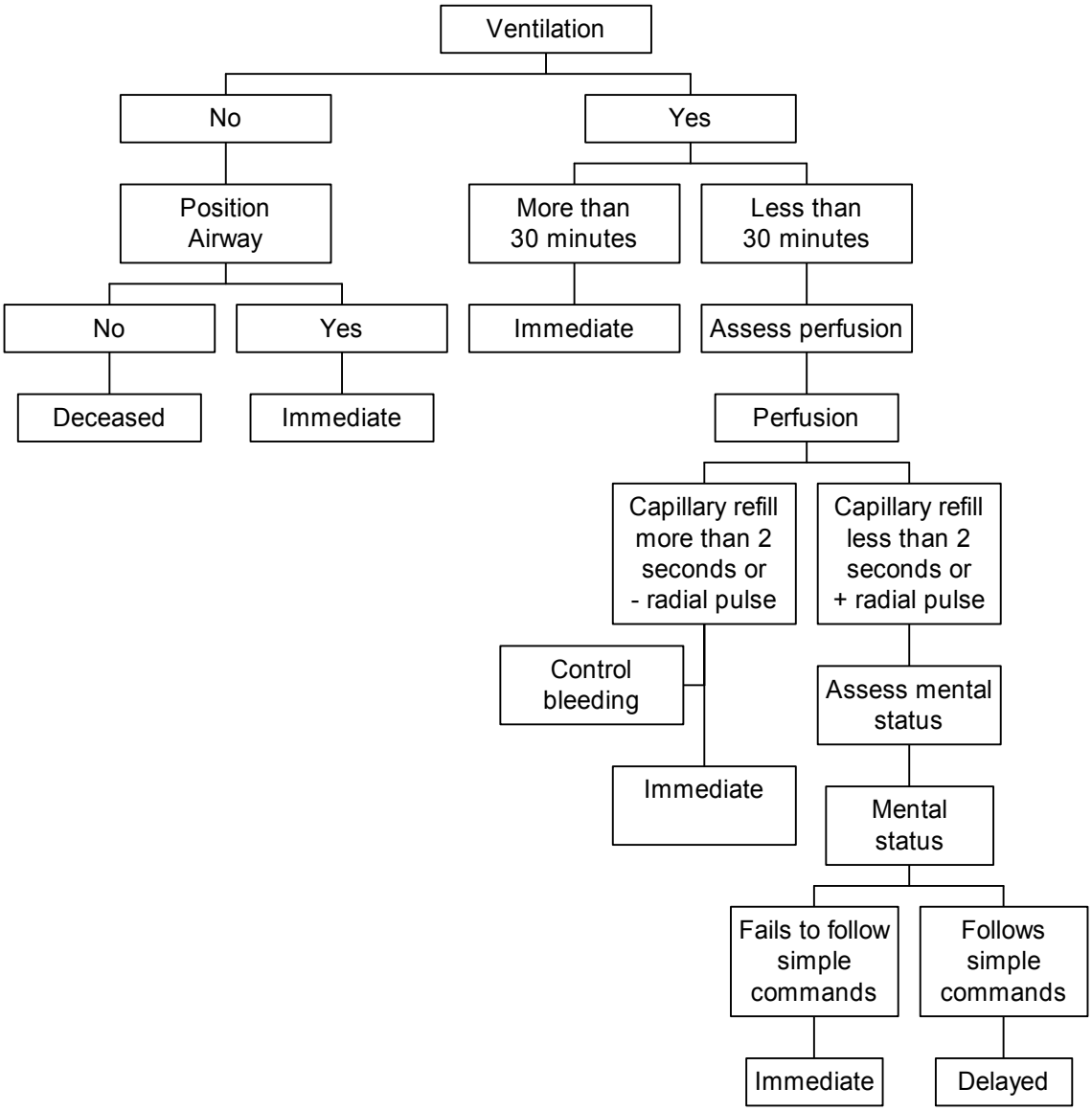
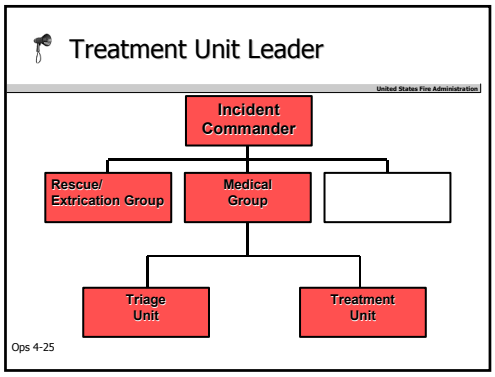


Figure 4-1: S.T.A.R.T. Method Algorithm

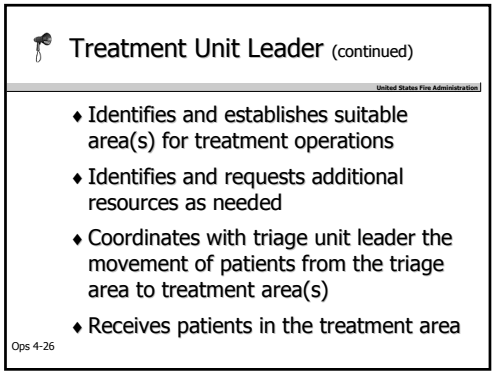
- Assess perfusion
  - Assess perfusion by squeezing and releasing a fingernail; count the time it takes for color to return under the nail. If the nail is covered by nail polish, choose an ear lobe or other exposed part of the body.
  - If the color takes longer than 2 seconds to return (one-thousand-one, one-thousand-two), tag immediate and move to the next victim.
  - If the color returns in less than 2 seconds, assess the victim's mental status.
- Assess mental status
  - Ask the victim some simple commands (for example, name, date, or place).
  - If he or she cannot respond correctly, tag immediate and move to the next victim.
  - If he or she does respond correctly, tag delayed and move to the next victim.
- With very little practice, a first responder can easily sort the victims, leaving the more skilled medical personnel to concentrate on the treatment of the victims

when they reach the treatment unit.

Slide 4-25: Treatment Unit Leader

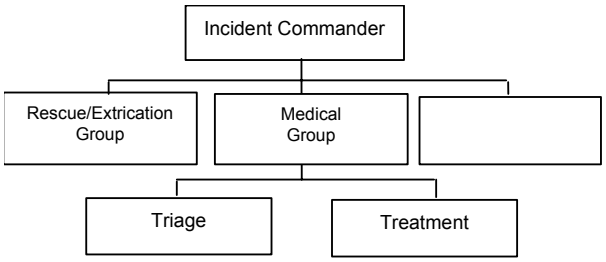


Slide 4-26: Treatment Unit Leader (continued)



F. Treatment unit leader

The treatment unit leader is responsible for the overall management of patient care in the treatment area(s).



He or she:

- Identifies and establishes a suitable area(s) for treatment operations and discusses that location with the medical group supervisor, the triage unit leader, and the transportation group leader.

- Locates the treatment area in close proximity to the transportation area:

  * Upwind and uphill;

  * Sufficient space for operations (Think Big!);

  * Unimpeded access and egress for units; and

- Separate areas for patients (immediate, delayed, and minor);

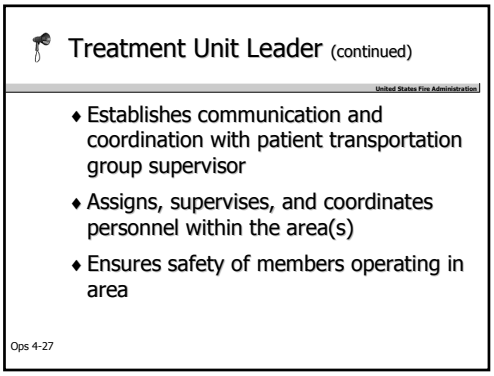
- Identifies and requests additional resources as needed:
  - Communications;
  - Personnel:
    - Treatment dispatch manager,
    - Immediate treatment manager,
    - Delayed treatment manager, and
    - Minor treatment manager;
  - Equipment and supplies; and
  - Relief or other support units;

- Coordinates with the triage unit leader for the movement of patients from the triage area to treatment areas;

- Receives patients in the treatment area(s) (separated by triage category):
  - Reassesses and retriages as appropriate (continual); and
  - Renders prompt and efficient

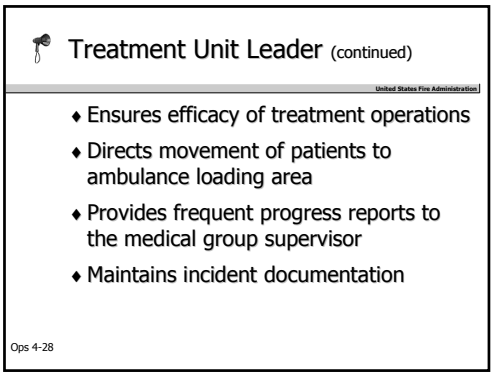
treatment in accordance with established Advanced Life Support/Basic Life Support (ALS/BLS) protocols.

Slide 4-27: Treatment Unit Leader (continued)



- Establishes communication and coordination with patient transportation group supervisor;
- Assigns, supervises, and coordinates personnel within the area(s);
- Ensures safety of all members operating in area(s);

Slide 4-28: Treatment Unit Leader (continued)



- Ensures efficacy of treatment operations;
- Directs movement of patients to ambulance loading area;
- Provides frequent progress reports to the medical group supervisor; and
- Maintains incident documentation.

Instructor Notes:

Reinforce the need to think BIG for the treatment areas. Many rescuers will be working on patients and will need a lot of space.

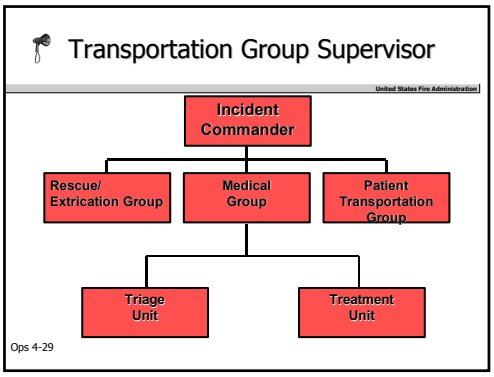
Emphasize the organized and adequately spaced placement of patients, separated by category.

First-in patients must be placed near the patient transportation loading area and "backfilled" from there, based on patient triage category.

The treatment unit leader and subordinates need to be very aggressive in rapid treatment and preparation of patients for transportation.

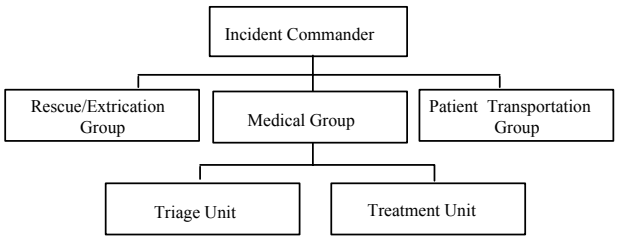
Support items may include ground tarps for the treatment area and signs identifying various areas.

Slide 4-29: Transportation Group Supervisor



G. Patient transportation group supervisor

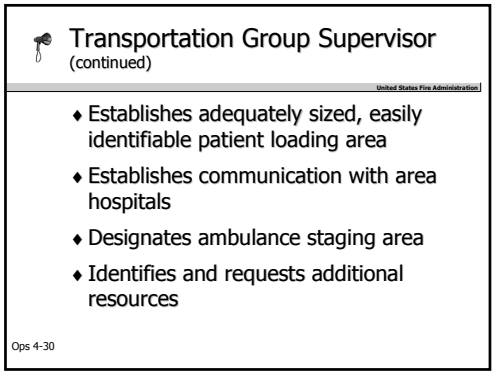
The patient transportation group supervisor is responsible for the overall management of patient movements from the incident site to the receiving hospital facility.



Instructor Notes:

Special attention must be given to the needs of the patients, and whether transport to a specialty referral center (for example, a trauma, burn, or microsurgery replantation center) is required. In addition to the patient's condition, the receiving hospital's ability to handle additional patients and the overall impact on the EMS system must be part of the decision-making process for patient destination.

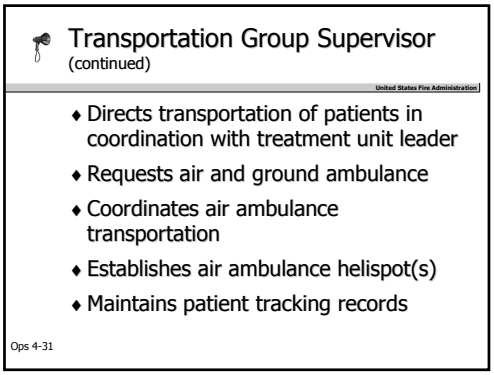
Slide 4-30: Transportation Group Supervisor (continued)



The patient transportation group supervisor:

- Establishes an adequately sized, easily identifiable patient loading area in coordination with the treatment unit leader;
- Establishes communication with area hospitals and maintains a list of capacities;
- Designates an ambulance staging area (if needed);
- Identifies and requests additional resources as required:
  - Communications and
  - Personnel:
    - Medical communications coordinator,

Slide 4-31: Transportation Group Supervisor (continued)



- Air ambulance coordinator, and
- Ground ambulance coordinator;

- Directs the transportation of patients in coordination with the treatment unit leader;
- Requests air and ground ambulances as needed;
- Coordinates air ambulance transportation;
- Establishes air ambulance helispot(s) as needed; and
- Maintains patient tracking records and other incident documents.

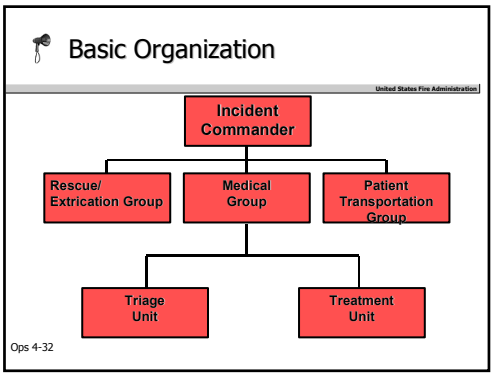
Instructor Notes:

Emphasize the need to select a loading area that avoids ambulances backing in. Backing creates a safety problem.

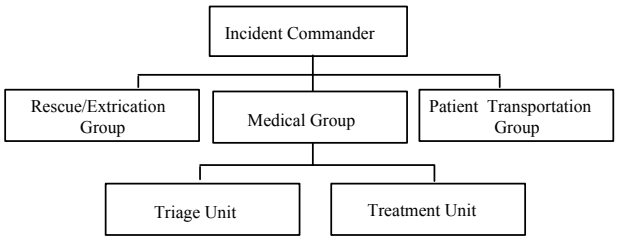
Limit the number of ambulances called in from staging to two or three at a time.

Ensure that triage tag stubs are removed and delivered to the medical communications coordinator.

Slide 4-32: Basic Organization

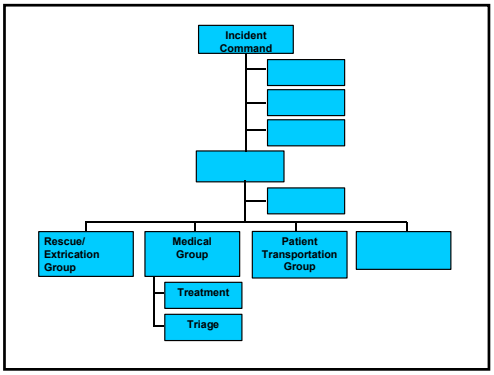


VII. The Basic Organization (10 minutes)



- With the basic organization in place, additional arriving resources are assigned to existing divisions/groups/units.
- These resources report to, work for, and communicate to the division/group supervisor or unit leader.
- The division/group supervisor has direct communication with the IC.

Slide 4-33: Expanding the Organization



VIII. Expanding the Organization (10 minutes)

Instructor Notes:

Refer students to Figure 4-9, Transition from Basic to Expanded, in their student manuals. The transition is presented in Figure 4-2 in the instructor guide.

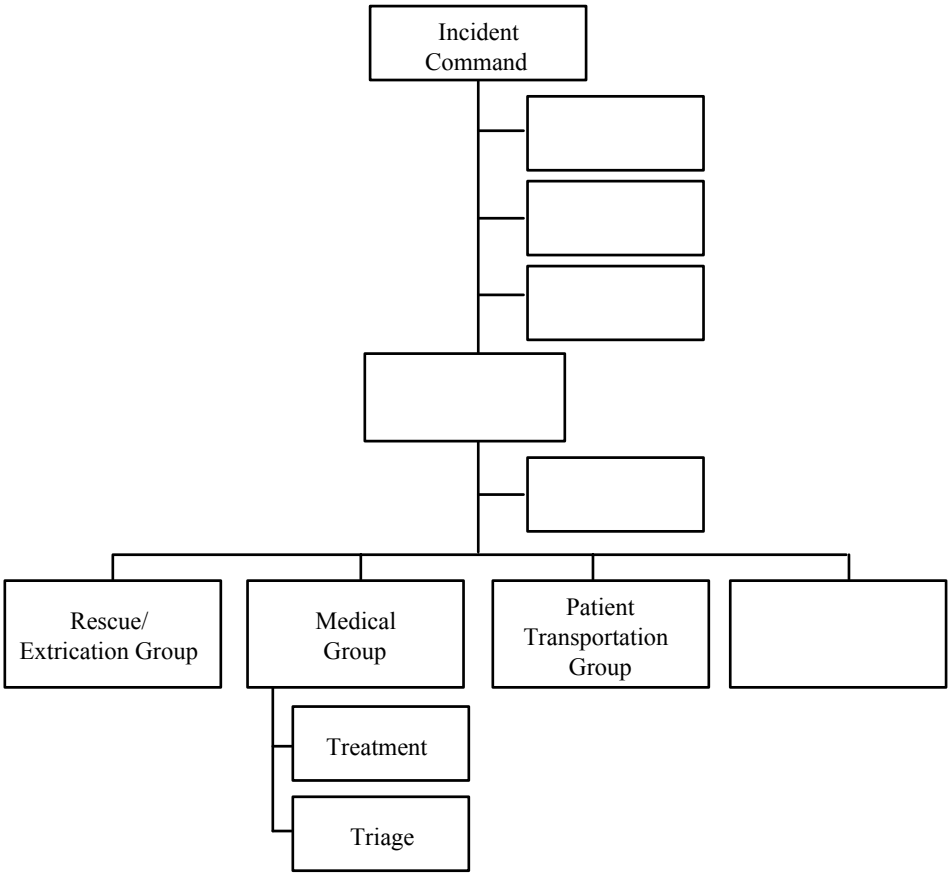


Figure 4-2: Transition from Basic to Expanded

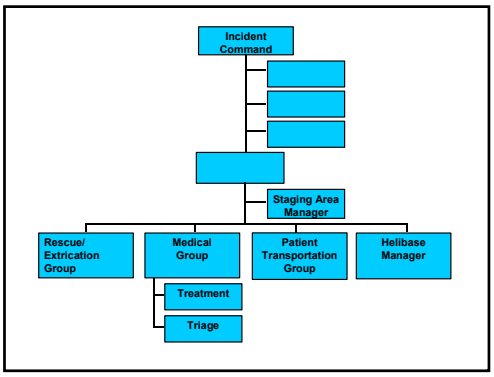
- The basic ICS organization described thus far shows a command structure that typically may be developed for the first wave of resource commitment.

- As additional resources arrive, they are assigned to existing organizational positions and work under the direction of the division/group supervisor or unit leader.

- In most cases, as these new positions are developed, only one or two members may be needed to complete the responsibilities and objectives of the division/group/unit.

- As additional resources arrive on the scene, the basic organization is expanded further to meet the incident needs and may include staging, air operations, law enforcement, information, and other positions.

Slide 4-34: Expanded Generic ICS Positions for EMS Incidents



IX. Expanded Generic ICS Positions for EMS Incidents (20 minutes)

Instructor Notes:

Refer students to Figure 4-10, Expanded Generic ICS Positions for EMS Incidents, in their student manuals. The organization chart is presented in Figure 4-3 in the instructor guide.

The figure shows a typical command organization for a multicasualty incident. This organization could handle two- or three-dozen patients easily without additional new positions (depending on the incident). Additional resources are filled in to existing organizational positions.

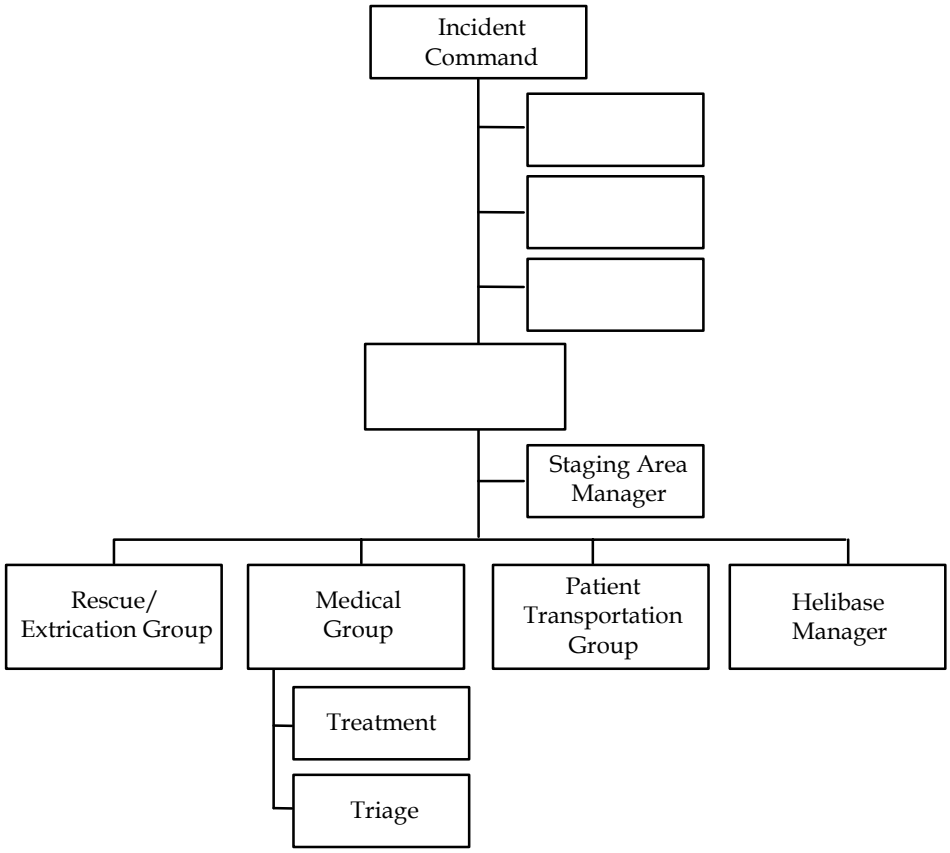


Figure 4-3: Expanded generic ICS Positions for EMS Incidents

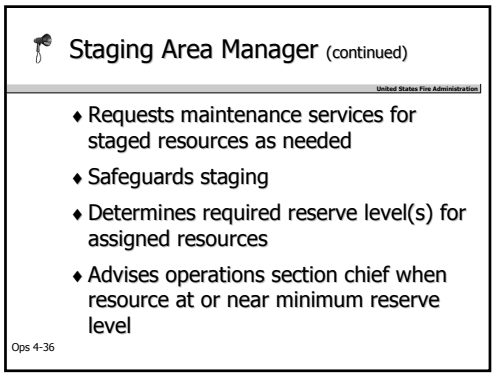
Slide 4-35: Staging Area Manager

A. Staging area manager

The staging area manager:

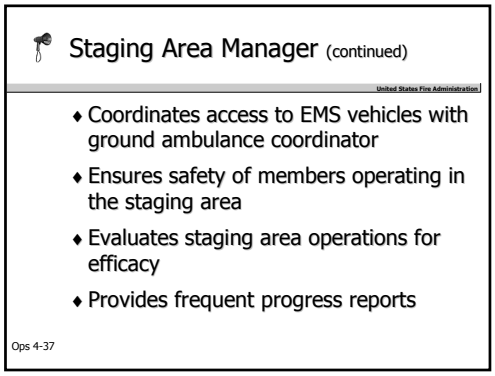
- Manages an area for resources to be temporarily located while awaiting tactical assignment;
- Reports to the operations section chief or to the IC in the absence of an operations section chief;
- Assembles, coordinates, and controls resources assigned to staging (personnel, vehicles, and equipment):
  - Ensures unimpeded access and egress to and from the staging area and access and mobility of resources within the staging area;
  - Establishes an accurate inventory system for all responding units (check in/check out);
  - Provides routing instructions for resources given tactical assignments;

Slide 4-36: Staging Area Manager (continued)



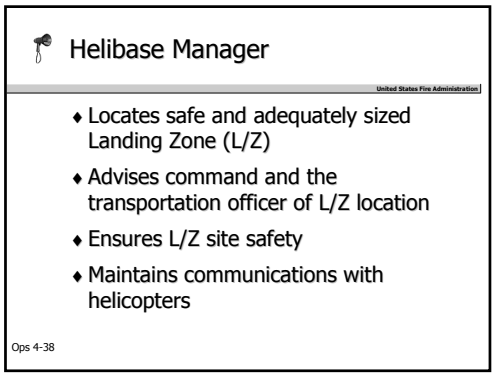
* Requests maintenance services for staged resources as needed;
* Safeguards staging (law enforcement assistance may be required);
* Determines required reserve level(s) for assigned resources by type and kind from the operations section chief (for example, backup resources);
* Advises the operations section chief when a particular type of resource is at or near minimum reserve level;

Slide 4-37: Staging Area Manager (continued)

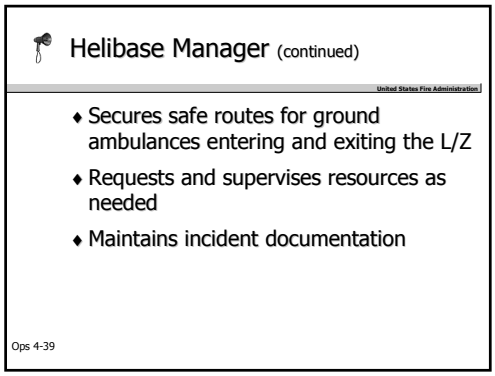


* Coordinates access to EMS vehicles with the ground ambulance coordinator;
* Ensures safety of members operating in the staging area;
* Evaluates staging area operations for efficacy and communicates resource requirements to the operations section chief as needed; and
* Provides frequent progress reports to the operations section chief.

Slide 4-38: Helibase Manager



Slide 4-39: Helibase Manager (continued)



B. Helibase manager/Landing Zone (L/Z)

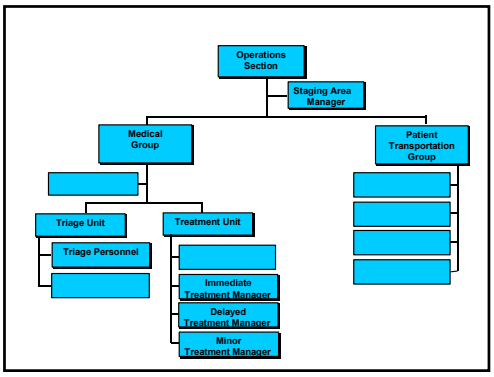
Where helicopter transportation is needed, a helibase manager and L/Z will be required.

The helibase manager:

* Locates a safe and adequately sized L/Z;
* Advises command and the patient transportation group supervisor of the L/Z location;
* Ensures L/Z site safety;
* Maintains communications with helicopters;
* Secures safe routes for ground ambulances entering and exiting the L/Z;
* Requests and supervises resources as needed; and
* Maintains incident documentation.

- If the incident involves multiple aircraft, an air operations branch may be established. The purpose of air operations branch director is to serve as an air traffic controller and to ensure safe operations of all inbound, exiting, and overhead aircraft.

Slide 4-40: Expansion of ICS Mulicasualty Branch



X. Expansion of ICS Multicasualty Branch (20 minutes)

As incident needs are identified and expanded further, there will be a need to implement additional ICS positions related to medical operations in order to maintain a span-of-control and meet the medical needs of the incident.

Additional positions may be needed within the medical group and the patient transportation group.

Instructor Notes:

Refer students to Figure 4-11, Expansion of ICS Branch, in their student manuals for the following lecture. The chart is shown in Figure 4-5 in the instructor guide.

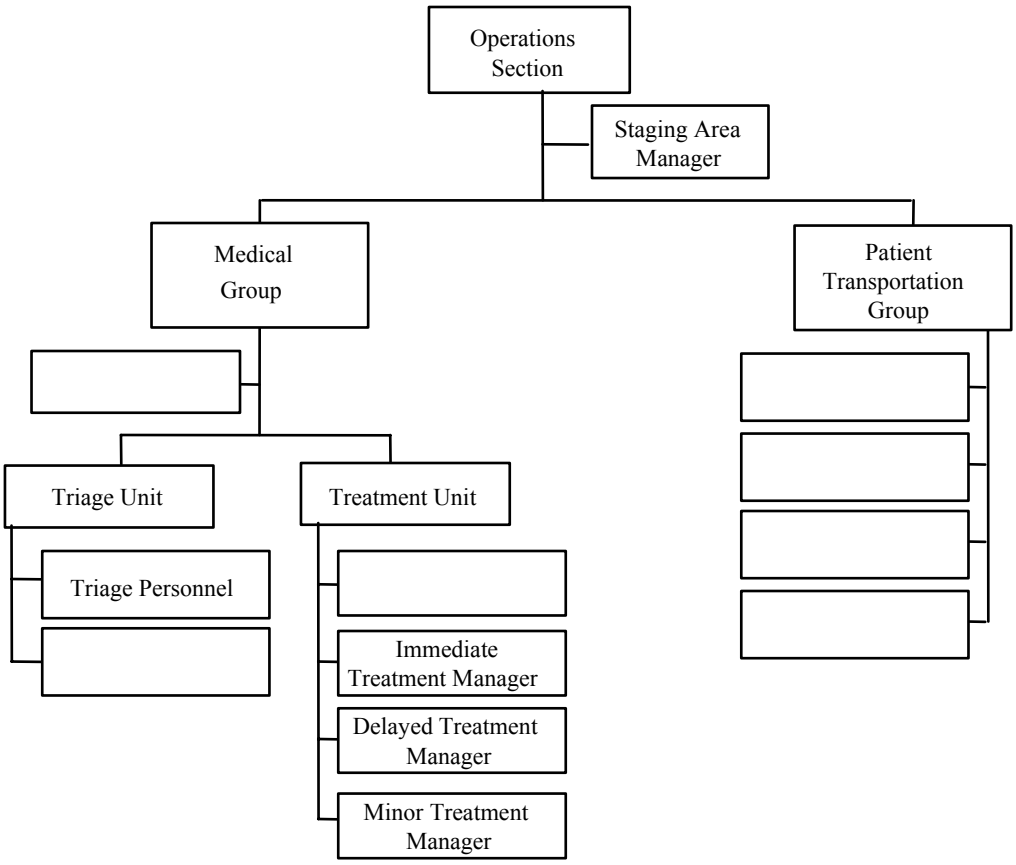
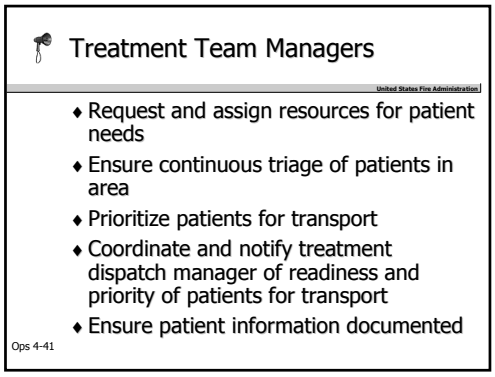


Figure 4-5: Expansion of ICS Multicasualty Branch

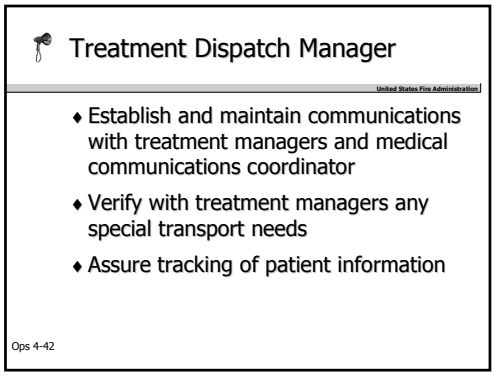
Slide 4-41: Treatment Team Managers



A. Treatment team managers

- Based on the number of patients and triage categories, there may be a need to implement specific treatment team managers.
- Typically, there is one treatment team manager for each designated triage category: immediate, delayed, or minor.
- The treatment team managers report to the treatment unit leader.
- Responsibilities include:
  - Requesting medical teams as necessary;
  - Assigning treatment personnel to patients;
  - Ensuring the continuous triage of patients within the area;
  - Ensuring that patients are prioritized for transport;
  - Coordinating and notifying the treatment dispatch manager of the readiness and priority of patients for transport; and
  - Ensuring appropriate patient information is documented.

Slide 4-42: Treatment Dispatch Manager



B. Treatment dispatch manager

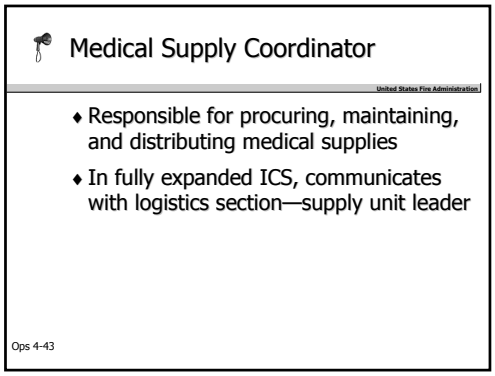
- The treatment dispatch manager acts as the liaison between the treatment managers and the patient transportation group.
- The treatment dispatch manager reports to the treatment unit leader.
- Responsibilities include:
  - Establishing and maintaining communications with the treatment managers and the medical communications coordinator;
  - Advising the medical communications coordinator when patients are ready for transport;
  - Verifying with treatment managers the priority for patient transports and of any special needs, such as a burn center or pediatric facility;
  - Coordinating the loading of patients with transport personnel and treatment managers;
  - Assuring appropriate tracking of patient information; and
  - Coordinating ambulance

loading with the treatment manager and ambulance personnel.

Instructor Notes:

Emphasize that the treatment team manager and treatment dispatch manager report to the treatment unit leader.

Slide 4-43: Medical Supply Coordinator



C. Medical supply coordinator

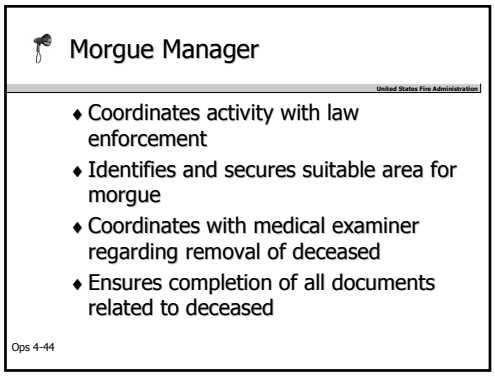
Instructor Notes:

Refer students to Figure 4-12, Medical Group, in their student manuals for the following lecture on the medical supply manager and the morgue manager. The chart is provided as Figure 4-6 in the instructor guide.

- As a medical incident progresses, the need for additional medical supplies will be evident.
- The medical supply coordinator is responsible for procuring, maintaining, and distributing medical supplies to the treatment and triage units.
- The medical supply coordinator reports to the medical group supervisor.
- In a fully expanded ICS organization, the medical supply coordinator will communicate and

coordinate with the logistics section—supply unit leader.

Slide 4-44: Morgue Manager

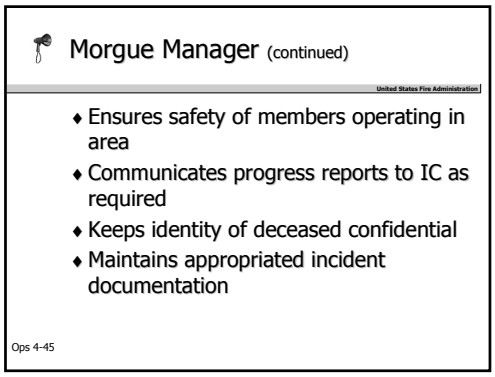


D. Morgue manager

The morgue manager:

- Coordinates activity with law enforcement representatives for area security;
- Identifies and secures a suitable area for the morgue and coordinates with logistics to secure refrigeration unit and pallets, if necessary;
- Coordinates with medical examiner/coroner representative regarding removal of the deceased;
- Ensures completion of all associated documents related to the deceased and transfer the remains from the agency to other authorized authorities;

Slide 4-45: Morgue Manager (continued)



- Ensures safety of members operating in the area;
- Communicates progress reports to the IC as required;
- Keeps identity of the deceased confidential; and
- Maintains appropriate incident documentation.

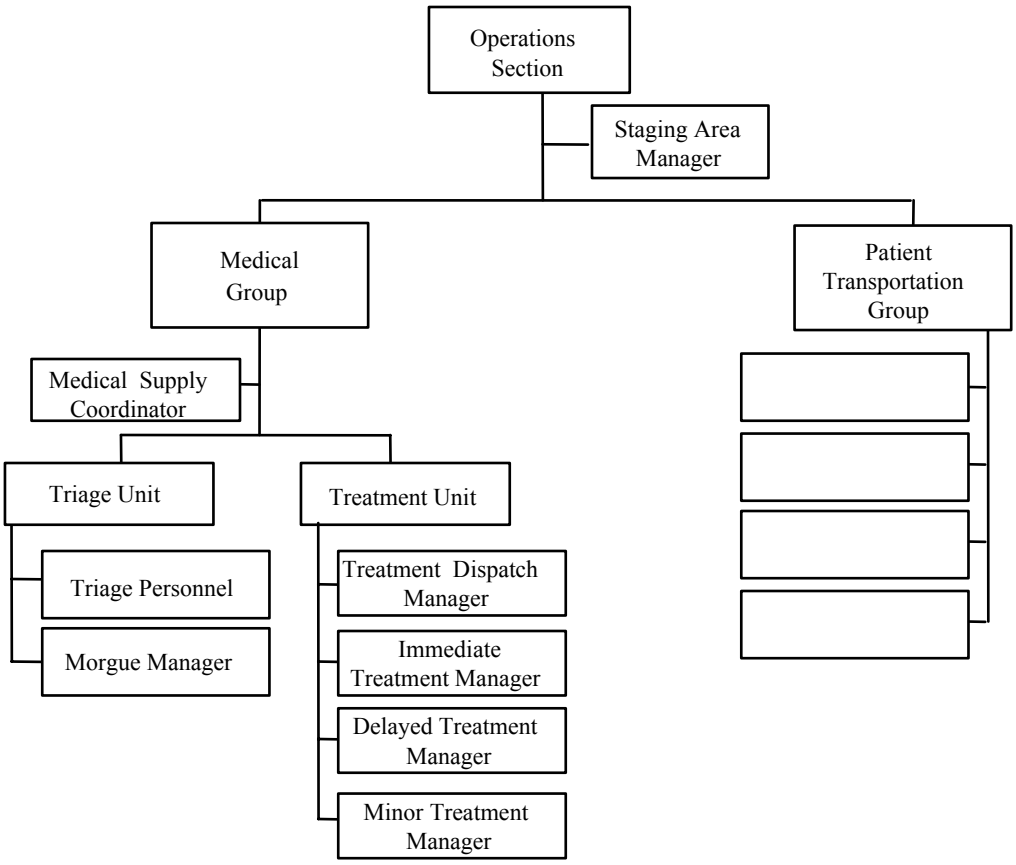
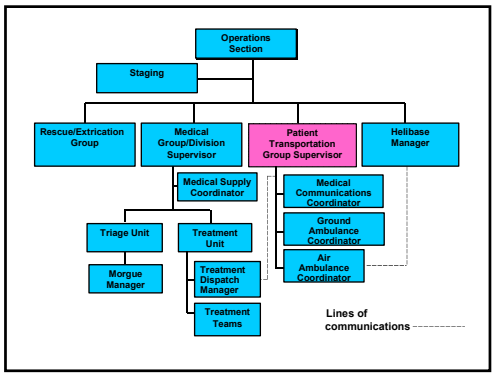


Figure 4-6: Medical Group

Slide 4-46: Medical Communications Coordinator



E. Medical communications coordinator

Instructor Notes:

Within the patient transportation group, three additional positions may be required as the incident expands.

Refer students to Figure 4-13, Patient Transportation Group, in their student manuals as you discuss the medical communications coordinator and the air/ground ambulance coordinators. The chart is provided as Figure 4-7 in the instructor guide.

- As the incident becomes more complex, the need to establish formal communications to outside resources will be evident.

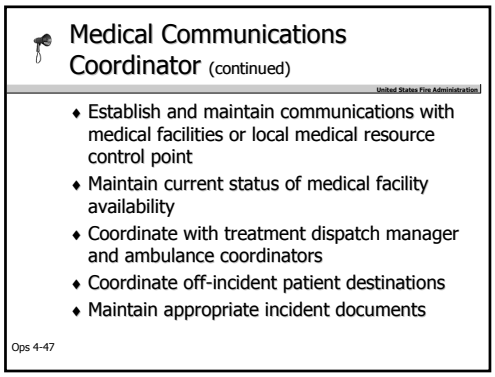
Instructor Notes:

Stress to students that a key function of the ICS branch is to not relocate the incident to a given hospital. The medical communications coordinator is a critical part of that function by being the link from incident site to area or regional medical facilities. Based on initial incident size-up and projections, the medical communications coordinator may in fact be one of the first positions filled when setting up the ICS.

- The primary role of the medical communications coordinator is to

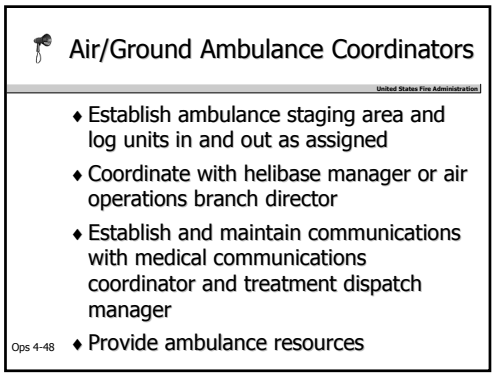
maintain communications with medical facilities in order to assure proper and rapid transport of patients to appropriate facilities.

Slide 4-47: Medical Communications Coordinator (continued)



- Responsibilities include:
  - Establishing communications with individual medical facilities or a regional control point, if available;
  - Maintaining current status of medical facility availability and capability;
  - Communicating and coordinating with the treatment dispatch manager and ambulance coordinators for the transport of patients;
  - Coordinating off-incident patient destinations with the medical facilities; and
  - Maintaining appropriate incident documents and medical facility availability and capability records.

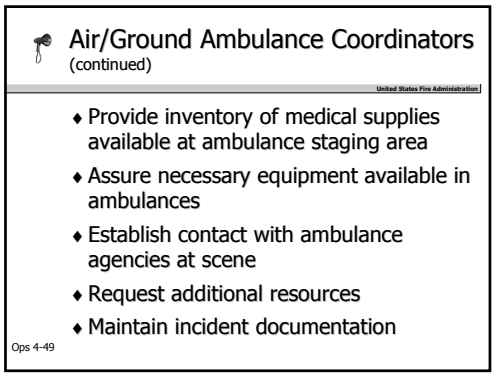
Slide 4-48: Air/Ground Ambulance Coordinators



F. Air/ground ambulance coordinators

- As the incident becomes more complex, the need to establish formal communications to outside resources will be evident.
- Responsibilities include:
  - Establishing an ambulance staging area, logging ambulances in and out as they arrive and/or are assigned to transporting patients;
  - Coordinating and communicating with the helibase manager or air operations branch director for ambulance operations;
  - Establishing and maintaining communications with the medical communications coordinator and treatment dispatch manager;
  - Providing ambulance resources as requested by the medical communications coordinator;

Slide 4-50: Air/Ground Ambulance Coordinators (continued)

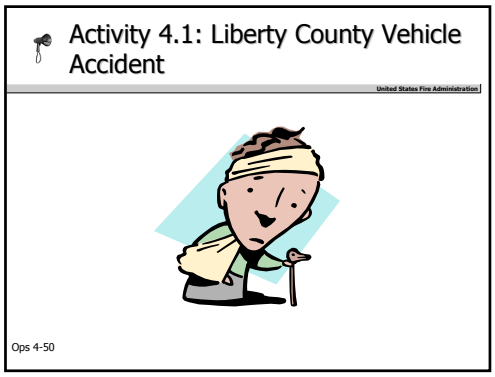


* Providing an inventory of medical supplies available at the ambulance staging area for use on the incident;
* Assuring that necessary equipment is available in the ambulance for patient needs during transport;
* Establishing contact with ambulance agencies at the scene;
* Requesting additional transportation resources as appropriate; and
* Maintaining incident documentation as required.

Instructor Notes:

Emphasize that the basic organization has absorbed the major resources in each of the basic positions (extrication/rescue, treatment, triage, and transportation). All the infill resources are being supervised and have direct radio communication to command.

Slide 4-50: Activity 4.1: Liberty County Vehicle Accident



XI. Activity 4.1: Liberty County Vehicle Accident (90 minutes)

Instructor Notes:

The following pages contain the instructor and student activity. Refer students to Activity 4.1, Liberty County Vehicle Accident, in their student manuals.

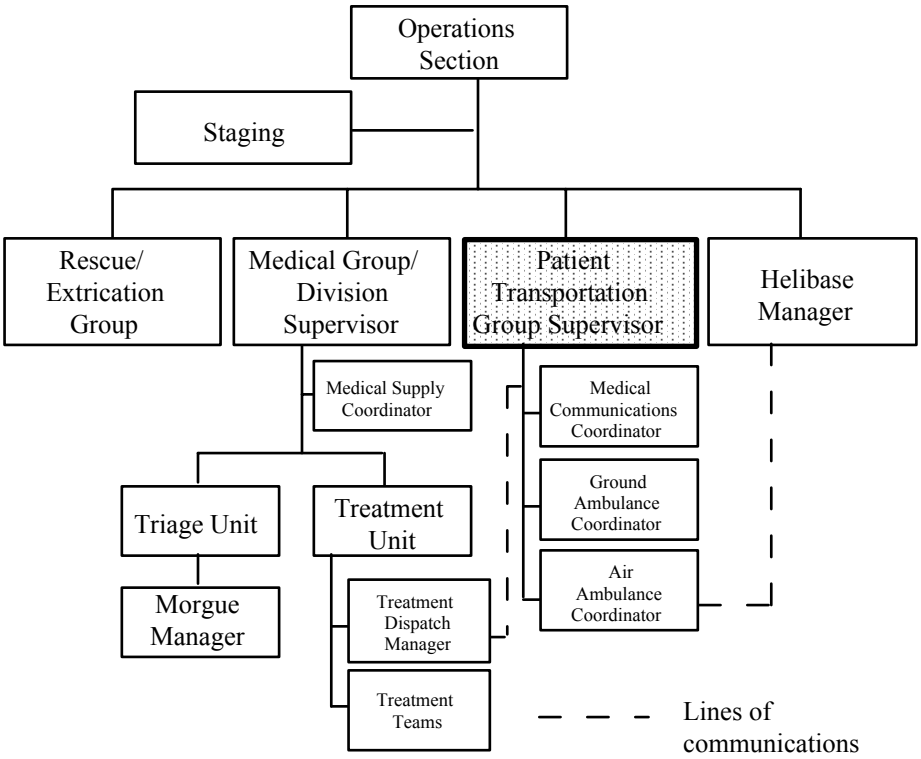


Figure 4-7: Patient Transportation Group

Activity 4.1:
Liberty County Vehicle Accident

Time: 90 minutes

Purpose:

To address several issues relative to incident management, including organizational structure, resource needs, potential problems, and sorting victims using the S.T.A.R.T. system of triage.

Materials:

- Easel pads
- Markers

Directions:

In this activity, the students will interact to address the incident command process as it relates to a specific incident, in this case, a school bus accident with 30 patients. The students will be addressing several issues relative to incident management, including organizational structure, identifying resource needs, identifying potential problems, and sorting victims using the S.T.A.R.T. system of triage.

This is a time-driven activity, which uses static slides to present information to the class. As such, it is imperative that the time sequence noted be followed as closely as possible.

1. Divide the student into four groups.

2. Instruct students to read and analyze the incident scenario (included in the student manual). For this activity, students are to assume the role of the duty battalion chief.

3. Present the slides and ask students to follow along in their manuals.

4. Instruct students to outline the incident in an organizational chart format on a flipchart using ICS covered in this module. Students should be specific as to any ICS position titles they would fill, and by whom.

5. Instruct students to draw an incident map showing the EMS functional areas in

relationship to the incident.

6. Instruct students to prepare a list of projected potential problems, resource needs, and issues, and how they would address each of these items.

7. Instruct the students to review the patient information and, using the S.T.A.R.T. system of triage, circle the category on the Patient List chart that the patient would be placed in.

8. Each group will select a group spokesperson to present their conclusions to the class.

Circulate among the groups as they work, providing guidance as needed.

Students will have 60 minutes to prepare their ICS charts; list potential problems, resource needs, and issues and how they will address them; and assign victims to triage categories.

Students will have 30 minutes to report to the class.

Scenario:

- Day/time: Friday, 2000 hours, mid-January

- Weather: temperature 45°F, winds are SSE @ 5 to 10 mph with overcast skies

- Initial report: 911 telephone call reporting a vehicle accident with victims trapped at state Route 52 and East Lake. Reporting party could not tell how many people were trapped or how many vehicles were involved. It was too dark for them to tell.

- Initial dispatch: At 2001 hours Liberty Communications dispatches an initial vehicle extrication response to include:

  * 2 Liberty County sheriff's units
  * Liberty Engine 203
  * Central Truck 101
  * Liberty Battalion 1
  * LifeLine 22

Group presentations:

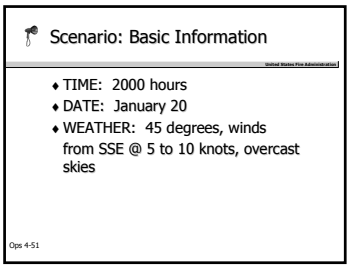
When students have completed the exercise, ask each group's spokesperson to report on the group's ICS chart; lists of potential problems, resource needs, and issues and how they would address each of the items; and how many immediate, delayed, minor, and deceased victims they counted. Ask groups to comment on or ask questions about other groups' answers.

The Patient List instructor's key of the correct category of triage follows the scenario information. (Student manuals include a Patient List without the answers.)

Upon completing the activity, students naturally will be anxious, and will want to know if their approaches were correct. Stress that the intent is not to determine who is correct or not, but to point out the need and benefits of an ICS in organizing an emergency incident and addressing projected needs and problems.

As projected needs are mentioned, if the students have not found a way to address the issue, lead a discussion as to what component of the ICS would be the best place to direct the issue for resolution.

Slide 4-51: Scenario Basic Information



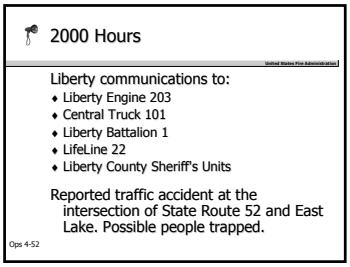
SCENARIO BASIC NFORMATION

Time: 2000 hours

Date: January 20

Weather: 45° F, winds from SSE @ 5 to 10 mph, overcast skies.

Slide 4-52: 2000 Hours



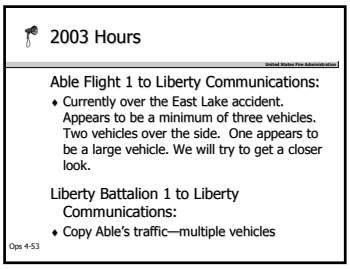
2000 HOURS

Liberty Communications to:

- **Liberty Engine 201**
- **Central Truck 101**
- **Liberty Battalion 1**
- **LifeLine 22**
- **Liberty County sheriff's units**

Message: Reported traffic accident at the intersection of state Route 52 and East Lake. Possible people trapped.

Slide 4-53: 2003 Hours



2003 HOURS

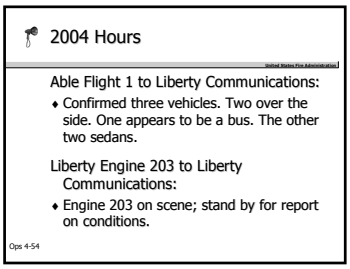
Able Flight 1 to Liberty Communications:

Message: Currently over the East Lake accident. Appears to be minimum of three vehicles. Two vehicles over the side. One appears to be a large vehicle. We will try to get a closer look.

Liberty Battalion 1 to Liberty Communications:

Message: Copy Able's traffic—multiple vehicles

Slide 4-54: 2004 hours



2004 HOURS

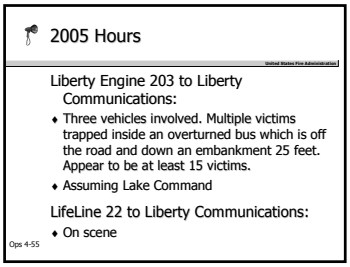
Able Flight 1 to Liberty Communications:

Message: Confirmed three vehicles. Two over side. One appears to be a bus. The other two sedans.

Liberty Engine 203 to Liberty Communications:

Message: Engine 203 on scene; stand by for report on conditions.

Slide 4-55: 2005 Hours



2005 HOURS

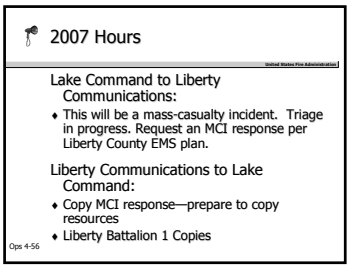
Liberty Engine 203 to Liberty Communications:

Message: Three vehicles involved. Multiple victims trapped inside an overturned bus that is off the road and down an embankment 25 feet. Appears to be at least 15 victims. Assuming Lake Command.

LifeLine 22 to Liberty Communications:

Message: On scene.

Slide 4-56: 2007 Hours



2007 HOURS

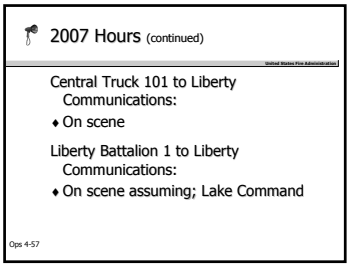
Lake Command to Liberty Communications:

Message: This will be a mass-casualty incident. Triage in progress. Request an MCI response per Liberty County EMS plan.

Liberty Communications to Lake Command:

Message: Copy MCI response—prepare to copy resources. Liberty Battalion 1 copies.

Slide 4-57: 2007 Hours (continued)



2007 HOURS (CONTINUED)

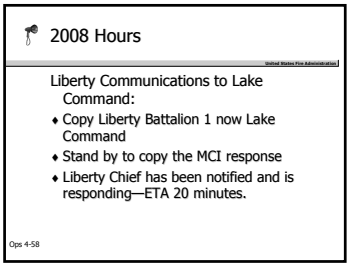
Central Truck 101 to Liberty Communications:

Message: On scene.

Liberty Battalion 1 to Liberty Communications:

Message: On scene; assuming Lake Command.

Slide 4-58: 2008 Hours

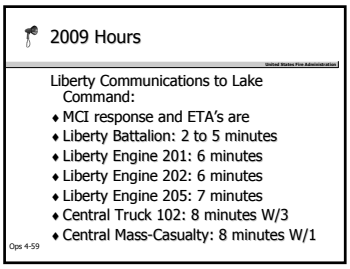


2008 HOURS

Liberty Communications to Lake Command:

Message: Copy Liberty Battalion 1 now Lake Command. Stand by to copy the MCI response. Liberty Fire Chief has been notified and is responding—ETA 20 minutes.

Slide 4-59: 2009 Hours



2009 HOURS

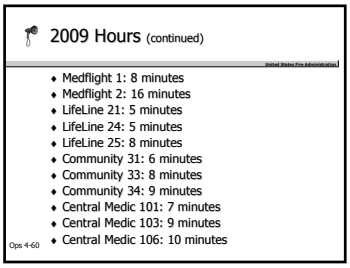
Liberty Communications to Lake Command:

Message:

MCI response and ETAs are:

- Liberty Battalion—2 to 5 minutes
- Liberty Engine 201—6 minutes
- Liberty Engine 202—6 minutes
- Liberty Engine 205—7 minutes
- Central Truck 102—8 minutes W/3
- Central Mass-Casualty—8 minutes W/1

Slide 4-60: 2009 Hours (continued)

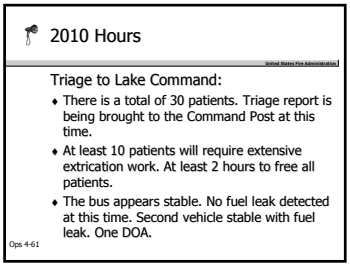


2009 HOURS (CONTINUED)

MCI response and ETAs (continued):

- Medflight 1—8 minutes
- Medflight 2—16 minutes
- LifeLine 21—5 minutes
- LifeLine 24—5 minutes
- LifeLine 25—8 minutes
- Community 31—6 minutes
- Community 33—8 minutes
- Community 34—9 minutes
- Central Medic 101—7 minutes
- Central medic 103—9 minutes
- Central Medic 106—10 minutes

Slide 4-61: 2010 Hours



2010 HOURS

Triage to Lake Command:

Message: There is a total of 30 patients. Triage report is being brought to the command post at this time. At least 10 patients will require extensive extrication work. At least 2 hours to free all patients. The bus appears stable. No fuel leak detected at this time. Second vehicle stable with fuel leak. One DOA.

Activity 4.1:
Patient List
Instructor Answer key

Instructor Notes:

The S.T.A.R.T. system is designed for quick, primary triage. Some students may feel a patient should be in a higher or lower category. Make a point that on-scene responders use their best judgments.

Victim	Type of Injury	Pertinent Information	Category
#1	Compound fracture, left femur	Respirations over 30/minute Radial pulse absent Awake	❑Deceased ❑**Immediate** ❑Delayed ❑Minor
#2 **Trapped**	Sudden onset of chest pain with shortness of breath	Respirations under 30/minute Capillary refill under 2 seconds Awake	❑Deceased ❑Immediate ❑**Delayed** ❑Minor
#3	90% second degree burns	Respirations none Radial pulse present Unconscious	❑**Deceased** ❑Immediate ❑Delayed ❑Minor
#4	Facial injury	Respirations over 30/minute Capillary refill under 2 seconds Awake	❑Deceased ❑**Immediate** ❑Delayed ❑Minor

Victim	Type of Injury	Pertinent Information	Category
#5 **Trapped**	Unable to move legs	Respirations under 30/minute Radial pulse present Awake	❑Deceased ❑Immediate **❑Delayed** ❑Minor
#6	No apparent injuries	Respirations normal Capillary refill under 2 seconds Awake	❑Deceased ❑Immediate ❑Delayed **❑Minor**
#7	Sucking chest wound	Respirations over 30/minute Radial pulse present Unconscious	❑Deceased **❑Immediate** ❑Delayed ❑Minor
#8	Dislocated right shoulder	Respirations under 30/minute Radial pulse present Awake	❑Deceased ❑Immediate ❑Delayed **❑Minor**
#9 **Trapped**	No visible wounds	Respirations none Radial pulse absent Unconscious	**❑Deceased** ❑Immediate ❑Delayed ❑Minor
#10	Scalp wound, estimated blood loss 500 cc	Respirations over 30/minute Capillary refill under 2 seconds Awake	❑Deceased **❑Immediate** ❑Delayed ❑Minor
#11 **Trapped**	Massive head injury	Respirations under 30/minute Radial pulse absent Unconscious	❑Deceased **❑Immediate** ❑Delayed ❑Minor

Victim	Type of Injury	Pertinent Information	Category
#12	Bruising over abdomen, complaining of abdominal pain	Respirations over 30/minute Capillary refill under 2 seconds Awake	❑Deceased ❑**Immediate** ❑Delayed ❑Minor
#13 **Trapped**	Impaled, 1 foot piece of shrapnel in right eye	Respirations under 30/minute Radial pulse present Awake	❑Deceased ❑Immediate ❑**Delayed** ❑Minor
#14	Female six-months pregnant; broken left, lower leg	Respirations under 30/minute Capillary refill under 2 seconds Awake	❑Deceased ❑Immediate ❑**Delayed** ❑Minor
#15	Severe difficulty breathing, chest sinks in on inspiration	Respirations over 30/minute Radial pulse present Awake	❑Deceased ❑**Immediate** ❑Delayed ❑Minor
#16	Unable to move, no verbal response	Respirations under 30/minute Radial pulse present Awake and staring	❑Deceased ❑**Immediate** ❑Delayed ❑Minor
#17 **Trapped**	Amputated left arm, bleeding controlled	Respirations under 30/minute Capillary refill under 2 seconds Awake	❑Deceased ❑Immediate ❑**Delayed** ❑Minor
#18	Large head wound, brain matter showing	Respirations absent Radial pulse absent Unconscious	❑**Deceased** ❑Immediate ❑Delayed ❑Minor

Victim	Type of Injury	Pertinent Information	Category
#19	Minor abrasions	Respirations under 30/minute Capillary refill under 2 seconds Awake	❑Deceased ❑Immediate ❑Delayed **❑Minor**
#20	Bruise on forehead, blood in ears and nose	Respirations under 30/minute Radial pulse present Unconscious	❑Deceased **❑Immediate** ❑Delayed ❑Minor
#21	Third degree burns over front of both legs	Respirations under 30/minute Radial pulse present Awake	❑Deceased ❑Immediate **❑Delayed** ❑Minor
#22	Compound fracture, left arm	Respirations under 30/minute Radial pulse present Awake	❑Deceased ❑Immediate **❑Delayed** ❑Minor
#23 **Trapped**	Impaled stick in right chest	Respirations under 30/minute Capillary refill under 2 seconds Awake	❑Deceased ❑Immediate **❑Delayed** ❑Minor
#24	Second degree burns, legs	Respirations over 30/minute Radial pulse present Awake	❑Deceased **❑Immediate** ❑Delayed ❑Minor
#25	Blood in right eye	Respirations under 30/minute Capillary refill under 2 seconds Awake	❑Deceased ❑Immediate ❑Delayed **❑Minor**

Victim	Type of Injury	Pertinent Information	Category
#26	Three month old infant, no visible injury	Respirations absent Radial pulse present Unconscious	❑**Deceased** ❑Immediate ❑Delayed ❑Minor
#27 **Trapped**	Impaled object, RUQ abdomen; difficulty breathing	Respirations over 30/minute Radial pulse present Awake	❑Deceased ❑**Immediate** ❑Delayed ❑Minor
#28	Patient saying same words over and over, "What happened?"	Respirations under 30/minute Radial pulse present Awake	❑Deceased ❑**Immediate** ❑Delayed ❑Minor
#29	Spurting blood from neck injury	Respirations over 30/minute Radial pulse present Awake	❑Deceased ❑**Immediate** ❑Delayed ❑Minor
#30 **Trapped**	Patient states she is a diabetic; skin moist and clammy; feels shaky	Respirations under 30/minute Capillary refill over 2 seconds Awake	❑Deceased ❑**Immediate** ❑Delayed ❑Minor

Activity 4.1:
Liberty County Vehicle Accident
Student Activity Worksheet

Time: 90 minutes

Purpose:

To address several issues relative to incident management, including organizational structure, resource needs, potential problems, and sorting victims using the S.T.A.R.T. system of triage.

Directions:

1. The instructor will assign you to a small group.

2. You will read and analyze the following incident scenario. Your group will assume the role of the duty battalion chief.

3. Outline the incident in an organizational chart format on a flipchart using ICS covered in this module. Be specific as to any ICS position titles you would fill and who would fill the position.

4. Sketch an incident map showing the EMS functional areas in relationship to the incident.

5. Prepare a list of what you project to be potential problems, resource needs, and issues, and how you would address each of these items.

6. Review the patient information, and using the S.T.A.R.T. system of triage, circle the category on the Patient List chart that the patient would be placed in.

7. Each group will select a group spokesperson to present their conclusions to the class.

You will have 60 minutes to prepare your ICS charts; list potential problems, resource needs, and issues and how they will address them; and assign victims to triage categories.

At the end of the allotted time, the instructor will call on the group spokespersons to report to the class.

Scenario:

- Day/time: Friday, 2000 hours, mid-January
- Weather: temperature 45°F, winds are SSE @ 5 to 10 mph with overcast skies
- Initial report: 911 telephone call reporting a vehicle accident with victims trapped at state Route 52 and East lake. Reporting party could not tell how many people were trapped or how many vehicles were involved. It was too dark for them to tell.
- Initial dispatch: At 2001 hours Liberty Communications dispatches an initial vehicle extrication response to include:

  * 2 Liberty County sheriff's units
  * Liberty Engine 203
  * Central Truck 101
  * Liberty Battalion 1
  * LifeLine 22

Notes:

Activity 4.1:
Liberty County Vehicle Accident
Student Assessment Sheet

Group presentations:

When you have completed the exercise, your group's spokesperson will report on your group's ICS chart; lists of potential problems, resource needs, and issues and how you would address each of the items; and how many immediate, delayed, minor, and deceased victims they counted.

As you listen to other groups' answers, compare them to yours. If you have questions about their answers, ask them. The intent is not to determine who is correct or not, but to point out the need and benefits of an ICS in organizing an emergency incident and addressing projected needs and problems.

As the instructor tells the correct answers for patient triage, mark them on your Patient List chart.

MODULE 5

MODULE 5

HEALTH AND SAFETY OFFICER, LAWS AND REGULATIONS

MODULE 5:

HEALTH AND SAFETY OFFICER, LAWS AND REGULATIONS

Terminal Objective

Upon completing the module, students will be able to compare health and safety laws, standards, and regulations to written Standard Operating Guidelines (SOGs) for proper SOG content.

Enabling Objectives

Students will:

- Identify health risk factors that affect firefighters both long-term and on the fireground;
- Identify risk categories that affect firefighters on a long-term basis;
- Identify components of an Employee Assistance Program (EAP); and
- Identify how some of the standards and regulations affect safety on and off the fireground.

Requirements

Facility

Classroom with tables

Materials

- COTC Operations Instructor Guide
- COTC Operations Student Manual
- PowerPoint® slides

Equipment

- Computer
- LCD projector

- One portable screen or classroom equipped with screen
- Chalkboard/wipeboard
- Easel pads with markers

References

Technical Committee on Fire Service Occupational Safety. *NFPA 1500*, *Standard on Fire Department Occupational Safety and Health Program*. National Fire Protection Association, 2002.

Technical Committee on Structural Fire Fighting Protective Clothing and Equipment. *NFPA 1971*, *Standard on Protective Ensemble for Structural Firefighting*. National Fire Protection Association, 2000.

U. S. Department of Labor. Occupational Safety & Health Administration. 29 CFR 1910.1030: *Bloodborne Pathogens* <http://www.osha.gov/pls/oshaweb>.

- - -. Occupational Safety & Health Administration. 29 CFR 1910.120: *Hazardous Waste Operations and Emergency Response* <http://www.osha.gov/pls/oshaweb>.

Instructor Guidelines

This course is intended for a third level of management, the battalion chief or newly promoted chief officer, in a typical emergency services organization. The newly promoted chief officer will think in terms of strategy, as opposed to tactics, on an emergency scene. The officer will need a good, basic understanding of tactics as they play into strategic decisions, but will focus on strategic decisions. To this end, it is recommended that students complete Modules 1 through 3 (Application of the Incident Command System [ICS], Incident Command

Decision-Making, and Incident Action Plan [IAP]/Planning) before enrolling in any of the simulation exercise modules.

The simulations in this course are designed to provide opportunities for the newly promoted chief officers to develop their skills as incident commanders at emergencies that require more resources than "normal" first-alarm, initial attacks in their communities. This simulation methodology allows the students to transition from the tactical perspective of a company officer to a strategic perspective of a chief officer who makes command level decisions based on strategic objectives required of an incident commander at a major target hazard incident.

The officers attending this course should be familiar with the target hazards found in their communities. Some of these hazards are significant and are known as target hazards. Target hazards are defined as incidents that:

- Overload fire equipment and personnel resources;
- Involve atypical hazards;
- Produce a significant negative impact on the community;
- Require technical advice for effective strategy development; and
- May initiate multi-agency involvement.

The most serious of these target hazards, for example, a major commercial or high-rise fire, can quickly stretch the capacity of the fire department's resources.

The students should rotate through the various command and general staff positions to see the responsibilities of the incident commander as individual components. The instructor would normally divide the class into groups of six to eight students, assigning each student a position on the Incident

Management Team (IMT). An alternate method is to assign more experienced students to the IMT positions and assign other students in deputy or assistant roles, which allows them to shadow their more experienced peers. As the course develops, the instructor may begin to assign additional responsibilities to the command and general staff, including the development of the Incident Action Plan (IAP). The ICS forms needed to complete the IAP are included in the appendix of each simulation exercise module.

The instructor should carefully read the instructor guide and the student manual and become familiar with the content before presenting the course.

Methodology

This module uses lecture, discussion, and activities.

Outline

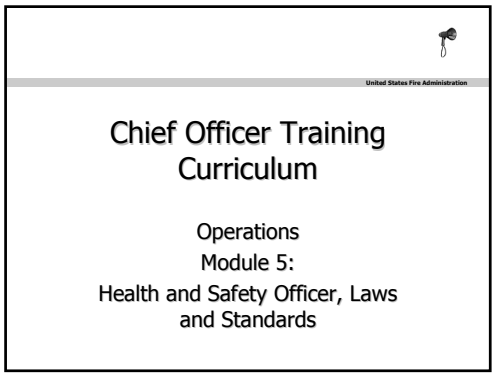
I. Objectives and Overview ..... 5 minutes
II. The Health and Safety Officer ..... 5 minutes
III. Background and Significance ..... 40 minutes
IV. Firefighter Wellness Programs ..... 45 minutes
V. Record Keeping and Documentation ..... 15 minutes
VI. Activity 5.1: Personal Action Plan for Health Maintenance ..... 60 minutes
VII. Consensus Standards ..... 20 minutes
VIII. Regulations Issued by Federal Administrative Agencies ..... 5 minutes
IX. Activity 5.2: Laws, Standards, and Regulations ..... 30 minutes
X. Standard Operating Guidelines (SOGs) ..... 5 minutes
XI. Influence and Effect of Laws, Standards, and Regulations on Department Operations ..... 5 minutes
XII. Module Summary ..... 5 minutes

240 minutes

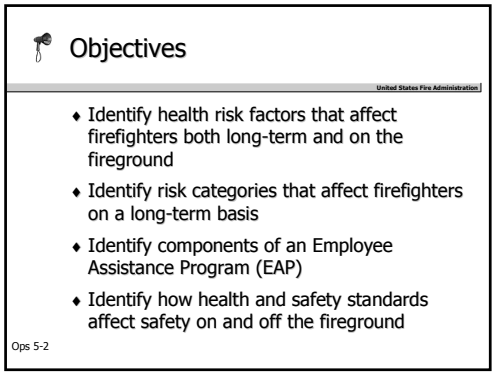
NFPA 1021 Standards Cross-Reference Matrix

3-2, 3-4, 3-7, 4-2, 4-3, 4-7

Slide 5-1: Module 5: Health and Safety Officer, Laws and Regulations



Slide 5-2: Objectives



I. Objectives and Overview (5 minutes)

A. Objectives

Students will be asked to:

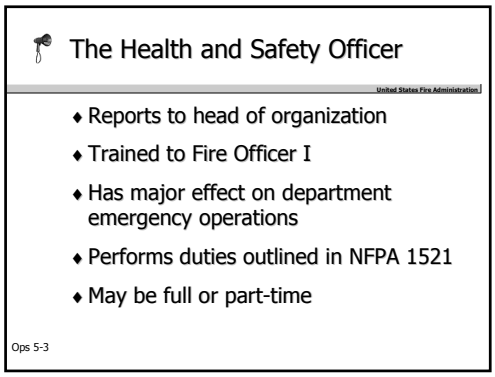
- Identify health risk factors that affect firefighters both long-term and on the fireground;
- Identify risk categories that affect firefighters on a long-term basis;
- Identify components of an Employee Assistance Program (EAP); and
- Identify how some of the health and safety standards and regulations affect safety on and off the fireground.

B. Overview

It is important to remember what happens when we don't do what we can to change things. Every year too many names that might not have to be there are added to the National Fallen Firefighters Memorial. Information presented in this class can have an impact on your department. Maybe not today, but perhaps someday in the future.

In this module, we will discuss the risk factors and risk categories that affect firefighters. We will then discuss the elements of an EAP and how some of the standards and regulations affect firefighter safety on and off the fireground.

Slide 5-3: The Health and Safety Officer



II. The Health and Safety Officer (5 minutes)

- The Health and Safety Officer (HSO) is an officer in the emergency response agency who reports to the head of the agency or a designee on matters relating to the safety of organizational members.

- The HSO should be an officer in the organization.

  * Status as an officer will help when dealing with other members of the department.

* In a fire department, the HSO must be trained at least to Fire Officer I level according to NFPA 1521, Standard for Fire Department Safety Officer.

- The duties of the HSO primarily are administrative and generally are conducted in nonemergency situations.

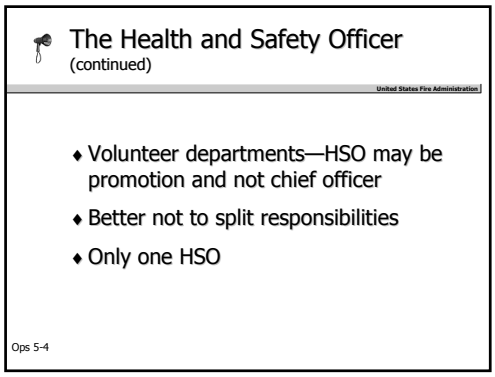
- The work of the HSO has a major impact on fire department emergency operations through the development of safety procedures, the use of protective clothing, and safety education.

- The HSO also may be responsible for safety activities at the scene of an emergency. When working at the scene of an emergency, the HSO is referred to as the ISO.

- The qualifications and duties of the HSO for a fire department are outlined in NFPA 1521.

- In smaller departments, the HSO may be an officer in the department who also has other responsibilities, such as training or some other administrative or operational function. In larger departments, the HSO may be a full-time staff person.

Slide 5-4: The Health and Safety Officer (continued)



- It is recommended that the HSO be an officer in the organization. However, in volunteer departments, the HSO position may be a promotion within the organization and serve both HSO and ISO functions.

- Whenever possible, the HSO should have no other responsibilities so that member safety can be foremost on his or her mind at all times.

  For example, if the HSO is also a training officer, he or she cannot be as objective as necessary when evaluating the safety of a training exercise.

- There is only one HSO for each emergency response organization.

Slide 5-5: Background and Significance

III. Background and Significance (40 minutes)

Instructor Notes:

Ask the questions:

Has anyone's department ever had a line-of-duty death? How did that affect your department?

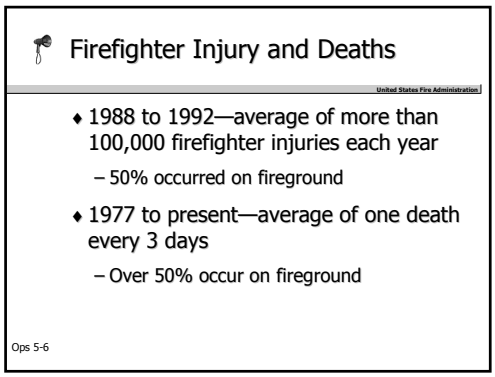
A. Firefighter injuries and deaths

Instructor Notes:

Discuss the need to review yearly the reports on the number of firefighter injuries and deaths. (The instructor should be familiar with the past year's statistics at least.)

Inform the students that the *NFPA Journal* publishes a report each year on these topics. Students should look at the specifics of some of the injuries and fatalities and ask, "Could this happen in my department?"

Slide 5-6: Firefighter Injuries and Deaths



- From 1988 to 1992, there was an average of more than 100,000 injuries each year, with 50 percent of those occurring on the fireground.
- This average is roughly 275 injuries per day. The odds are that someone in your department could be injured today, this week, or this month.

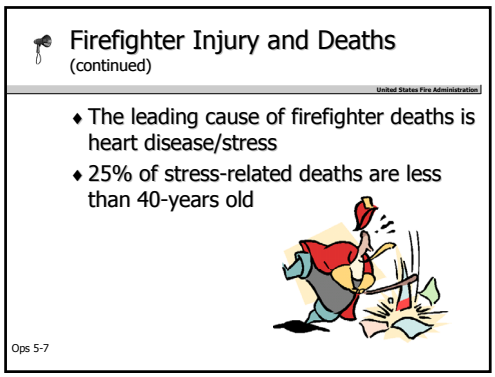
Instructor Notes:

Ask the questions:

How safe is your fireground? Do you have a number of injuries each year?

Ask for estimated numbers of injuries; look at the total number versus the number that occurs on the fireground.

Slide 5-7: Firefighter Injuries and Deaths (continued)



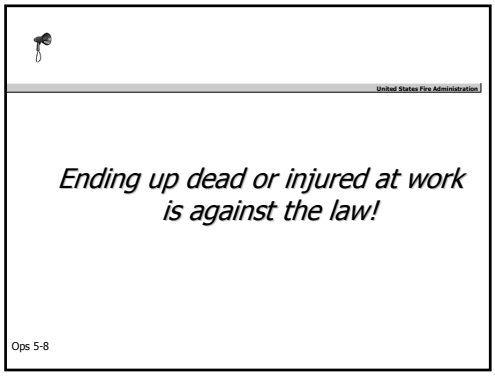
- Since 1977, there has been an average of 1 firefighter death every 3 days (125 per year).
- More than 50 percent of those deaths occurred on the fireground.
- The leading cause of all firefighter-related deaths is heart disease/stress.
- Half of the fireground deaths are stress-related (heart attacks).
- More than 50 percent of all firefighter deaths are stress-related.
  - Twenty-five percent of firefighters who die in this category are younger than 40 years of age.

    For those of you who are waiting for the older firefighters to die off to improve your seniority, this statistic should hit home.
  - Also, the number of firefighters who die from traumatic injuries are younger than 40 years old.
- OSHA Act of 1970: "Each employee shall comply with occupational safety and health standards and all rules,

regulations, and orders issued pursuant to this act which are applicable to his own actions and conduct."

- Ending up dead or injured at work is against the law.

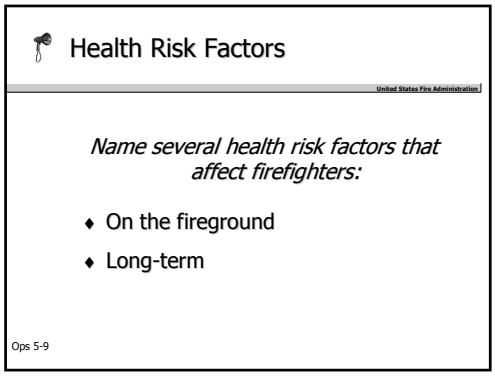
Slide 5-8: Against the Law



Instructor Notes:

Inform students of the website http://www.safetynext.com.

Slide 5-9: Health Risk Factors



B. Health risk factors for firefighters during fireground operations

Instructor Notes:

Ask the students to name several health risk factors that affect firefighters both long-term and especially on the fireground. List them on a flipchart. Then make the following points.

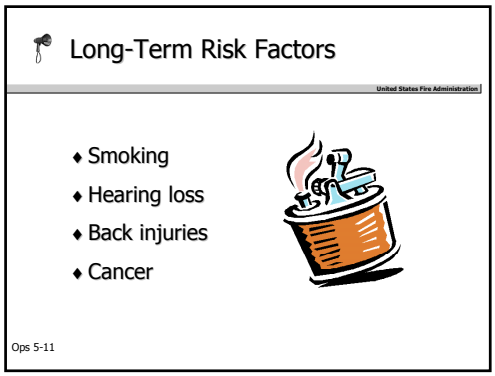
Slide 5-10: Fireground Risk Factors

- Lack of physical fitness:
  - Overweight and
  - No regular exercise program;
- History of illnesses:
  - Alcoholism,
  - Cardiovascular disease (includes high blood pressure),
  - Recent illness, and
  - Diarrhea; and
- Medications:
  - Antihistamines (Benadryl, Actifed—taken for colds and sinus problems);
  - Diuretics or hypertension medications (Lasix, Inderal, Isoptin, Procardia, Cardizem—taken for high blood pressure); and
  - Stimulants (caffeine, decongestants, or diet pills).

Instructor Notes:

Ask the students to name other problems that have a long-term effect on the health and well-being of firefighters.

Slide 5-11: Long-Term Risk Factors



C. Risk categories that affect firefighters on a long-term basis

- Smoking:
  - Most lung disease and heart disease hazards are increased in people who smoke.
  - Smoking increases the amount of carbon monoxide carried in the blood, thereby reducing the aerobic capacity firefighters have to perform the job.

Instructor Notes:

Have students give examples of their departments' smoking or tobacco policies.

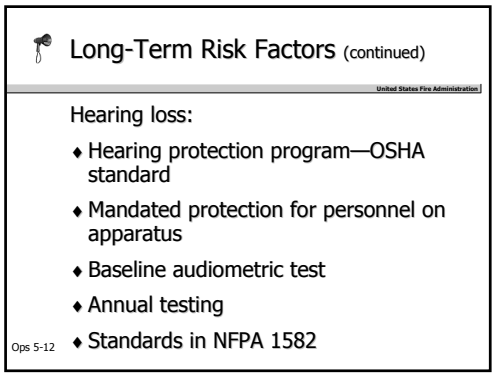
Ask the questions:

Do the policies limit or restrict where, when, or if firefighters can use tobacco?

Is this a change from when they started in the fire department?

Inform the students that several states prohibit firefighters from smoking on or off the job. This prohibition relates to the cancer and heart presumptive laws for firefighters.

Slide 5-12: Long-Term Risk Factors (continued)



- Hearing loss:
  - Fire departments should have a hearing protection program for firefighters.
  - The recommended standard would follow OSHA noise requirements on maximum Permissible Noise Level (PEL) for an 8-hour duration.
  - Hearing protection should be mandated for all personnel riding on fire apparatus. In most cases, protection should be used any time the apparatus is started or moved.
  - Programs should address the issue of those firefighters who have suffered significant hearing loss from job-related activities.
  - New firefighters should have a baseline audiometric test performed.

Instructor Notes:

Ask students if their departments perform and record the baseline hearing test of new employees.

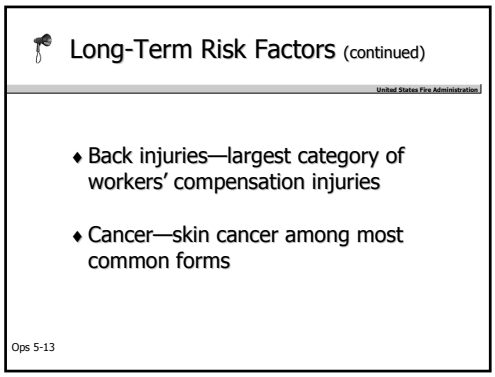
  - All personnel should receive annual testing.
  - Recommended standards are

in NFPA 1582.

Instructor Notes:

Inform the students that a good reference book is available from the USFA: *Hearing Conservation Program Manual*. This manual provides information on hearing loss and programs to help conserve hearing in firefighters.

Slide 5-13: Long-Term Risk Factors (continued)



- Back injuries:
  - Back injuries make up the largest category of workers' compensation injuries.
  - The key to controlling back injuries is to use preventive techniques that involve exercise to increase flexibility and back strength.

Instructor Notes:

Ask students what programs are in place in their departments to address the issue of back injuries.

Does the department issue back-support belts?

If you do patient transport, do the ambulances use one-person stretchers?

- Cancer:
  - Medical monitoring should be

carried out during employment, and problems should be addressed early.

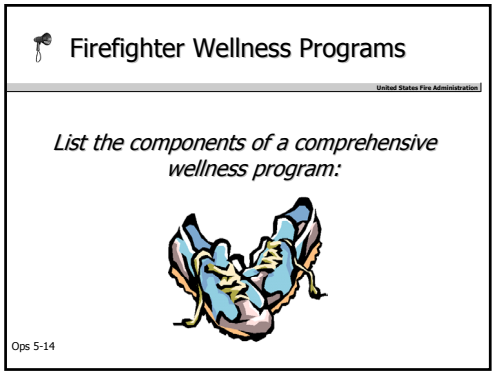
* Skin cancer is among the most common forms of cancer, and the use of Personal Protective Equipment (PPE) should be emphasized.

Instructor Notes:

Ask students if they have had members of their departments develop cancer either during their careers, or shortly thereafter.

What was the outcome?

Slide 5-14: Firefighter Wellness Programs



IV. Firefighter Wellness Programs (45 minutes)

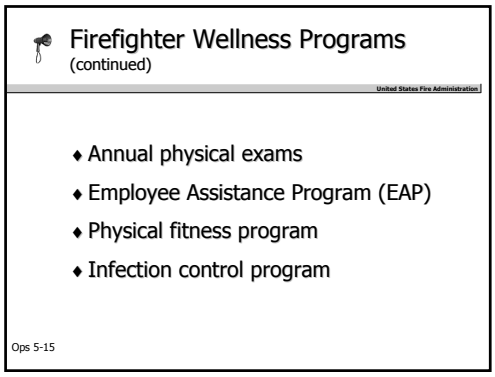
Instructor Notes:

Ask students if they have wellness programs in their departments and to name several components of a comprehensive wellness program. List them on a flipchart.

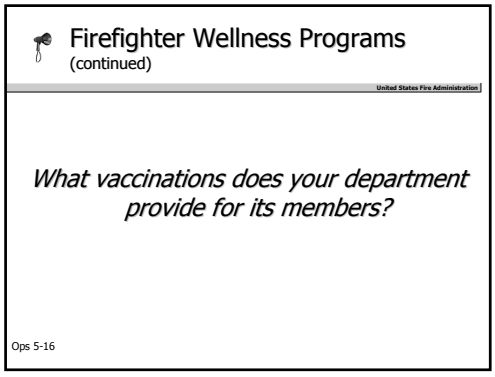
Suggested responses:

- Medical exams,
- Employee Assistance Program (EAP),
- Substance abuse prevention,
- Physical fitness program, and
- Infection control program.

Slide 5-15: Firefighter Wellness Programs (continued)



Slide 5-16: Firefighter Wellness Programs (continued)



A. Medical exams

- NFPA 1500, Chapter 10.1.3 states:

  "Candidates and members who will engage in fire suppression shall meet the requirements specified in NFPA 1582, *Standard for Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, prior to being medically certified for duty by the fire department physician."

- Vaccinations

Instructor Notes:

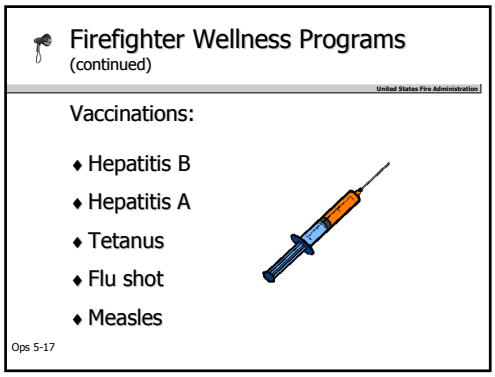
Ask the question:

What vaccinations does your department provide for its members?

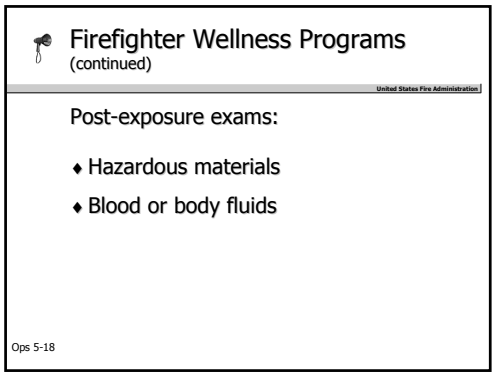
Suggested responses:

- Hepatitis B,
- Hepatitis A,
- Tetanus,
- Annual flu shot, and
- Measles (MMR).

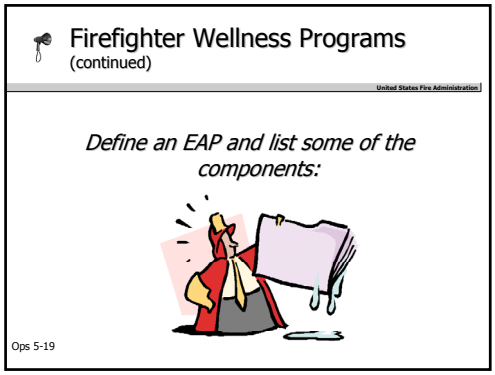
Slide 5-17: Firefighter Wellness Programs (continued)



Slide 5-18: Firefighter Wellness Programs (continued)



Slide 5-19: Firefighter Wellness Programs (continued)



- Post-exposure exams:
  - Hazardous materials and
  - Blood or body fluids.

B. Employee Assistance Program (EAP)

Instructor Notes:

Ask the students to define an EAP and to list some components (areas) of these programs.

Suggested responses:

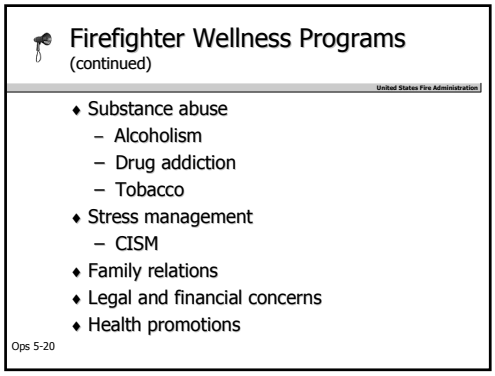
- Substance abuse:

* Alcoholism,
* Drug addiction, and
* Tobacco;

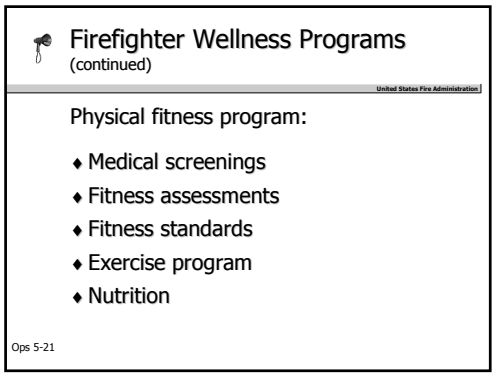
- Stress management;
- Critical Incident Stress Management (CISM);
- Family relations;
- Legal and financial concerns; and
- Health promotion.

Inform the students that some departments refer to these as Member Assistance Programs (MAP). Suggested guidelines can be found in NFPA 1500, Chapter 11.

Slide 5-20: Firefighter Wellness Programs (continued)



Slide 5-21: Firefighter Wellness Programs (continued)



C. Physical fitness program

Instructor Notes:

Before showing the slide, ask the students to define the parts of a physical fitness program.

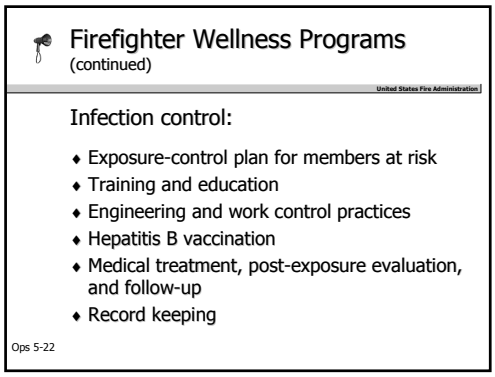
Suggested responses:

- Medical screening,
- Fitness assessment,
- Fitness standards,
- Exercise program, and
- Nutrition.

Being physically fit can reduce firefighter injuries and deaths, but physical fitness programs that are comprehensive and aimed at improving overall firefighter health must be developed.

The National Volunteer Fire Council has, with funding from the United States Fire Administration and assistance from Tri-Data Corporation, prepared a resource manual titled *Health and Fitness Programs in the Volunteer Fire Service*. This report describes health and fitness programs in nine volunteer fire departments from across the United States. Information in this manual may provide volunteer departments with an idea of how to implement or improve a health and fitness program.

Slide 5-22: Firefighter Wellness Programs (continued)



D. Infection control

Components in a complete infection control program include:

- An exposure-control plan for members at risk that would provide for detailed information about the remaining topics listed below:

- Training and education programs should be ongoing after the initial program, especially when the correct procedures were not followed;

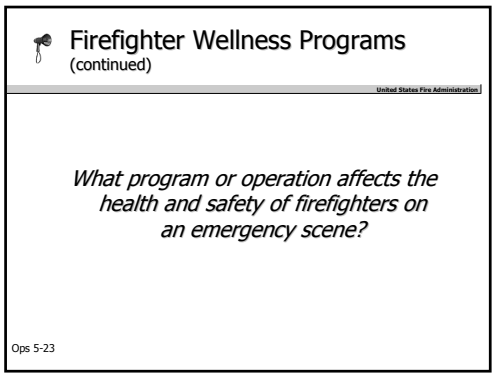
- Engineering and work control practices: The use of PPE is necessary for the safety of personnel. Decontamination of equipment and PPE should be planned for, and accommodations provided at the fire station.

- Hepatitis B vaccination: The vaccination is a normal series of three injections. In some cases, additional injections are required to achieve desired protection. Annual testing is recommended after the vaccination to assure presence of antibodies, and regular booster vaccinations are needed according to the manufacturer's schedule (usually every 5 years).

- Medical treatment, post-exposure evaluation, and follow-up: These practices would be outlined in the exposure-control plan and provide the steps to be taken in the event of an exposure to blood or body fluids.

- Record keeping: An important part of the process should ensure that proper documentation is done when an exposure occurs. An effective process is important in providing the proper follow-up treatment and benefits for an employee who has been exposed to blood or body fluids.

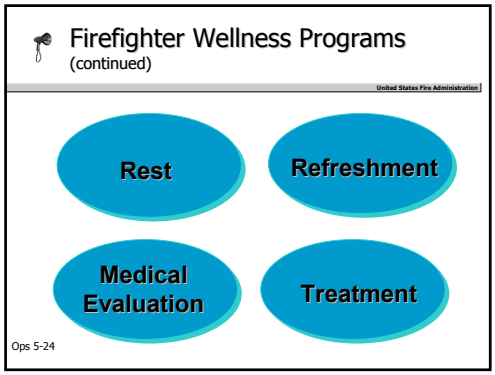
Slide 5-23: Firefighter Wellness Programs (continued)



Instructor Notes:

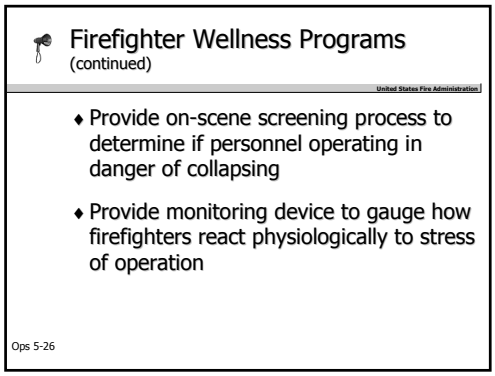
Ask the students to name a program or operation that affects the health and safety of firefighters on an emergency scene.

Slide 5-24: Firefighter Wellness Programs (continued)



Slide 5-25: Rehabilitation

Slide 5-26: Firefighter Wellness Programs (continued)



E. Fireground rehabilitation operations

- The four components of rehabilitation are:
  - Rest,
  - Refreshment,
  - Medical evaluation, and
  - Treatment.

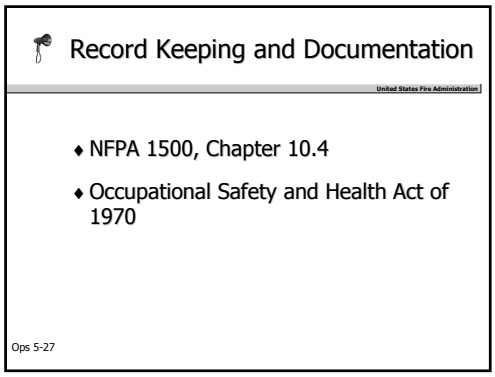
Instructor Notes:

Ask students if their departments do rehabilitation on scene.

Is it set up as a division or group under the IC? What special things are done in their departments' rehabilitation areas?

- Provide an on-scene screening process to help determine if any personnel operating on the scene are in danger of collapsing because of cardiovascular or other complications.
- Provide a monitoring device to gauge how firefighters are reacting physiologically to the stress of the current operation.

Slide 5-27: Record Keeping and Documentation



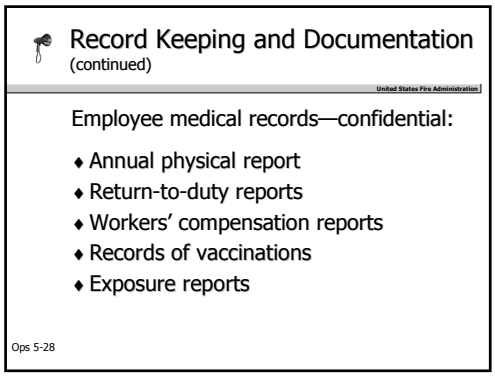
V. Record Keeping and Documentation (15 minutes)

NFPA 1500, Chapter 10.4, "Confidential Health Data Base," includes recommended guidelines for employee medical records. Chapter 10.4 states:

"The fire department shall ensure that a confidential, permanent health file is established and maintained on each individual member. The individual health file shall record the results of regular medical evaluations and physical performance tests, any occupational illnesses or injuries, and any events that expose the individual to known or suspected hazardous materials, toxic products, or contagious diseases."

- The Occupational Safety and Health Act of 1970 requires employers to keep permanent records on employee exposures to certain potentially toxic or harmful physical agents and is regulated in Part 1910, Subpart Z. All employers are required to keep records of occupational injuries and illnesses. Part 1910, Subpart C, deals with preservation of, and access to, these records.

Slide 5-28: Record Keeping and Documentation (continued)



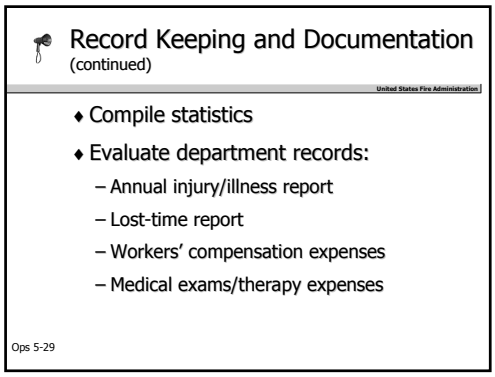
Examples of reports to keep in an employee's medical records include:

* Annual physical report,
* Return-to-duty reports,
* Workers' compensation reports,
* Records of vaccinations, and
* Exposure reports (haz mat, infectious disease).

- Medical records are confidential and cannot be disclosed or released without an employee's written consent. They should be available to anyone who has the employee's written consent. An employee's medical record is to be maintained for the duration of employment plus 30 years.

- Records of firefighter medical evaluations for each incident where rehabilitation is established should be filed and maintained. This is an incident group record of what findings were made on a certain incident. Check these incident records when you check individual records to complete the medical history of a fire department member.

Slide 5-29: Record Keeping and Documentation (continued)



- Every fire department keeps records and compiles statistics about its entire operation. Often that collection of data is just a collection of numbers. If you put forth the effort to collect data, you should make it work for you. Evaluate the records and look at what specifics are in the reports.

- Examples of records to develop and maintain include:

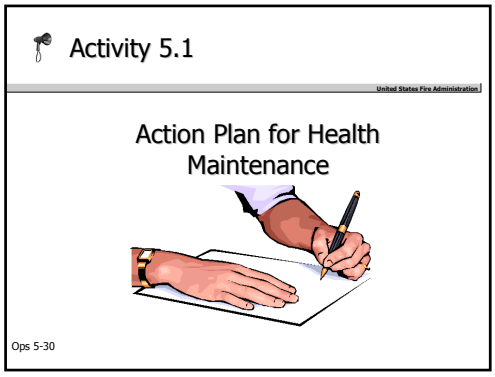
  * Annual injury/illness report (department record, IAFF, OSHA Log 200),

  * Lost-time report,

  * Workers' compensation expenses, and

  * Medical exams/therapy expenses.

Slide 5-30: Activity 5.1: Action Plan for Health Maintenance



VI. Activity 5.1: Action Plan for Health Maintenance (60 minutes)

Instructor Notes:

Refer students to Activity 5.1, Action Plan for Health Maintenance, in their student manuals.

Activity 5.1:
Action Plan for Health Maintenance

Time: 60 minutes

Purpose:

To identify areas for health maintenance improvement.

Materials:

- Student Activity Worksheets (provided in the student manuals)

Directions:

1. Instruct students to individually complete the following Action Plan for Health Maintenance. Students will have 20 minutes to complete the plan.

2. When students have completed it, assign students to small groups to discuss the health maintenance programs in their departments. Students will have 20 minutes to discuss their plans.

3. When the small groups have finished their discussions, lead a large group discussion. Ask the students what they have learned from listening to other students' plans. Did they learn about programs that their departments need?

Action Plan for Health Maintenance

1. Which of the following programs does your department have in place?

    - Annual physical exams
    - Baselines
    - Vaccinations
    - Employee Assistance Program (EAP)
    - Physical fitness
    - Substance abuse
    - Infection control
    - Rehabilitation operations on the fireground

2. Of those programs not in place, which would you make a priority to implement in your department? Why should the program(s) be a priority?

3. Do the programs meet your organization's needs? If so, how? If not, why not?

4. In your small groups, discuss how the programs meet your organization's needs. What can you learn from other students' plans?

Activity 5.1:
Action Plan for Health Maintenance
Student Activity Worksheet

Time: 60 minutes

Purpose:

To identify areas for health maintenance improvement.

Directions:

1. You will individually complete the following Action Plan for Health Maintenance. You will have 20 minutes to complete the plan.

2. When you have completed it, the instructor will assign you to a small group to discuss the health maintenance programs in your departments. You will have 20 minutes to discuss their plans.

3. When the small groups have finished their discussions, the instructor will lead a large group discussion.

Action Plan for Health Maintenance

1. Which of the following programs does your department have in place?

   - Annual physical exams
   - Baselines
   - Vaccinations
   - Employee Assistance Program (EAP)
   - Physical fitness
   - Substance abuse
   - Infection control
   - Rehabilitation operations on the fireground

_____

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2. Of those programs not in place, which would you make a priority to implement in your department? Why should the program(s) be a priority?

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3. Do the programs meet your organization's needs? If so, how? If not, why not?

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4. In your small groups, discuss how the programs meet your organization's needs. What can you learn from other students' plans?

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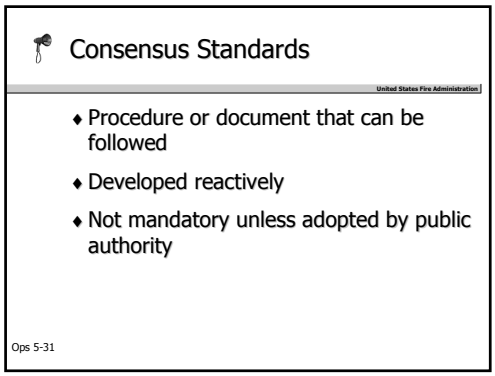
Slide 5-31: Consensus Standards



VII. Consensus Standards (20 minutes)

- Standards are developed per organizational requirements as a procedure or document that can be followed or adopted.
- The development of standards generally is reactive, in response to a fatality or serious injury.
- These standards are not mandatory unless officially adopted by public authorities with lawmaking or rulemaking abilities.

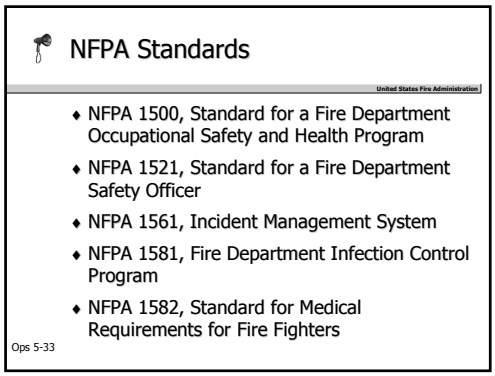
Instructor Notes:

The court system recognizes NFPA codes and standards as "Standards of Care," and OSHA can cite fire departments under the "General Duty Clause" referencing NFPA codes and standards.

Slide 5-32: Consensus Standards (continued)

- The NFPA publishes more than 270 nationally recognized codes and standards, such as the National Electrical Code and the Code for Safety to Life from Fire in Buildings and Structures.

Slide 5-33: NFPA Standards



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

Instructor Notes:

This part of the class is designed to briefly familiarize students with NFPA 1500. Please describe briefly the intent of NFPA 1500 and review the standard to familiarize yourself with it. If possible, have a copy with you during the course.

Scope: "NFPA 1500 contains the minimum requirements for a fire service occupational safety and health program."

Purpose: "NFPA 1500 specifies the minimum requirements for an occupational safety and health program for a fire department, and safety procedures for those members involved in rescue, fire suppression, and related activities."

An explanation of this standard is in the Student Manual. The *NFPA 1500 Handbook*, which is available from NFPA, reviews the standard paragraph by paragraph, and provides a detailed look at implementation. If students have particular questions have them discuss them with you at a break, at lunch, or after class.

* NFPA 1521, *Standard for Fire Department Safety Officer*;

* NFPA 1561, *Standard for Fire Department Incident Management System*;

* *NFPA 1581, Standard for Fire Department Infection Control Program*; and

* NFPA 1582, *Standard on Medical Requirements for Fire Fighters*.

Slide 5-34: NFPA Standards (continued)

- NFPA fire service occupational safety and health standards address specific safety and health issues.

- Protective clothing and equipment standards address the manufacturers' design criteria for protective clothing and equipment for fire and EMS personnel:

  * Structural firefighting clothing and equipment, such as turnout coats, turnout pants, helmets, boots, and gloves;

  * Protective equipment such as Self-Contained Breathing Apparatus (SCBA), Personal Alert Safety Systems (PASS), and rope;

  * Protective clothing for personnel involved in wildland; hazardous materials; and crash, fire, and rescue operations; and

- Protective clothing for personnel engaged in emergency medical operations.

- Design criteria for various types of fire apparatus and equipment:

  - Manufacturers' specifications for pumpers, aerial ladders and platforms, and tankers;

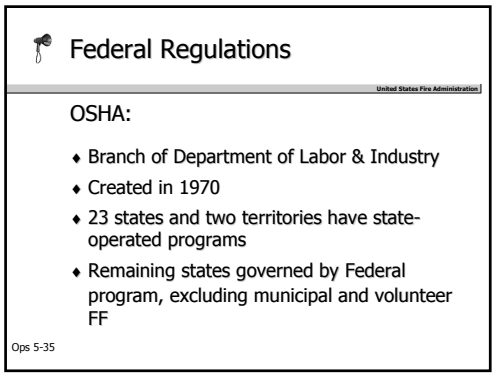
  - Design specifications for hose, ground ladders, and nozzles; and

  - Annual testing criteria for apparatus and equipment to ensure safety in operations;

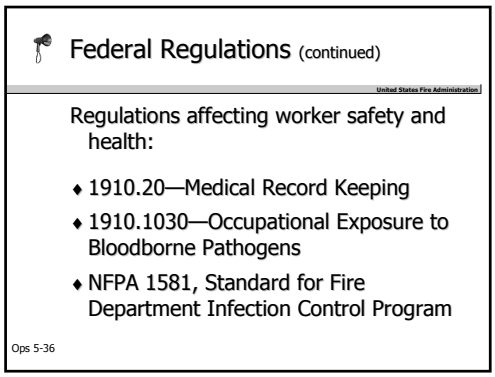
- Professional qualifications and competencies for firefighters, fire officers, driver/operators, and fire instructors; and

- Training safety standards relating to live fire training, training centers, and training reporting procedures (NFPA 1403, Standard on Live Fire Training Evolutions in Structures, was developed because of numerous firefighter fatalities during live fire training exercises).

Slide 5-35: Federal Regulations



Slide 5-36: Federal Regulations (continued)



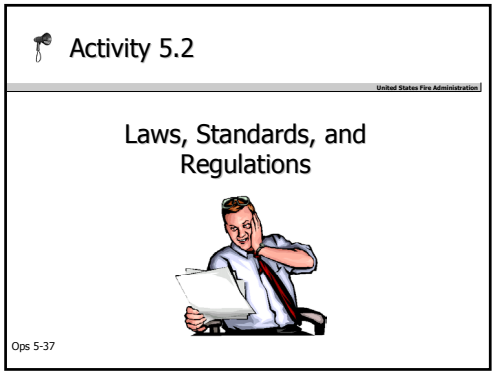
VIII. Regulations Issued by Federal Administrative Agencies (5 minutes)

- Occupational Safety and Health Administration (OSHA) is a branch of the Department of Labor.
  - OSHA was created in 1970 to provide occupational safety and health standards for employees.
  - Twenty-three states and two territories are governed by state-operated programs, which include firefighters.
  - The remaining states are governed by Federal OSHA requirements, which exclude municipal and volunteer firefighters.
- Regulations issued by Federal administrative agencies affect worker safety and health:
  - Requirements for maintaining an employee's medical records for 30 years past retirement date (29 CFR 1910.20, *Access to Employee Exposure and Medical Records*);
  - Requirements to control exposure to bloodborne

pathogens (29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens); and

* Requirements to provide an infection control liaison to manage a department's infection control program (NFPA 1581, *Standard for Fire Department Infection Control Program*).

Slide 5-37: Activity 5.2: Laws, Standards, and Regulations



IX. Activity 5.2: Laws, Standards, and Regulations (30 minutes)

Instructor Notes:

Refer students to Activity 5.2, Laws, Standards, and Regulations, in their student manuals.

Activity 5.2:
Laws, Standards, and Regulations

Time: 30 minutes

Purpose:

To review actual laws, standards, and regulations and to compare them to written standard operating guidelines for proper content.

Materials:

- Student Activity Worksheets (provided in the student manuals)
- Standards or regulations (provided in the student manuals)

Directions:

1. Divide the class into four small groups.

2. Assign each group a law, standard, or regulation with accompanying guideline.

3. Based on the information in the law, standard, or regulation, students must identify the incorrect information in the guideline.

4. Students must then identify the correct information that should be in the guideline.

Allow the students 15 minutes in their groups to discuss their findings and come to a consensus. Each group should select a spokesperson to share its findings with the class.

A list of suggested responses is given for each guideline in the Instructor Answer Key.

Summary:

The HSO must be able to interpret and apply laws, standards, and regulations to department functions and operations. Once written guidelines are in place, the HSO must ensure that they remain current and do not conflict with applicable laws, standards, and regulations. The NPCO should understand what the background is in how laws and standards affect department policy.

Activity 5.2:
Laws, Standards, and Regulations
Instructor Answer Key

Group 1: 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER)

1910.120(c)(5) states:

"Personal protective equipment (PPE) shall be provided and used during initial site entry in accordance with the following requirements:

Based on the results of the preliminary site evaluation, an ensemble of PPE shall be selected and used during initial site entry which will provide protection to a level of exposure below permissible exposure limits and published exposure levels for known or suspected hazardous substances and health hazards and which will provide protection against other known and suspected hazards identified during the preliminary site evaluation. If there is no permissible exposure limit or published exposure level, the employer may use other published studies and information as a guide to appropriate personal protective equipment.

If positive-pressure self-contained breathing apparatus is not used as part of the entry ensemble, and if respiratory protection is warranted by the potential hazards identified during the preliminary site evaluation, an escape self-contained breathing apparatus of at least five minutes' duration shall be carried by employees during initial site entry.

If the preliminary site evaluation does not produce sufficient information to identify the hazards or suspected hazards on the site an ensemble providing equivalent to Level B PPE shall be provided as minimum protection, and direct reading instruments shall be used a appropriate for identifying IDLH conditions. . . .

Once the hazards of the site have been identified, the appropriate PPE shall be selected and used in accordance with paragraph (g) of this section."

ZYX Fire Department, Standard Operating Guideline: Personal Protective Equipment (PPE) for Hazardous Materials Incidents

Structural firefighting clothing (helmet, FR hood, coat, pants, boots, and gloves) is adequate personal protective equipment during all initial site entry involving hazardous substances.

Self-contained Breathing Apparatus (SCBA) is an option based upon the recommendation from the officer in charge of the incident scene.

If the preliminary site evaluation does not produce sufficient information to identify the hazards or suspected hazards, structural firefighting clothing will be adequate protection for personnel.

Suggested response:

Structural firefighting clothing is inadequate PPE for most hazardous substances. Personnel must select the appropriate PPE to a level of exposure below permissible exposure levels for known or suspected hazardous substances and health hazards, and which will provide protection against other known and suspected hazards identified during the preliminary site evaluation.

Even if SCBA is not used or warranted, an escape SCBA of at least five minutes' duration shall be carried by employees during initial site entry.

If hazards or suspected hazards cannot be identified through the preliminary site evaluation, PPE equivalent to Level B PPE shall be provided as minimum protection.

Group 2: NFPA 1500, Standard on Fire Department Occupational Safety and Health Program

NFPA 1500, Chapter 6: Fire Apparatus, Equipment, and Drivers/Operators states:

"6.1 Fire Department Apparatus.

6.1.1 The fire department shall consider safety and health as primary concerns in the specification, design, construction, acquisition, operation, maintenance, inspection, and repair of all fire department apparatus.

6.1.1.1 The fire department shall specify restraint devices or fire apparatus, including those restraint devices for emergency medical service (EMS) members operating in the patient compartment of the ambulance.

6.1.2 All new fire apparatus shall be specified and ordered to meet the applicable requirements of NFPA 1901, *Standard for Automotive Fire Apparatus*.

6.1.3 All new wildland fire apparatus shall be specified and ordered to meet the requirements of NFPA 1906, *Standard for Wildland Fire Apparatus*.

6.1.4 All fire marine fire-fighting vessels shall be specified and ordered to meet the requirements of NFPA 1925, *Standard on Marine Fire-Fighting Vessels*.

6.1.5 Where tools, equipment, or respiratory protection are carried within enclosed seating areas of fire apparatus or patient compartment of an ambulance, such items shall be secured by either a positive mechanical means of holding the item in its stowed position or in a compartment with a positive latching door.

6.1.6 When fire apparatus is refurbished, it shall be specified and ordered to meet the applicable requirements of NFPA 1912, *Standard for Fire Apparatus Refurbishing*.

6.1.7 Fire departments that operate their own fixed wing or rotary aircraft for fire department operations shall provide four-point restraints for all pilots and passengers, not including any EMS patients.

6.1.8 Members performing hoist rescue in the passenger area of the aircraft shall be secured by a safety harness or seat belt system."

MEL Fire Department, Standard Operating Guideline: Tools and Equipment Carried on Apparatus

All tools and equipment such as:

- Halligan tool,
- Axes,
- SCBA,
- Fire extinguishers, and
- Pike poles;

that are carried in the riding compartment of fire apparatus do not have to be secured or mounted, if the firefighter holds the tools or equipment, puts the tools/equipment under the seat, or puts his or her foot on the tools or equipment to hold them in place while the apparatus is moving.

Suggested response:

NFPA 1500, Paragraph 6.1.5 states, "Where tools, equipment, or respiratory protection are carried within enclosed seating areas of fire apparatus or patient compartment of an ambulance, such items shall be secured by either a positive mechanical means of holding the item in its stowed position or in a compartment with a positive latching door."

Group 3: 29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens

1910.1030(d)(3) states:

"**Provision**. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered 'appropriate' only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

Use. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgment, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

Accessibility. The employer shall ensure that appropriate personal protective equipment in the appropriate size is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

Cleaning, Laundering, and Disposal. The employer shall clean, launder, and dispose of personal protective equipment required be paragraphs (d) and (e) of this standard, at no cost to the employee.

Repair and Replacement. The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

If a garment(s) is penetrated by blood or other potentially infectious materials, the garment(s) shall be removed immediately or as soon as feasible.

All personal protective equipment shall be removed prior to leaving the work area.

When personal protective equipment is removed, it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

Gloves. Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures except as specified in paragraph (d)(3)(ix)(D); and when handling or touching contaminated items or surfaces.

Disposable (single use) gloves, such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

Disposable (single use) gloves shall not be washed or decontaminated for re-use.

Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised."

KMR Fire Department, Standard Operating Guideline: Infection Control Personal Protective Equipment

Disposable medical gloves shall be put on while responding to an emergency medical incident.

Disposable medical gloves can be removed and put back in your coat or pants pocket after an incident, if there is no patient contact during the incident.

Disposable medical gloves shall be removed once you return to quarters or the medical facility.

Suggested response:

Disposable medical gloves should be put on immediately before patient contact. This reduces the chance of contaminating the gloves.

Disposable medical gloves must be disposed of once the gloves have been put on, regardless of whether there has been any patient contact. They are single-use gloves.

Disposable medical gloves are to be removed prior to leaving the work area.

Group 4: NFPA 1971, Standard on Protective Clothing for Structural Fire Fighting

NFPA 1971, Chapter 3: Labeling and Information, states:

"**3-1 Product Label Requirements**.

3-1.1 Each element of the protective ensemble shall have at least one product label permanently and conspicuously located inside each element when the element is properly assembled with all layers and components in place.

3-1.2 Multiple label pieces shall be permitted in order to carry all statements and information required to be on the product label. However, all label pieces comprising the product label shall be located adjacent to each other.

3-1.3 The certification organization's label, symbol, or identifying mark shall be permanently attached to the product label or shall be part of the product label. All letters shall be at least 2.5mm (3/32 in.) high. The label, symbol, or identifying mark shall be at least 6mm (1/4 in.) in height and shall be placed in a conspicuous location.

3-1.4 All worded portions of the required product label shall be printed in at least English.

3-1.5 Symbols and other pictorial graphic representations shall be permitted to be used to supplement worded statements on the product label(s).

3-1.6 The following compliance statement shall be printed legibly on the product label. The appropriate term for the element type—garment, helmet, glove, footwear, hood—shall be inserted in the compliance statement text where indicated. All letters shall be at least 2.5mm (3/32 in.) in height.

"THIS (insert appropriate element term here) **MEETS THE** (insert appropriate element term here) **REQUIREMENST OF NFPA 1971, STANDARD ON PROTECTIVE ENSEMBLE FOR STRUCTURAL FIRE FIGHTING, 2000 EDITION.**

DO NOT REMOVE THIS LABEL."

3-1.7 The following information shall also be printed legibly on the product label with all letters at least 1.5mm (1/16 in.) in height:

(1) Manufacturer's name, identification, or designation
(2) Manufacturer's address
(3) Country of manufacture
(4) Manufacturer's element identification number, lot number, or serial number
(5) Month and year of manufacture
(6) Model name, number, or design
(7) Size or size range
(8) Principle material(s) of construction
(9) Cleaning precautions.

DSB Fire Department, Standard Operating Guideline: Structural Firefighting Clothing

The garment label on structural firefighting clothing can be removed once this clothing has been issued to department personnel. The information on the garment labeling is for the manufacturer, not fire department personnel.

Suggested response:

The outer shell and each separable layer of each protective garment shall have a garment label permanently and conspicuously attached to each layer. This information is very important for personnel to read and understand. At no time should this garment label be removed.

Activity 5.2:
Laws, Standards, and Regulations
Student Activity Worksheet

Time: 30 minutes

Purpose:

To review actual laws, standards, and regulations and to compare them to written standard operating guidelines for proper content.

Directions:

1. Your instructor will divide the class into four small groups.
2. Your group will be assigned a law, standard, or regulation with accompanying guideline.
3. Based on the information in the law, standard, or regulation, you must identify the incorrect information in the guideline.
4. You will then identify the correct information that must be in the guideline.
5. Select a spokesperson to share your group's findings with the class.

You will have 15 minutes in your group to discuss your findings and come to a consensus.

Group 1: 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER)

ZYX Fire Department, Standard Operating Guideline: Personal Protective Equipment (PPE) for Hazardous Materials Incidents

Structural firefighting clothing (helmet, FR hood, coat, pants, boots, and gloves) is adequate personal protection equipment during all initial site entry involving hazardous substances.

Self-contained Breathing Apparatus (SCBA) is an option based upon the recommendation from the officer in charge of the incident scene.

If the preliminary site evaluation does not produce sufficient information to identify the hazards or suspected hazards, structural firefighting clothing will be adequate protection for personnel.

Incorrect information:

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Correction:

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Notes:

Group 2: NFPA 1500, Standard on Fire Department Occupational Safety and Health Program

MEL Fire Department, Standard Operating Guideline: Tools and Equipment Carried on Apparatus

All tools and equipment such as:

- Halligan tool,
- Axes,
- SCBA,
- Fire extinguishers, and
- Pike poles;

that are carried in the riding compartment of fire apparatus do not have to be secured or mounted, if the firefighter holds the tools or equipment, puts the tools/equipment under the seat, or puts his or her foot on the tools or equipment to hold them in place while the apparatus is moving.

Incorrect information:

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Correction:

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Notes:

Group 3: 29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens

KMR Fire Department, Standard Operating Guideline: Infection Control Personal Protective Equipment

Disposable medical gloves shall be put on while responding to an emergency medical incident.

Disposable medical gloves can be removed and put back in your coat or pants pocket after an incident if there is no patient contact during the incident.

Disposable medical gloves shall be removed once you return to quarters or the medical facility.

Incorrect information:

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Correction:

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Notes:

Group 4: NFPA 1971, Standard on Protective Clothing for Structural Fire Fighting

DSB Fire Department, Standard Operating Guideline: Structural Firefighting Clothing

The garment label on structural firefighting clothing can be removed once this clothing has been issued to department personnel. The information on the garment labeling is for the manufacturer, not fire department personnel.

Incorrect information:

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Correction:

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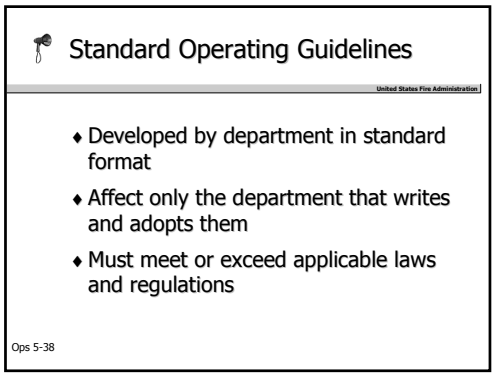
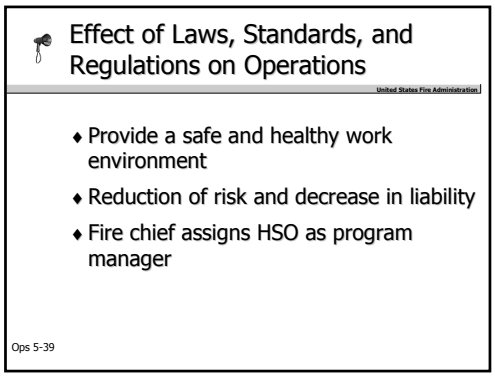
Slide 5-38: Standard Operating Guidelines



Slide 5-39: Effect of Laws, Standards, and Regulations on Operations



X. Standard Operating Guidelines (SOGs) (5 minutes)

- SOGs are guidelines developed by a fire or EMS department in a standard format.
- These guidelines affect only the operation of the department that writes and adopts them.
- The requirements of these guidelines must meet or exceed applicable laws and regulations.

XI. Influence and Effect of Laws, Standards, and Regulations on Department Operations (5 minutes)

Instructor Notes:

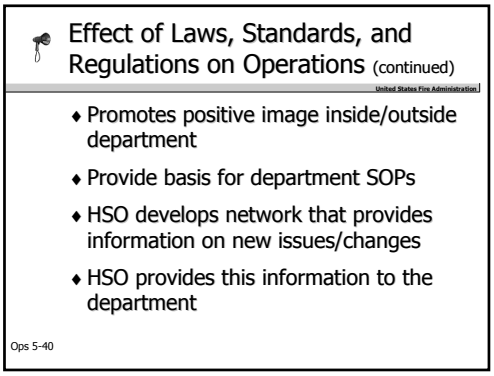
The effect of complying with NFPA 1500 is indicated by the reduction in firefighter fatalities, reduction in the number and severity of accidents and injuries to members, and improved health maintenance and well-being of firefighters. These facts highlight the importance of increased compliance. Compliance is a proactive approach that reduces risks for personnel and reduces the department's liability.

Ask the question:

How have standards such as NFPA 1500 improved firefighter safety and health throughout the country? Within their departments?

Keep this discussion positive. Do not allow students to discuss the negatives or problems they have had with NFPA 1500. Stress the importance of using the standard as a method of improving safety and health in the fire and EMS service.

Slide 5-40: Effect of Laws, Standards, and Regulations on Operations (continued)



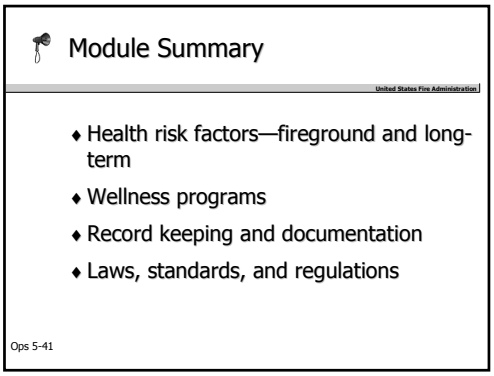
- The primary responsibility of an employer is to provide a safe and healthy work environment.
- The tangible benefits are the reduction of risks to the employee and the decrease in liability for the department.
- The fire chief has the ultimate responsibility for safety and health in the department because he or she designates an HSO to be the program manager of this process.
- Complying with laws, standards, and regulations develops and promotes a positive image both inside and outside the department.
    - Ensuring the safety and health of personnel demonstrates that the organization cares about them.
    - Personnel must be provided with the essential requirements to function in their assigned positions.

- A department develops policies based on laws, standards, and regulations to provide the necessary information to establish guidelines.

- The HSO must develop a network that provides information on laws, standards, and regulations.

- As they are revised or developed, the HSO can include this information in the department's guidelines.

Slide 5-41: Module Summary



XII. Module Summary (5 minutes)

The work of the HSO has a major effect on fire department emergency operations. His or her duties are primarily conducted in non-emergency situations.

In this module, we discussed:

- Health risk factors that affect firefighters both long-term and on the fireground and programs that departments have in place to address these risks;

- Firefighter wellness programs, including EAP and physical fitness programs;

- Record keeping and documentation; and

- Laws, standards, and regulations

and how they affect safety on and off the fireground.

MODULE 6

MODULE 6

INCIDENT SAFETY OFFICER AND RISK MANAGEMENT

MODULE 6:

INCIDENT SAFETY OFFICER (ISO) AND RISK MANAGEMENT

Terminal Objective

Upon completing the module, students will be able to demonstrate the duties of the ISO.

Enabling Objectives

Students will:

- Identify the duties of the ISO;
- Identify safe and unsafe practices;
- Determine pre-emergency risk management measures;
- Determine immediate risks to emergency responders; and
- Forecast potential risks to emergency responders.

Requirements

Facility

Classroom with tables

Materials

- COTC Operations Instructor Guide
- COTC Operations Student Manual
- PowerPoint® slides

Equipment

- Computer
- LCD projector
- One portable screen or classroom equipped with screen
- Chalkboard/wipeboard
- Easel pads with markers

References

Student Manual
www.nwcg.gov
firescope.oes.ca.gov

Instructor Guidelines

This course is intended for a third level of management, the battalion chief or newly promoted chief officer, in a typical emergency services organization. The newly promoted chief officer will think in terms of strategy, as opposed to tactics, on an emergency scene. The officer will need a good, basic understanding of tactics as they play into strategic decisions, but will focus on strategic decisions. To this end, it is recommended that students complete Modules 1 through 3 (Application of the Incident Command System [ICS], Incident Command Decision-Making, and Incident Action Plan [IAP]/Planning) before enrolling in any of the simulation exercise modules.

The simulations in this course are designed to provide opportunities for the newly promoted chief officers to develop their skills as incident commanders at emergencies that require more resources than "normal" first-alarm, initial attacks in their communities. This simulation methodology allows the students to transition from the tactical perspective of a company officer to a strategic perspective of a chief officer who makes command level decisions based on strategic objectives required of an incident commander at a major target hazard incident.

The officers attending this course should be familiar with the target hazards found in their communities. Some of these hazards are significant and are known as target hazards. Target hazards are defined as incidents that:

- Overload fire equipment and personnel resources;

- Involve atypical hazards;
- Produce a significant negative impact on the community;
- Require technical advice for effective strategy development; and
- May initiate multi-agency involvement.

The most serious of these target hazards, for example, a major commercial or high-rise fire, can quickly stretch the capacity of the fire department's resources.

The students should rotate through the various command and general staff positions to see the responsibilities of the incident commander as individual components. The instructor would normally divide the class into groups of six to eight students, assigning each student a position on the Incident Management Team (IMT). An alternate method is to assign more experienced students to the IMT positions and assign other students in deputy or assistant roles, which allows them to shadow their more experienced peers. As the course develops, the instructor may begin to assign additional responsibilities to the command and general staff, including the development of the Incident Action Plan (IAP). The ICS forms needed to complete the IAP are included in the appendix of each simulation exercise module.

The instructor should carefully read the instructor guide and the student manual and become familiar with the content before presenting the course.

Methodology

This module uses lecture, discussion, and activities.

Outline

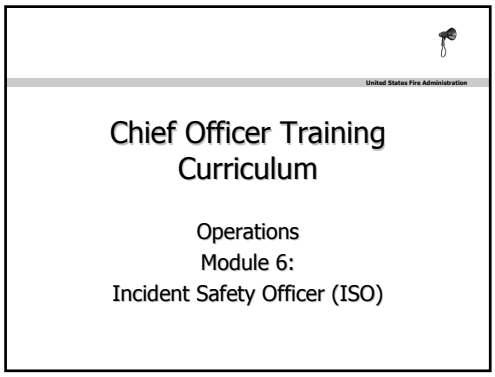
I. Objectives and Overview ..... 5 minutes
II. Role of the Incident Safety Officer (ISO) ..... 5 minutes
III. Basic Duties and Responsibilities of the ISO ..... 25 minutes
IV. Response Criteria for the ISO ..... 10 minutes
V. Characteristics of an Effective ISO ..... 10 minutes
VI. The Relationship Between the Health and Safety Officer (HSO) and the ISO ..... 5 minutes
VII. Activity 6.1: Problem Identification ..... 20 minutes
VIII. Incident Safety Officer's Function in an ICS Organization ..... 5 minutes
IX. Activity 6.2: The ISO as Part of an ICS Organization ..... 30 minutes
X. Pre-Emergency Risk Management ..... 10 minutes
XI. Activity 6.3: Pre-Emergency Risk Management ..... 15 minutes
XII. The ISO's Role in Emergency Risk Management ..... 10 minutes
XIII. Activity 6.4: Immediate Risk Identification ..... 15 minutes
XIV. Forecasting ..... 25 minutes
XV. Rapid Intervention Crew (RIC) ..... 10 minutes
XVI. Activity 6.5: Forecasting ..... 20 minutes
XVII. Acceptable Risks ..... 5 minutes
XVIII. Unacceptable Risks ..... 10 minutes
XIX. Module Summary ..... 5 minutes

240 minutes

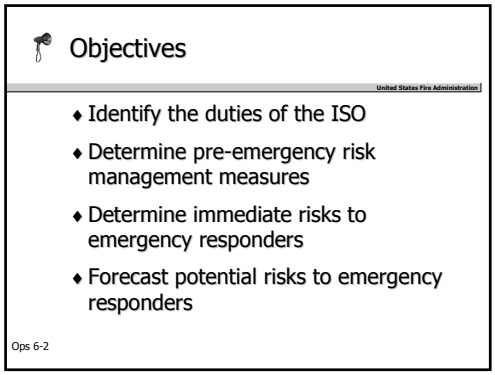
NFPA 1021 Standards Cross-Reference Matrix

3-7, 4-7

Slide 6-1: Module 6, Incident Safety Officer (ISO)



Slide 6-2: Objectives



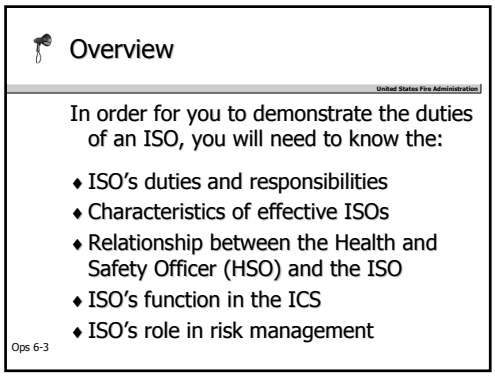
I. Objectives and Overview (5 minutes)

A. Objectives

Students will be asked to:

- Identify the duties of the Incident Safety Officer (ISO);
- Determine pre-emergency risk management measures;
- Determine immediate risks to emergency responders; and
- Forecast potential risks to emergency responders.

Slide 6-3: Overview



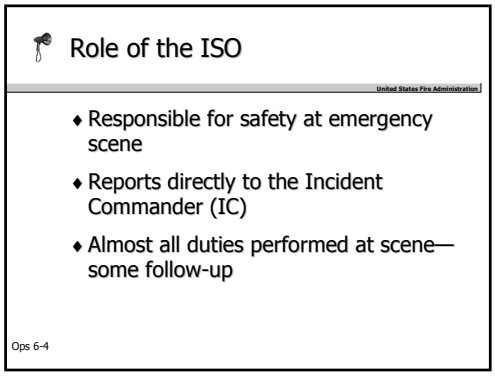
B. Overview

In order for you to demonstrate the duties of the ISO, you will need to know:

- The ISO's duties and responsibilities;
- Characteristics of an effective ISO;
- The relationship between the Health and Safety Officer (HSO) and the ISO;
- The ISO's function in the Incident Command System (ICS); and
- The ISO's role in risk management.
- By the nature of the duties they perform, emergency responders are at risk of death, injury, or illness. Incident safety should be a primary concern of all those who respond to the aid of the community or jurisdiction they serve.
- One of the ways the ICS provides for responder safety is by giving the Incident Commander (IC) the ability to appoint and use an ISO.
- This position is a member of the ICS organization's command

staff. While the IC has overall responsibility for the safety of the responders, the ISO has the direct responsibility to focus on the safety aspects of the incident.

Slide 6-4: Role of the ISO



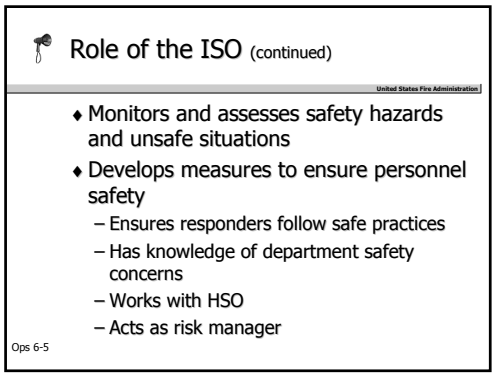
II. Role of the Incident Safety Officer (5 minutes)

- The ISO is a member of the emergency response organization who is responsible for monitoring the safety of responders at the scene of an emergency.

- The ISO reports directly to the IC on all matters related to responder safety. The IC must select an ISO carefully to ensure that the individual chosen has knowledge of the hazards that will be faced at an incident scene.

- The duties of the ISO are performed almost always at the scene of an emergency, although some follow-up work may be required after the emergency.

Slide 6-5: Role of the ISO (continued)



- The ISO monitors and assesses safety hazards or unsafe situations and develops measures for ensuring personnel safety. The ISO:
  - Ensures that responders follow safe practices at incidents and during training exercises;
  - Has a working knowledge of safety concerns for the department or agency in typical incidents;
  - Works with departmental HSO; and
  - Acts as a risk manager.
- The National Fire Protection Association (NFPA) 1521, *Standard for Fire Department Safety Officer*:
  - Is a nationally developed consensus standard;
  - Outlines the role and duties of the ISO; and
  - Gives the ISO authority to alter, suspend, or terminate unsafe or hazardous activities.
  - When no imminent hazards are identified, the ISO:

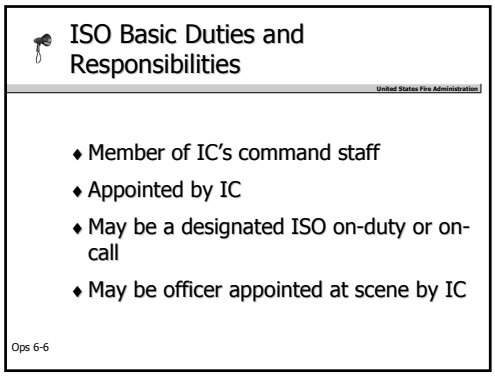
– Develops actions to correct or address the situation and

– Communicates hazards to the IC or appropriate supervisor.

* In most departments, there will be no on-duty ISO. The IC will appoint an ISO at the emergency scene.

- The IC assesses the need for an ISO. In departments where small structural fires occur frequently, there may be less need for an ISO. In smaller departments where structural fires are more infrequent, an ISO may be assigned at all fires.

Slide 6-6: ISO Basic Duties and Responsibilities



III. Basic Duties and Responsibilities of the ISO (25 minutes)

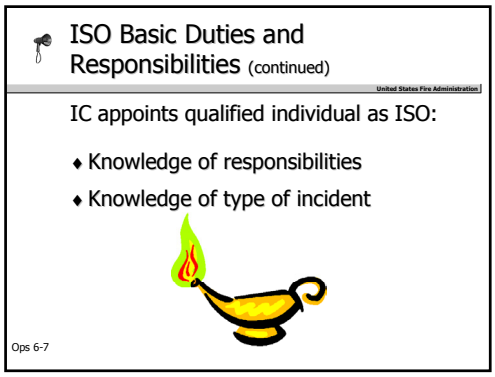
A. Member of IC's command staff

- The ISO is appointed by the IC.

- In some departments, there may be a designated on-duty or on-call ISO.

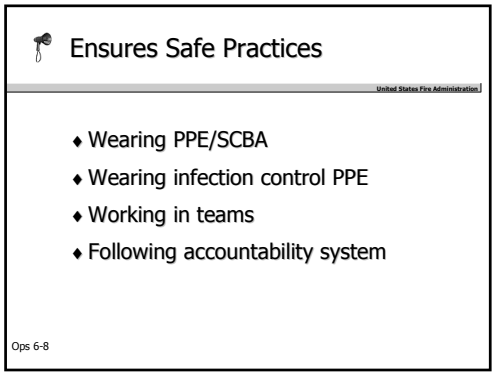
- The ISO may be an officer appointed at the scene by the IC.

Slide 6-7: ISO Basic Duties and Responsibilities (continued)



- The IC is responsible for appointing a qualified individual to fulfill the role of ISO.
  - The ISO position is not just a box to be filled in on an ICS organizational chart.
  - The IC must be sure the individual appointed has the knowledge required to fill the role of the ISO. He or she must have knowledge of the type of incident involved.
  - The ISO must understand the IC's Incident Action Plan (IAP). The plan may be written, or the information may be gathered verbally.

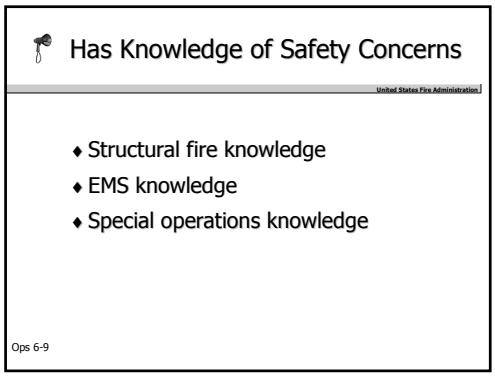
Slide 6-8: Ensures Safe Practices



B. Safe practices

- The ISO ensures that responders follow safe practices at incidents and during training exercises. They must:
  - Wear personal protective gear;
  - Wear full Personal Protective Equipment (PPE);
  - Wear Self-Contained Breathing Apparatus (SCBA);
  - Wear protection from airborne and bloodborne pathogens;

Slide 6-9: Has Knowledge of Safety Concerns



- Work in teams in hazardous areas;
- Follow departmental and recognized safety practices; and
- Follow the department's accountability system.

C. Knowledge of safety concerns

The ISO must have a working knowledge of safety concerns for the department or agency in typical incidents.

- Structural fire knowledge:
  - Building construction,
  - Fire behavior,
  - Flame spread,
  - Length of time personnel can operate with SCBA, and
  - Time limits responders can work before needing rehab, whether SCBAs are used or not;
- EMS knowledge:
  - Infection control procedures,
  - Scene security measures,

* Use of PPE, and

* Critical Incident Stress Management; and

- Special operations knowledge:

  * Safety lines staffed at a water rescue,

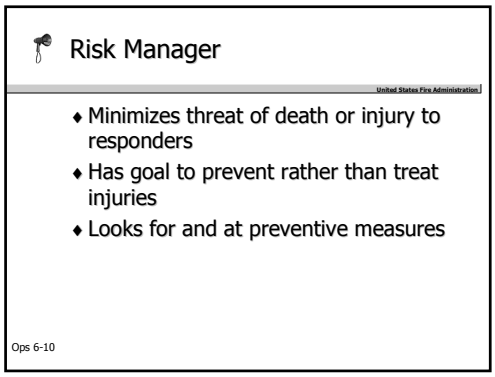
  * Proper shoring at a trench rescue,

  * Approved lifelines at a high-angle rescue,

  * Product identification at haz mat incident, and

  * Use of technical experts.

Slide 6-10: Risk Manager



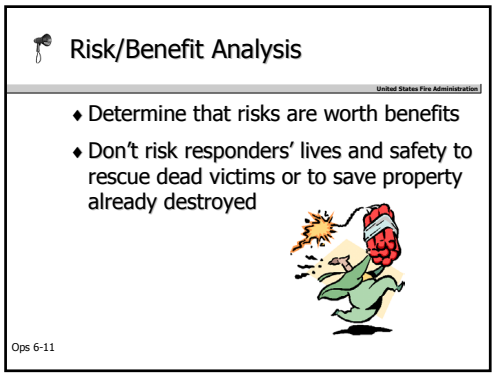
D. Acting as a risk manager

- The ISO's role is to help minimize threat of death or injury to responders.

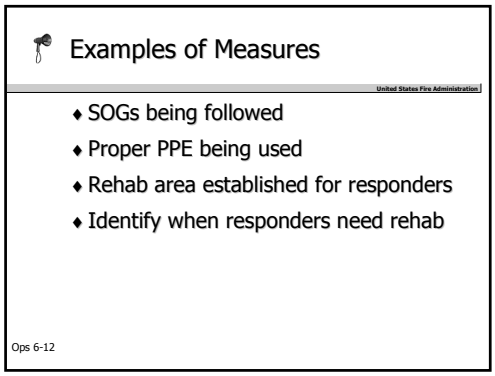
  * The goal is to prevent rather than treat injuries.

  * The ISO focuses on preventive measures.

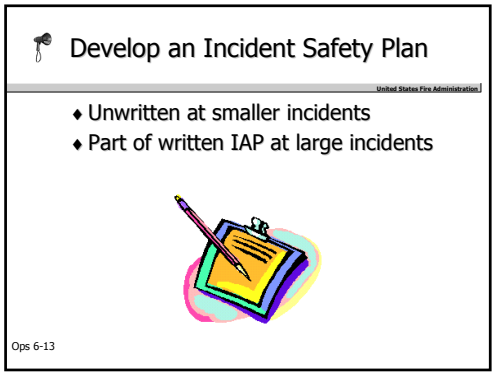
Slide 6-11: Risk/Benefit Analysis



Slide 6-12: Examples of Measures

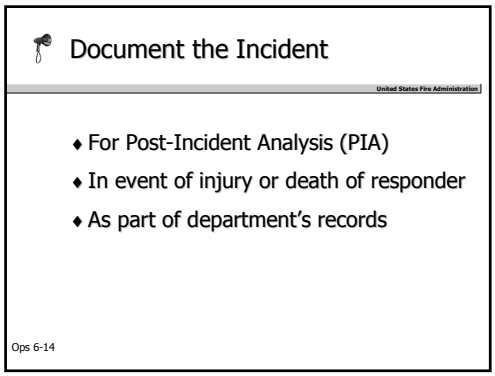


Slide 6-13: Develop a Safety Plan



- The ISO must perform an effective risk/benefit analysis. He or she must:
  - Determine that the risks being taken by the responders are worth the benefits they may derive and
  - Not risk responders' lives or safety to rescue dead victims or to save property already destroyed.
  - Examples of measures to look for:
    - SOGs being followed,
    - Proper PPE being used,
    - Rehab area established for responders, and
    - When responders need rehab.
- The ISO must develop an incident safety plan:
  - Unwritten at small incidents and
  - Part of written IAP at large incidents.

Slide 6-14: Document the Incident



- The ISO must document the incident:
  - For Post-Incident Analysis (PIA),

    (The PIA should concentrate on positive reinforcement and learning from mistakes. It should not be a punitive exercise.)
  - In the event of injury or death of a responder, and
  - As part of department's records.

IV. Response Criteria for the ISO (10 minutes)

Instructor Notes:

Ask the questions:

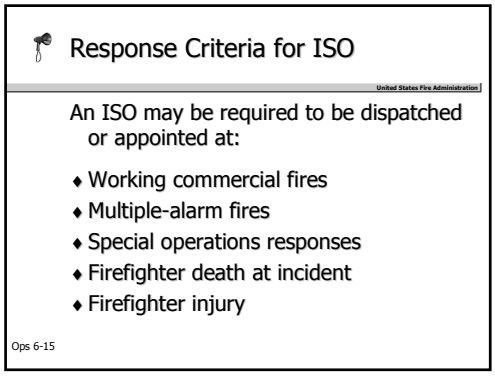
What emergency incidents would require the response of the ISO? Do you feel an appointed ISO is needed on every incident? If not, what other individual would monitor safety?

Examples of when an ISO is required are listed below. The intent is that an appointed ISO is not needed on each incident. The primary safety function is fulfilled by the IC when an ISO is not formally appointed.

Remind students that not all departments

have on-duty or on-call personnel on a 24-hour basis capable of responding in the role of an ISO. The IC may be required to select an officer qualified to fill the position from those who have responded.

Slide 6-15: Response Criteria for ISO

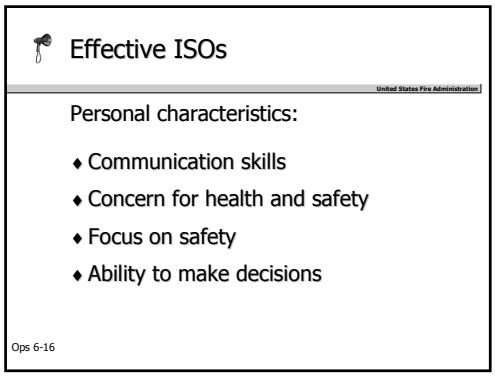


- Written department policy may dictate the response or appointment of an ISO.
- An ISO may be required to be dispatched or appointed at:
  - A working commercial fire;
  - Multiple-alarm fires;
  - Special operations responses:
    - Haz mat,
    - Technical rescue, or
    - Multicasualty incidents;
  - A firefighter's death at an incident (If one has not been appointed already, the appointment of an ISO when there is a firefighter death at an incident is very strongly encouraged.); or
  - Firefighter injury:
    - Serious injury requiring transport or

– Multiple firefighter injuries.

- Written policies or SOGs will help ensure proper response or appointment of an ISO.
  - The policy or SOG should be in place so the ISO knows when to respond.
  - SOGs will help remind the IC that an ISO should be appointed.

Slide 6-16: Effective ISOs



V. Characteristics of an Effective ISO (10 minutes)

A. Personal characteristics

Personal characteristics of an effective ISO include:

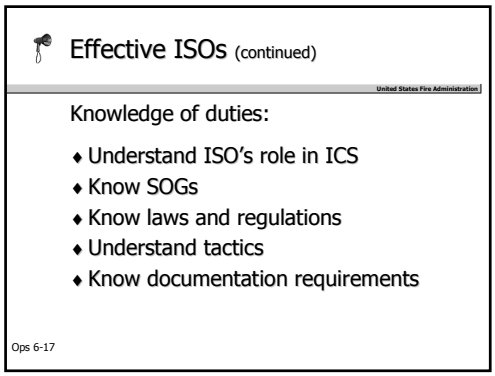
- Having effective communication skills:
  - Being an active listener;
  - Conveying messages in a clear, concise manner;
  - Delivering messages in a positive manner; and
  - Persuading others of the need to follow safety procedures;
- Having a concern for the health and safety of responders

operating at the incident, including:

* Protecting responder safety,
* Enforcing safe practices, and
* Making safety a higher priority than the need to be an enforcer;

- Having the ability to focus on safety issues:
  * Not getting directly involved in tactical operations unless there is an immediate threat to safety and
  * Grasping safety issues present at an incident; and
- Having the ability to make decisions, including:
  * Making quick decisions under stress and
  * Deciding immediately to take corrective action to protect responder safety.

Slide 6-17: Effective ISOs (continued)



B. Knowledge of duties

An effective ISO must know his or her duties. He or she must:

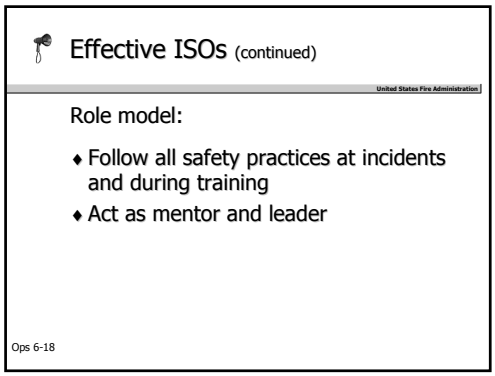
- Understand the role of the ISO within an ICS organization;
- Know departmental SOGs;
- Know applicable laws, standards, and regulations; and
- Understand tactical operations.

C. Knowledge of documentation requirements

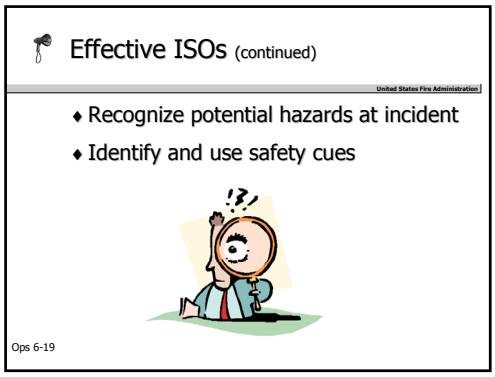
An effective ISO must know documentation requirements:

- In the event of death or injury to responders,
- To meet legal requirements,
- For the PIA, and
- For departmental records.

Slide 6-18: Effective ISOs (continued)



Slide 6-19: Effective ISOs (continued)



D. Act as role model

An effective ISO must act as a role model, mentor, and leader in stressing and demonstrating the importance of safety. He or she must:

- Follow safety practices at an incident and during training because:
  - Safety is an important part of training and
  - How one trains will affect how one performs at the incident.

E. Recognize safety cues

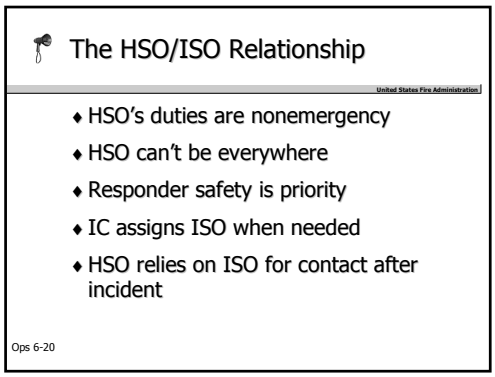
An effective ISO has the ability to recognize potential hazards at an incident and must:

- Know the indicators that can be used to identify existing or potential hazards and
- Recognize these "safety cues" that allow him or her to take appropriate action.

  A sagging roof, an unstable overturned vehicle, and bowed cribbing at a ditch cave-in are the types of indicators the ISO can recognize as signs of potential or immediate danger to responders and victims.

- The ability to identify and use safety cues comes from:
  - Previous experience and training,
  - Familiarity with department or agency day-to-day operations,
  - Knowledge of special operations, and
  - Level of training and experience of responders.

Slide 6-20: The HSO/ISO Relationship



VI. The Relationship of the Health and Safety Officer and the ISO (5 minutes)

- Generally, the HSO's duties are pre-emergency or nonemergency in nature, while the ISO's duties are emergency.
- The HSO cannot be at the scene of every emergency incident to act as the ISO.
- Responder safety must be addressed at every emergency incident.
  - At small incidents, firefighters and company officers watch out for the safety of the members of their crews.
  - At large incidents, the IC is

responsible for the safety of all responders and others at the scene. For assistance with this responsibility, the IC often appoints an ISO.

- When the HSO is not available to act as the ISO for an incident, the IC will assign another member of the organization to act as the ISO.

  * At the emergency, the ISO assures that responder safety is addressed, enforces safety procedures, and provides the IC with appropriate information on the safety of responders.

  * There may be more than one ISO at the scene of a complex or large emergency incident.

- The IC relies on the ISO to look out for responder safety.

- During an incident, the HSO relies on the ISO to monitor and enforce safety procedures.

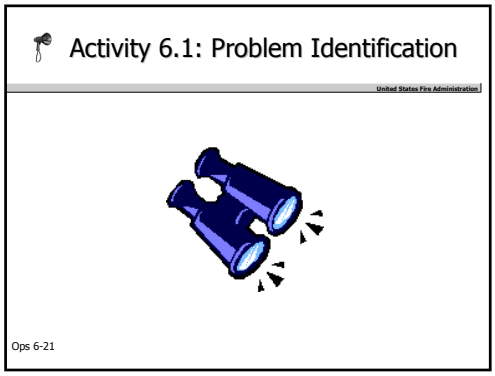
- After the incident, the HSO relies on the ISO:

  * To provide advice on problems related to responder safety that arise during emergency activities and

  * To point out potential safety problems that need to be

addressed by a new procedure or by an improvement in protective equipment or procedures.

Slide 6-21: Activity 6.1, Problem Identification



VII. Activity 6.1: Problem Identification (20 minutes)

Instructor Notes:

Refer students to activity 6.1, Problem Identification, in their student manuals.

Activity 6.1:
Problem Identification

Time: 20 minutes

Purpose:

To recognize safe and unsafe practices at a variety of emergency incidents.

Materials:

- Student Activity Worksheets (provided in the student manuals)
- Visuals
- Easel pad
- Markers

Directions:

You will show the students slides of actual emergency incidents. Each action slide will be followed by a blank slide.

1. Show the first slide for approximately 15 seconds; then go to the blank slide. Allow the students a short time to note their observations in their student manuals. After a few moments, show the second slide, and so on.

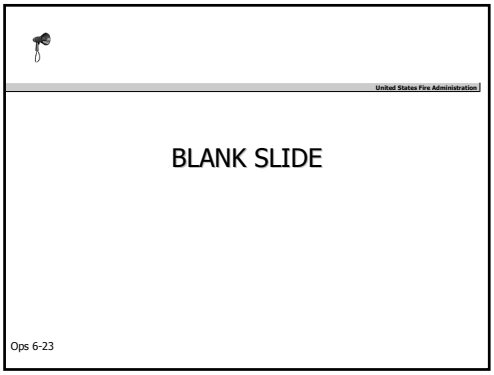
2. After you have shown all five slides, return to the first slide and ask the class what noteworthy practices they observed, both safe and unsafe, on each slide. If students seem reluctant to respond, pick one to give his or her answer and allow others to join in. List their responses on an easel pad.

3. After students have given their responses, ask them if they would take immediate corrective action based on what they observed or wait until after the incident to mention what corrective measures should be followed in the future. If they indicate they would shut the incident down or halt operations until corrective action is taken, ask what the "safety cues" were that led them to make their decisions. Ask how they would go about instituting their decisions.

   The students may take this opportunity to turn the discussion into a series of war stories. You should keep the discussion moving and relate it to the slides shown.

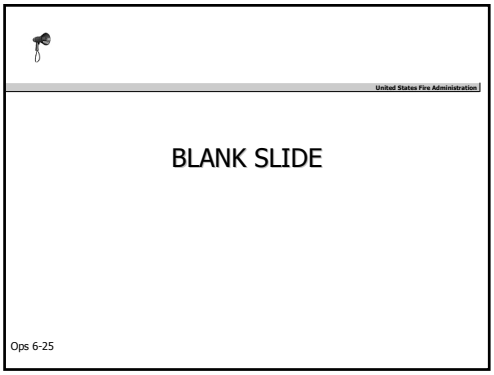
Slide 1 (6-22): Vehicle fire

Slide 6-23: Blank Slide



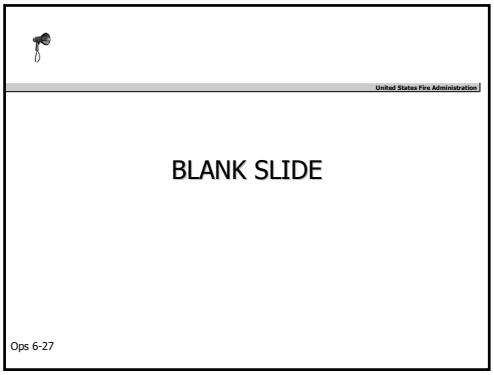
Slide 2 (6-24): EMS incident—vehicle accident

Slide 6-25: Blank Slide



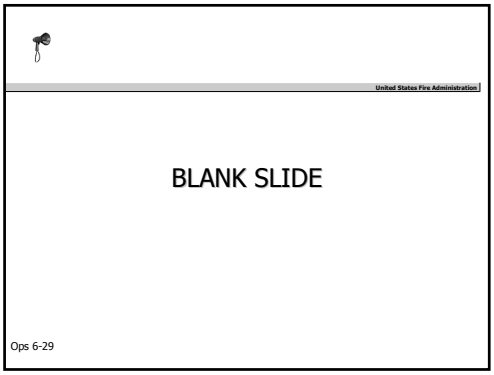
Slide 3 (6-26): Dumpster fire

Slide 6-27: Blank Slide



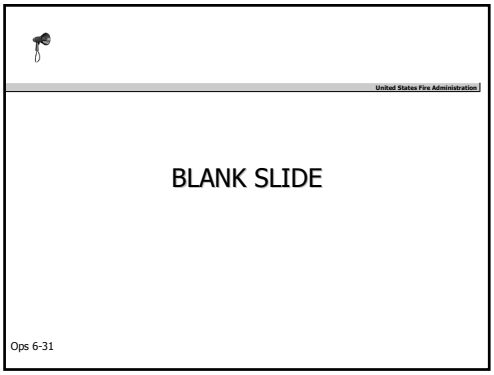
Slide 4 (6-28): Hazardous materials incident

Slide 6-29: Blank Slide



Slide 5 (6-30): Structure fire

Slide 6-31: Blank Slide



Activity 6.1:
Problem Identification
Instructor Answer Key

Slide 1: Vehicle Fire—Suggested responses

Safe practices:

- Use of full PPE, including SCBA.
- Proper size attack line.
- Apparatus uphill and upwind.
- Appear to be using foam.
- FD van blocks traffic.

Unsafe practices:

- May be a need for a second line.
- Apparatus placed too close.
- Should approach from the side.
- No traffic control.
- Car wheels not chocked.

Slide 2: EMS Incident—Vehicle Accident—Suggested responses

Safe practices:

- Gloves on all responders.
- Disposable suction unit.

Unsafe practices:

- No glasses on responder handling suction.
- Too many people too close.
- No respiratory protection masks.
- Is the white hat the IC?

Slide 3: Dumpster Fire—Suggested responses

Safe practices:

- Proper size line.
- Two lines for protection.
- Protective trousers being worn.

Unsafe practices:

- No SCBA or PPE.
- Too few people on the lines.
- Hose line in dumpster.
- Haz mat involvement?
- What is that pipe?
- Standing under damaged rollup door.
- Hazardous footing for nozzle personnel.

Slide 4: Hazardous Materials Incident—Suggested responses

Safe practices:

- Foam blanket in place.
- Enough staffing.

Unsafe practices:

- No SCBA.
- Standing in contamination.
- Breaking foam blanket.
- ¾ boots.
- No hot zone established.
- What are they doing/why are they there?
- Flash fire concern.

Slide 5: Structure Fire—Suggested responses

Safe practices:

- Proper PPE.

Unsafe practices:

- Improper laddering in end window.
- No command or control.
- Two people on aerial ladder tip.
- Concern about ladder angle and extension.

Summary:

Because an ISO's primary concern must be the safety of responders, he or she needs the knowledge and ability to recognize which practices are safe. The ISO needs to know when to step in and correct or stop unsafe practices.

Activity 6.1:
Problem Identification
Student Activity Worksheet

Time: 20 minutes

Purpose:

To recognize safe and unsafe practices at a variety of emergency incidents.

Directions:

1. Your instructor will show you a series of slides. After briefly viewing the slides, you are to identify and note in the spaces provided below both the safe and the unsafe practices you observe on each slide.

2. Your instructor may call on you to discuss your observations with the class.

Slide 1: Vehicle fire

Safe practices:

_____

_____

_____

Unsafe practices:

_____

_____

_____

Slide 2: EMS incident—vehicle accident

Safe practices:

_____

_____

_____

Unsafe practices:

_____

_____

_____

Slide 3: Dumpster fire

Safe practices:

_____

_____

_____

Unsafe practices:

_____

_____

_____

Slide 4: Hazardous materials incident

Safe practices:

_____

_____

_____

Unsafe practices:

_____

_____

_____

Slide 5: Structure fire

Safe practices:

_____

_____

_____

Unsafe practices:

_____

_____

_____

VIII. The ISO's Function in an ICS Organization (5 minutes)

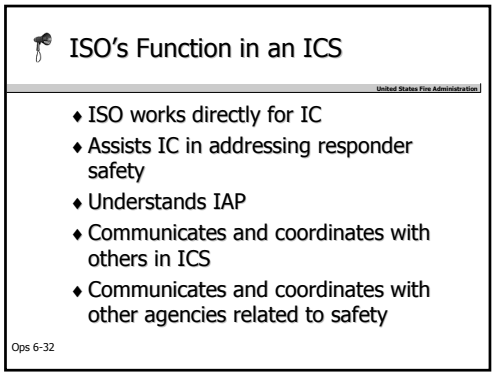
A. Incident scene accountability

Officers holding positions within the command organization are responsible for the welfare and accurate accountability of all assigned firefighters.

B. Member of command staff

- The ISO is a member of the ICS command staff. He or she:
  - Works directly for the IC;
  - Assists the IC in addressing safety of responders, which allows the ISO to focus on incident safety (the IC still has overall responsibility for incident safety);
  - Understands the IAP, allowing him or her to monitor tactical operations effectively;
  - Communicates and coordinates with others in the ICS organization (for example, division/group supervisors, branch directors, the operations chief, and rehab managers);
- The ISO communicates and coordinates with other agencies

Slide 6-32: ISO's Function in an ICS



regarding safety issues.

* Other agencies may have their own ISOs.

* Coordination eliminates duplication and avoids jeopardizing responder safety.

* The ICS allows for only one ISO with direct access to the IC.

* ISOs from other agencies or fire departments should report to the incident ISO.

* On large incidents, ISOs from other agencies may be assigned to divisions.

- The ISO monitors and enforces the safety portion of the IAP developed by the IC:

  * To address responder safety,

  * To ensure compliance with SOGs and recognized practices,

  * To evaluate the IAP for safety,

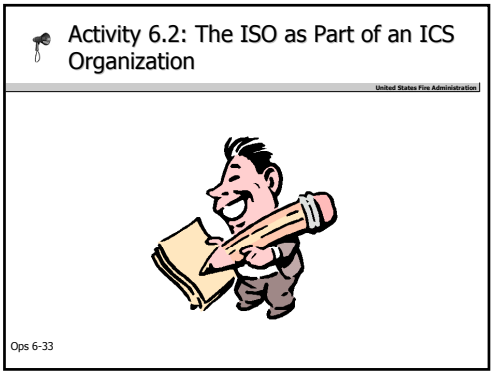
  * To recommend to the IC possible modifications to the IAP to improve responder safety,

  * To evaluate the effectiveness

of SOGs, and

* To determine if SOGs should be modified.

Slide 6-33: Activity 6.2, The ISO as Part of an ICS Organization



IX. Activity 6.2: The ISO as Part of an ICS Organization (30 minutes)

Instructor Notes:

Refer students to Activity 6.2, The ISO as Part of an ICS Organization, in their student manuals.

Activity 6.2:
The ISO as Part of an ICS Organization

Time: 30 minutes

Purpose:

To identify how an ISO functions within an ICS organization and with whom the ISO needs to communicate and coordinate at an incident.

Materials:

- Easel pads
- Markers
- Student Activity Worksheets (provided in the student manuals)

Directions:

1. Divide the class into groups of five to six students. Ask each group to designate one member to be the group's spokesperson.

2. Assign one of four questions concerning the ISO's role or responsibilities at this incident to each of the groups.

3. If there are more than four groups in the class, assign the same question to two of the groups.

4. Allow the groups 10 minutes to read the scenario and work on their answers. Groups should outline their responses on an easel pad. If two groups are working on the same question, ask the second group to share any differences it may have with the first group.

Scenario

Time: 0715 hours, Tuesday

Weather: Light rain, 42°F, wind from the north at 10 to 15 mph.

Situation:

Emergency response units are dispatched to a report of an overturned truck involving injuries. The first-arriving units find a large tank truck on its side, leaking product from the dome covers. Product is running down the gutter and into the storm drainage system. The driver is lying on the street next to the truck and appears to be unconscious. A power pole was hit by the truck, and power lines are down in the street. The scene of the crash is adjacent to a residential area of single- and multifamily residences. The tank is placarded with the number 1307. The product is identified as being xylene. The *Department of Transportation* (DOT) *North American Emergency Response Guidebook* (NAERG) refers the product to Guide #130. The police officer who was first on the scene is complaining of nausea. Residents in the homes immediately next to the crash also are complaining of nausea.

Resources initially dispatched to the incident:

- Two city police department patrol officers
- One ALS ambulance with two paramedics
- One fire department engine with three firefighters and an officer

Activity 6.2:
The ISO as Part of an ICS Organization
Instructor Answer Key

1. What are the immediate safety hazards you feel need to be addressed at this incident?

Suggested responses:

- Identification of leaking product.
- Product into storm drainage system.
- Rescuers going after downed driver without first identifying product.
- Electrocution from power lines.
- Potential ignition of leaking product.
- Health hazard of product to rescuers and residents of neighborhood.
- Fire and explosion hazard.

2. What recommendations would you make to the IC to address safety at this incident?

Suggested responses:

- Identify product and hazards it may present.
- Establish hot zone.
- Establish evacuation area.
- Establish medical and rehabilitation unit.
- Call for relief personnel.
- Establish decontamination.
- Deny entry.
- Evacuate with PPE/SCBA.
- Call for public works response.
- Call for haz mat team response.
- Call for power company response.

3. What additional resources do you feel will be required to improve the level of safety at this incident, and why would they be needed?

Suggested responses:

- Law enforcement for evacuation.
- Health department to assess hazard.
- Trucking company and manufacturer to identify hazards associated with product.
- Medical resources to treat and assess victims and responders.
- Call service organizations to handle evacuees.
- Call for haz mat response to assist in mitigating the emergency.
- Set up responder rehab to protect the wellness of personnel.
- Call for technical specialists.
- Call for second alarm to ensure adequate resources.

4. In addition to the current hazards at this incident, what additional safety hazards do you feel may need to be addressed as the incident progresses?

Suggested responses:

- Product may contaminate municipal water supply.
- Monitor responders' long-term response to exposure to product.
- Identification and evaluation of residents exposed to product.
- Contamination of PPE and apparatus.
- Cleanup/remediation of involved product.
- Plan for long-term responder rehabilitation.
- Assess need for other agency involvement.

Summary:

The ISO needs the ability to identify hazards present at an incident. This ability requires specific knowledge regarding the type of incident. If the ISO lacks the necessary knowledge, he or she should seek guidance from knowledgeable persons. The ISO must be able to identify potential safety risks that the IC may need to address later in the action plan.

1996 DOT North American Emergency Response Guidebook

Guide #130: Potential Hazards

FIRE OR EXPLOSION

HIGHLY FLAMMABLE:

- Will be easily ignited by heat, sparks or flames.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (for example, sewers, basements, and tanks).
- Vapor explosion hazard indoors, outdoors, or in sewers.
- Some may Polymerize (P) explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

Health

- May cause toxic effects if inhaled or absorbed through skin.
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire will produce irritating, corrosive, and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

Public Safety

- CALL emergency response telephone number on shipping paper first. If the shipping paper is not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Isolate spill or leak area immediately for at least 50 to 100 meters (160 to 330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

Protective Clothing

- Wear positive-pressure Self-Contained Breathing Apparatus (SCBA).
- Structural firefighters' protective clothing will provide only limited protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire

- If tank, rail car, or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

Fire

- CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

Small Fires

- Dry chemical, CO_2, water spray, or regular foam.

Large Fires

- Water spray, fog, or regular foam.
- Do not use straight streams.
- Move containers from fire area if possible without risk.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or

discoloration of tank.

- ALWAYS stay away from the ends of tanks.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements, or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand, or other noncombustible material and transfer to containers.
- Use clean nonsparking tools to collect absorbed material.

Large Spills

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

First Aid

- Move victim to fresh air.
- Call emergency medical care.
- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion, or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Activity 6.2:
ISO as Part of an ICS Organization
Student Activity Worksheet

Time: 30 minutes

Purpose:

To identify how an ISO functions within an ICS organization and with whom the ISO needs to communicate and coordinate at an incident.

Directions:

1. Your group will be assigned one of four questions regarding the ISO's role or responsibilities at the following incident.

2. Select one member of your group to be your spokesperson to report your response to the class.

3. Outline your response to the question on an easel pad.

Scenario

Time: 0715 hours, Tuesday.

Weather: Light rain, 42°F, wind from the north at 10 to 15 mph.

Situation:

Emergency response units are dispatched to a report of an overturned truck involving injuries. The first-arriving units find a large tank truck on its side, leaking product from the dome covers. Product is running down the gutter and into the storm drainage system. The driver is lying on the street next to the truck and appears to be unconscious. A power pole was hit by the truck, and the power lines are down in the street. The scene of the crash is adjacent to a residential area of single- and multifamily residences. The tank is placarded with the number 1307. The product is identified as being xylene. The *Department of Transportation* (DOT) *North American Emergency Response Guidebook* (NAERG) refers the product to Guide #130. The police officer who was first on the scene

is complaining of nausea. Residents in the homes immediately next to the crash also are complaining of nausea.

Resources initially dispatched to the incident:

- Two city police department patrol officers
- One ALS ambulance with two paramedics
- One fire department engine with three firefighters and an officer

Questions:

1. What are the immediate safety hazards you feel need to be addressed at this incident?

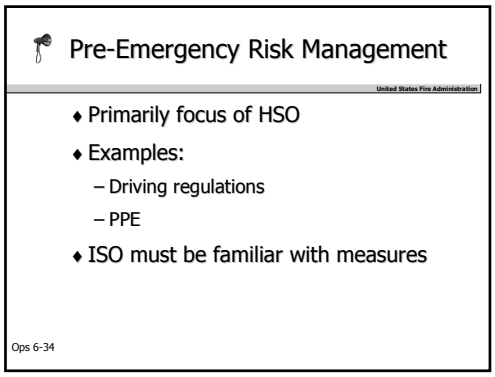
2. What recommendations would you make to the IC to address safety in the IAP?

3. What additional resources do you feel will be required to improve the level of safety at this incident, and why would they be needed?

4. In addition to the current hazards at this incident, what additional safety hazards do you feel may need to be addressed as the incident progresses?

Notes:

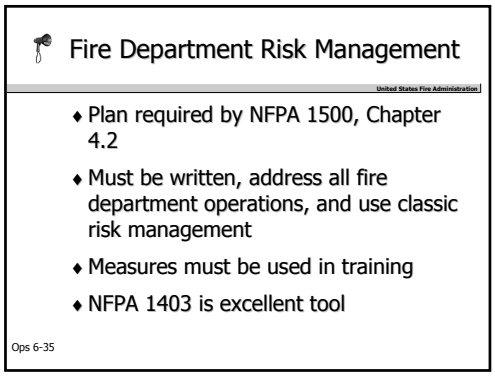
Slide 6-34: Pre-Emergency Risk Management



X. Pre-Emergency Risk Management (10 minutes)

- Pre-emergency risk management is the primary focus of the fire department HSO.
- Examples of pre-emergency risk management are:
  - Driving regulations,
  - Purchase and use of PPE and safety equipment, and
  - Development and use of SOGs.
- The ISO must be familiar with pre-emergency risk management measures since they have a major impact on emergency operations.

Slide 6-35: Fire Department Risk Management



A. Fire department risk management

- Fire departments are required by Chapter 4.2 of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, to have a risk management plan.
- The plan must be written, addressing all fire department operations and containing the elements of classic risk management.

- A risk management plan is a major undertaking, but it can be broken into many small sections to make the work more manageable.

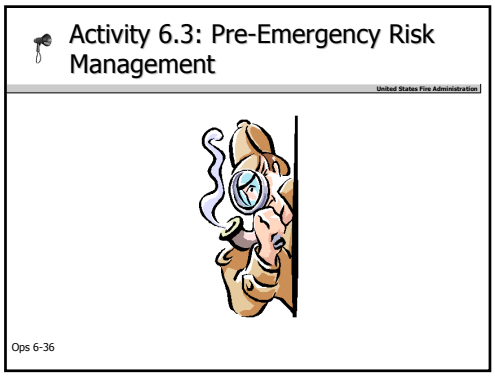
B. Training exercises

- Training exercises are not emergencies.
- All risk management measures designed for use in actual emergencies must be used in the training environment to reinforce learning.
- NFPA 1403, *Standard on Live Fire Training Evolutions,* is an excellent risk management tool.

Instructor Notes:

A major part of this module involves the critique of photographs. While it is easy to call into question the actions of responders in the photos, we should remember that we only know what we see in the photo. There may be extenuating circumstances of which we are unaware in any of these situations that may have a bearing on the actions shown in the photos. In a sense, we are Monday-morning quarterbacks. If a member of the class faced these situations while acting as an ISO, other circumstances might come to light that validate some actions.

Slide 6-36: Activity 6.3, Pre-Emergency Risk Management



XI. Activity 6.3: Pre-Emergency Risk Management (15 minutes)

Instructor Notes:

Refer students to Activity 6.3, Pre-Emergency Risk Management, in their student manuals.

Activity 6.3:
Pre-Emergency Risk Management

Time: 15 minutes

Purpose:

To identify pre-emergency risk management measures that have an impact on emergency operations.

Materials:

- Student Activity Worksheets (provided in the student manuals)
- Visuals

Directions:

You will show the students slides of actual emergency incidents.

1. Show the first slide for approximately 15 seconds. Then go to a black screen. Allow the students a short time to identify pre-emergency risk management measures that have an impact on the scene shown in the photograph. After a few moments, show the second slide, and so on.

2. After you have shown all four slides, return to the first slide and ask the class to name the pre-emergency risk management measures they identified. If students seem reluctant to respond, pick one student to give his or her answer and allow others to join in. List their responses on an easel pad.

   Point out safety cues that are used in assessing the safety of responders in each situation. A listing of the pre-emergency risk management measures and safety cues is outlined for each situation in the Instructor Answer Key.

   The students may take this opportunity to turn the discussion into a series of war stories. You should keep the discussion moving and relate it to the slides shown.

Slide 1 (6-37): Accident at an intersection

Slide 2 (6-38): Building fire

Slide 3 (6-39): Firefighters involved in vehicle extrication

Slide 4 (6-40): EMS scene: firefighters treating patient

Activity 6.3:
Pre-Emergency Risk Management
Instructor Answer Key

Slide 1 (6-37): Accident at an intersection

Suggested responses:

- Apparatus placement procedure that blocks street.
- Use of fire line tape.
- Use of traffic visibility vests.
- Contrasting color reflective stripes on apparatus.

Slide 2 (6-38): Building fire

Suggested responses:

- Full protective clothing.
- Procedure for checking exposure fire spread.

Slide 3 (6-39): Firefighters involved in vehicle extrication

Suggested responses:

- Full protective clothing.
- Eye protection.

Slide 4 (6-40): EMS scene: firefighters treating patient

Suggested responses:

- Protection line in place for chopper landing.
- Firefighters in protective clothing on protection line.
- Protective clothing/infection control equipment.
- Command—chief on scene.

Summary:

Risk is inherent in our daily lives. Our jobs as emergency responders place us in risky situations. The danger presented by these risks can be minimized through risk management techniques. Pre-emergency risk management measures have a major impact on how emergency services organizations perform their work.

Activity 6.3:
Pre-Emergency Risk Management
Student Activity Worksheet

Time: 15 minutes

Purpose:

To identify pre-emergency risk management measures that have an impact on emergency operations.

Directions:

1. Your instructor will show you a series of slides. After briefly viewing the slides, you are to identify and note in the spaces provided the pre-emergency risk management measures in the photograph as well as correct and incorrect safety behaviors and actions.

2. Your instructor may call on you to discuss your observations with the class.

Slide 1: Accident at an intersection

Pre-emergency risk factors:

_____

_____

_____

_____

Correct safety behaviors and actions:

_____

_____

_____

_____

Incorrect safety behaviors and actions:

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_____

Slide 2: Building fire

Pre-emergency risk factors:

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Correct safety behaviors and actions:

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_____

Incorrect safety behaviors and actions:

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_____

Slide 3: Firefighters involved in vehicle extrication

Pre-emergency risk factors:

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Correct safety behaviors and actions:

_____

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_____

Incorrect safety behaviors and actions:

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_____

Slide 4: EMS scene, firefighters treating patient

Pre-emergency risk factors:

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Correct safety behaviors and actions:

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Incorrect safety behaviors and actions:

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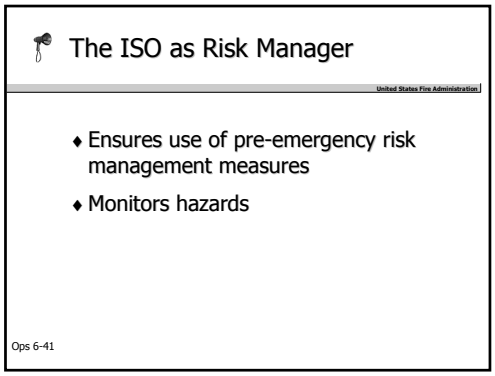
XII. The ISO's Role in Emergency Risk Management (10 minutes)

A. Risk management at emergencies

- Risk management is a rapid, constantly changing process.
- The nature of the risk may not allow in-depth analysis.
- Safety cues will assist the on-scene risk manager, the ISO.

Slide 6-41: The ISO as Risk Manager

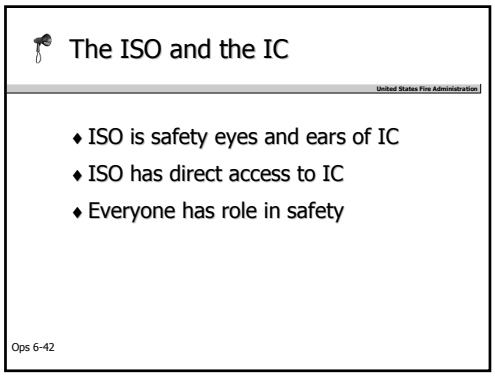


B. The ISO as risk manager

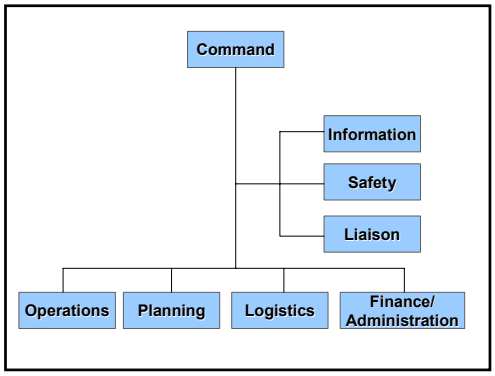
As the risk manager, the ISO:

- Ensures that pre-emergency risk management measures are used; and
- Monitors the emergency scene for hazards; uses risk management tools.
- The nature of most emergencies will speed up the process, but some incidents will allow a more studied approach, such as:
  - Haz mat incidents and
  - Heavy-rescue body recovery.

Slide 6-42: The ISO and the (IC)

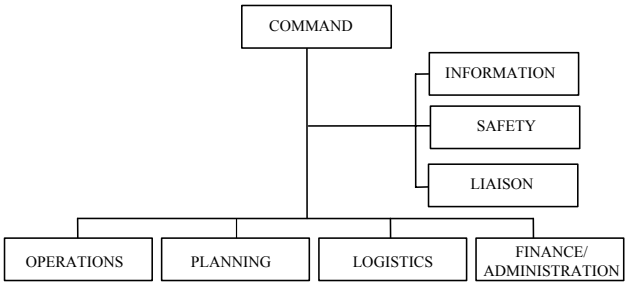


Slide 6-43: ICS Organization



C. The ISO and the IC

- The ISO is the safety eyes and ears of the IC.
- The ISO has direct access to the IC.



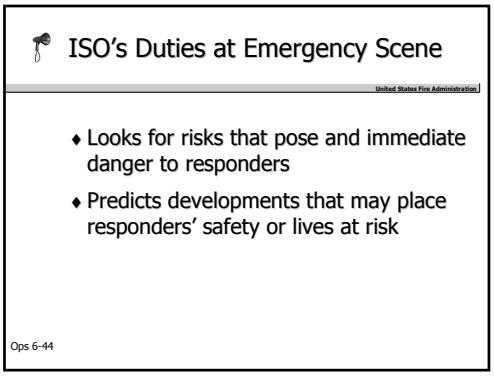
Instructor Notes:

Reinforce the meaning of direct access to the IC. Direct access means that the ISO's messages are a high priority and must not be garbled in transmission. The ISO generally is able to speak face-to-face with the IC.

- Every responder has a role in his or her individual safety and the safety of others.
- The IC has overall responsibility for everything that goes on at an emergency.
- The IC should take great care in

the selection of the ISO. Experience and familiarity with operations are very important.

Slide 6-44: ISO's Duties at Emergency Scene

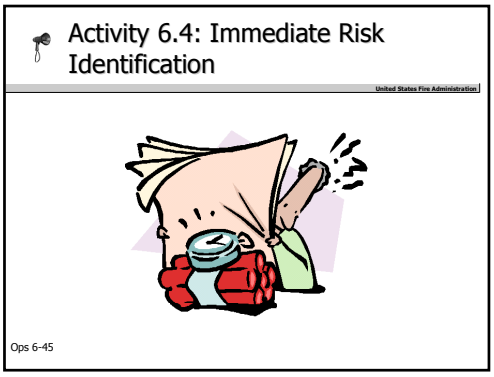


D. The ISO's duties at the emergency scene

The ISO's job at an emergency is safety. He or she:

- Looks for risks that pose an immediate danger to responders and
- Predicts developments that may place responders' safety or lives at risk.

Slide 6-45: Activity 6.4, Immediate Risk Identification



XIII. Activity 6.4: Immediate Risk Identification (15 minutes)

Instructor Notes:

Refer students to Activity 6.4, Immediate Risk Identification, in their student manuals.

Activity 6.4:
Immediate Risk Identification

Time: 15 minutes

Purpose:

To identify immediate risks to emergency responders.

Materials:

- Student Activity Worksheets (provided in the student manuals)
- Visuals

Directions:

You will show the students slides of actual emergency incidents.

1. Show the first slide for approximately 15 seconds. Then go to a black screen. Allow the students a short time to identify risks that are immediate dangers to responders. After a few moments, show the second slide, and so on.

2. After you have shown all of the slides, return to the first slide and ask the class to identify risks that are an immediate danger to responders. These may be risks posed by the danger of the incident or by the improper actions of responders shown in the photograph. If students seem reluctant to respond, pick one to give his or her answer and allow others to join in. List their responses on an easel pad.

   Point out safety cues that are used in assessing the safety of responders in each situation. Students most likely will find more risks than those listed.

   The students may take this opportunity to turn the discussion into a series of war stories. You should keep the discussion moving and relate it to the slides shown.

Slide 1 (6-46): Firefighters treating a shooting victim

Slide 2 (6-47): Car fire at a restaurant drive-thru

Slide 3 (6-48): Tar tanker fire, overhaul

Slide 4 (6-49): Wildland fire

Slide 5 (6-50): Rowhouse fire

Slide 6 (6-51): Firefighters venting roof

Activity 6.4:
Immediate Risk Identification
Instructor Answer Key

Slide 1 (6-46): Firefighters treating a shooting victim

Suggested responses:

- Infectious disease.
- Shooter may still be in the area.

Slide 2 (6-47): Car fire at a restaurant drive-thru

Suggested responses:

- Extension of the fire into the structure.
- Lack of protective clothing on the firefighter to the left.
- Firefighter using a booster line.
- May push fire onto firefighter next to car.

Slide 3 (6-48): Tar tanker fire, overhaul

Suggested responses:

- Trailer may collapse on firefighters.
- PPE contamination from hydrocarbons.
- Danger from smoke.
- Possible reflash of fire.

Slide 4 (6-49): Wildland fire

Suggested responses:

- Danger of fire spread.
- Lack of water supply.

Slide 5 (6-50): Rowhouse fire

Suggested responses:

- Too many firefighters on the small roof.
- Electric wires near aerial ladder.
- Unsupported ladder.

Slide 6 (6-51): Firefighters venting roof

Suggested responses:

- Lack of SCBA on two firefighters.
- Lack of roof ladder.
- No protection line.

Summary:

The ISO's role at an incident scene is that of risk manager. The first step in risk management is risk identification. The ISO must be able to look at a situation rapidly and identify immediate hazards to the safety of responders. The ISO uses training, experience, safety cues, and intuition to assist in the risk identification process.

Activity 6.4:

Immediate Risk Identification

Student Activity Worksheet

Time: 15 minutes

Purpose:

To identify immediate risks to emergency responders.

Directions:

1. Your instructor will show you a series of slides. After briefly viewing the slides, you are to identify and note in the spaces provided the immediate risks to the responders shown in the photograph.

2. Your instructor may call on you to discuss your observations with the class.

Slide 1: Firefighters treating a shooting victim

Immediate risks to emergency responders:

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Slide 2: Car fire at a restaurant drive-thru

Immediate risks to emergency responders:

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Slide 3: Tar tanker fire, overhaul

Immediate risks to emergency responders:

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_____

Slide 4: Wildland fire

Immediate risks to emergency responders:

_____

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Slide 5: Rowhouse fire

Immediate risks to emergency responders:

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Slide 6: Firefighters venting roof

Immediate risks to emergency responders:

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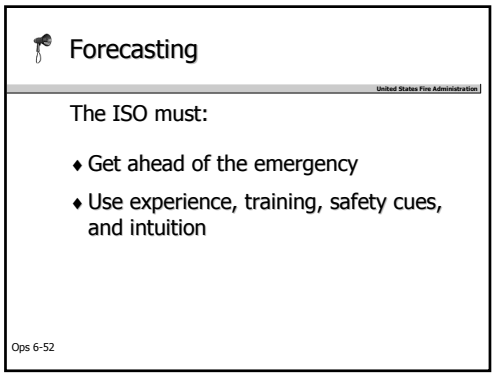
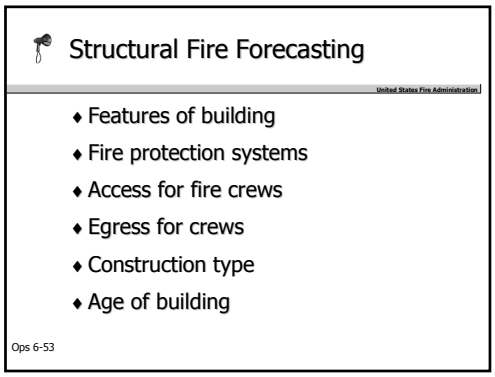
Slide 6-52: Forecasting



Slide 6-53: Structural Fire Forecasting



XIV. Forecasting (25 minutes)

- The ISO must realize that fires and other emergencies are dynamic, and that a situation that appears safe at one moment may be completely unsafe moments later.

- The ISO must use experience, training, safety cues, and intuition to predict developments that will affect responder safety.

A. Structural fire forecasting

At a structural fire, the ISO's forecast must consider the following elements.

- Features of the fire building:

  * Difficult access to the interior (maze-like floor plans increase risk) and

  * Utilities: gas, electricity, or steam.

- Fire protection systems:

  * Operating sprinklers indicate a working fire.

  * Added weight from sprinkler water eventually may cause structural problems.

  * Automatic or manual smoke

vents may assist firefighters working in interior positions.

* The presence of special agent systems, such as dry chemicals and Halon, indicates that a special hazard is present. These systems usually are designed to discharge only once.

- Access for fire crews:

  * Large buildings present fatigue problems.

  * If the fire appears to be in hidden spaces, opening up for suppression will be time-consuming and will cause firefighters to become fatigued.

- Egress for crews working on the interior:

  * Crews must be able to find their way out if an emergency occurs.

  * Ladders to upper-story windows provide alternative escape routes.

- Construction type:

  * Bowstring truss and lightweight truss roofs often fail early. Their failures can have dramatic and deadly

consequences.

* Look for the presence of "stars" and other indications that the structure has been reinforced by steel rods.

* Look and listen for early signs of structural failure, for example, groaning, smoking mortar, and bulges.

* Look for other construction hazards such as suspended loads.

- Age of the building:

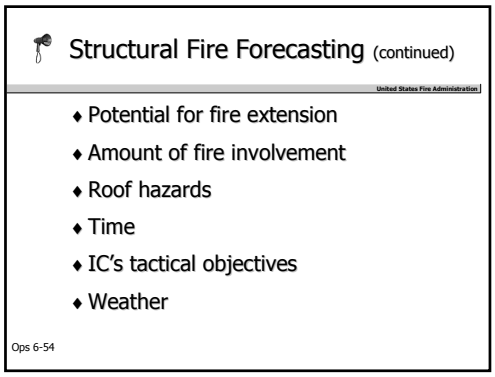
  * Older buildings generally do not have lightweight trusses.

  * Egress and access may be difficult.

  * Look for signs of structural weakness such as reinforcing rods.

  * A new building is just as likely to collapse as an older building.

Slide 6-54: Structural Fire Forecasting (continued)



- Potential for fire extension into exposed buildings:
  - Gauge the amount of fire involvement.
  - Gauge the distance between buildings.
  - Gauge the wind conditions.
- Amount of fire involvement:
  - Big fires usually mean no survivors and less benefit from risk to firefighters engaged in interior operations.
  - Greater fire involvement leads to early structural failure.
- Roof hazards:
  - Ladders at two corners;
  - Firefighters walking on structural members; and
  - Potential for collapse (for example, bowstring trusses and lightweight wood trusses).
  - Once you cut the hole, get off the roof.
  - If the fire is well vented, no hole is needed.

- Time:
  - Time from ignition to flashover may be as little as 2 or 3 minutes.
  - The longer the fire burns, the weaker the structure becomes.
  - Taking into account the time interval between the arrival of the first unit on the scene and the response time of the ISO, it is possible that the incident has been going on longer than the ISO has been there.
  - Time can work against emergency responders.
- IC's tactical objectives:
  - If things do not go as the IC hoped, firefighters must be able to remove themselves from the hazard area.
  - The ISO must know the IC's attack plan and how it will be carried out.
  - Water supply (hydrants or tanker operation) must be adequate to support safe operations. Insufficient water or running out of water can put firefighters in a dangerous position. Look for hydrants or recommend a tanker operation.

- Weather:
  - Extreme heat dictates the early initiation of rehab, and more frequent work/rest cycles.
  - Cold weather presents hazards in addition to hypothermia, for example, slippery surfaces and mud.
  - Electrical storms may create lightning hazards.
  - Ground ladders can be blown over by strong winds.

Slide 6-55: Medical Emergency Forecasting

B. Medical emergency forecasting

Medical emergency forecasting includes forecasting for:

- Protection from communicable diseases;
- Protection from physical hazards, such as sharp surfaces. (Use full PPE during an extrication, including members inside the car that is being cut apart.)
- Violent acts:
  - If a crowd has gathered, individuals may become agitated or violent toward responders.
  - The person who committed

the violent act still may be in the area.

* Escape routes will be needed if the situation worsens.

* Law enforcement presence helps to ensure responder safety.

- Protection from surroundings:

  * Moving traffic—Emergency vehicles should be used to shield from traffic, if possible.

  * Car/pedestrian accident—Move patient onto curb and out of traffic for treatment, if possible.

  * Weather—Provide protection from the weather, for example, heat, cold, rain, or sleet.

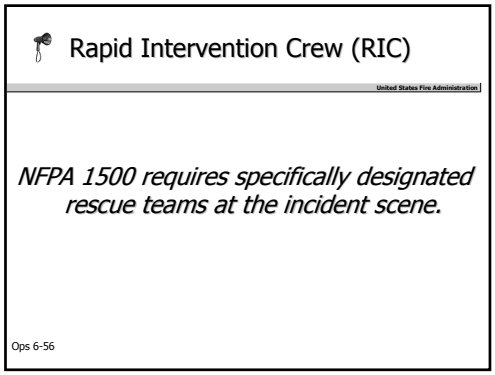
- Sufficient staffing:

  * Staffing must be adequate to carry and load the patient(s) into the ambulance.

  * Help may be available from bystanders or law enforcement officials.

  * If the patient is far from the road or from a paved surface, more people will be needed to carry the gurney.

Slide 6-56: Rapid Intervention Crew (RIC)



XV. Rapid Intervention Crew (RIC) (10 minutes)

A. NFPA 1500

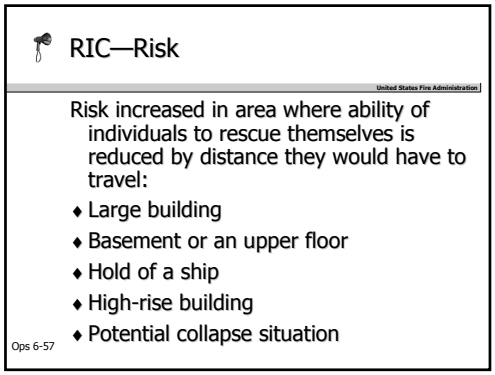
- NFPA 1500 requires specifically designated rescue crews at the incident scene.
- Firefighters are exposed to the highest risk of injury or death.
- One of the most effective mechanisms for reducing risk is to have a crew ready.
- Not all risk can be eliminated, so we must make provisions to assist members who find themselves in trouble.
- Your RIC should be located close enough to establish the standard and able to deploy effectively and immediately. Address the spirit of the law as well as the letter of the law.

B. Risk

- Identify the risk characteristics of the situation and evaluate specific risk factors.

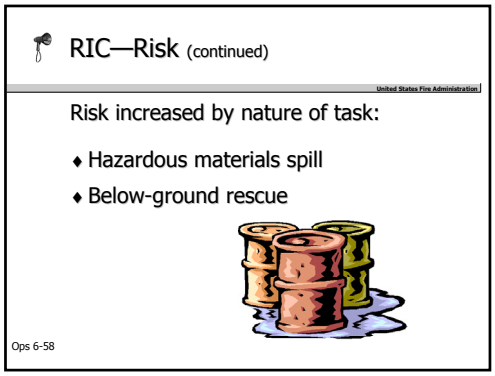
  A situation involving a high level of risk requires a greater commitment to rapid intervention.

Slide 6-57: RIC—Risk



- Risk may be increased if the fire situation is in an area where the ability of individuals to rescue themselves is reduced by the distance they would have to travel, for example:
  - In a large building,
  - In a basement or an upper floor,
  - In the hold of a ship,
  - In a high-rise building, or
  - In a potential collapse situation.

Slide 6-58: RIC—Risk (continued)



- Risk is increased by the nature of the task in which firefighters are involved, for example:
  - A hazardous materials spill or
  - A below-ground rescue.

C. Composition and placement

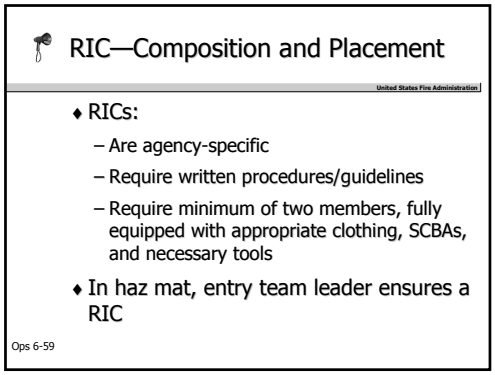
- The composition and placement of RICs may be agency specific and dictated by individual needs and available resources.
- Written procedures/guidelines

must be developed for the use of these teams, especially when they are performing exterior operations in support of interior crews.

- Procedures should include evacuation signals and guidelines for implementing evacuation and relocation of personnel from the area of danger.

- Agencies involved in auto/mutual-aid response should develop consistency.

Slide 6-59: RIC—Composition and Placement



- RICs must consist of a minimum of two members, fully equipped with appropriate clothing, SCBA, and necessary tools.

- They should monitor the tactical radio channel to maintain complete and accurate understanding of operations and conditions.

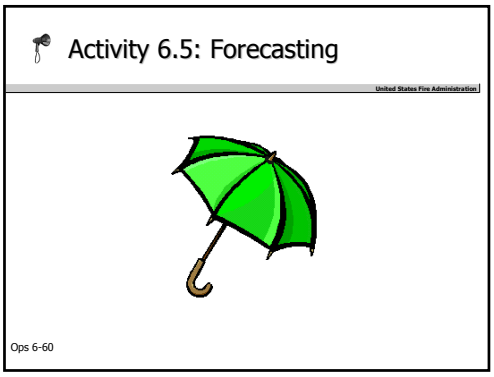
- In a hazardous materials operation, the entry team leader must ensure that there is an RIC.

- Whenever personnel are operating in positions or performing functions that subject them to immediate danger, at least one properly attired RIC must be available to provide assistance.

- Rapid intervention procedures should not be confused with initial interior structural

firefighting operations addressed in NFPA 1500.

Slide 6-60: Activity 6.5, Forecasting



XVI. Activity 6.5: Forecasting (20 minutes)

Instructor Notes:

Refer students to Activity 6.5, Forecasting, in their student manuals.

Activity 6.5:
Forecasting

Time: 20 minutes

Purpose:

To gain experience forecasting risks to emergency responders.

Materials:

- Student Activity Worksheets (provided in the student manuals)
- Visuals

Directions:

You will show the students slides of actual emergency incidents.

1. Show the first slide for approximately 15 seconds. Then go to a black screen. Allow the students a short time to forecast risks that may present a danger to responders and note them in their student manuals. After a few moments, show the second slide, and so on.

2. After you have shown all of the slides, return to the first slide and ask the class to forecast risks that may present a danger to responders. These may be risks posed by the danger of the incident or by the improper actions of responders shown in the slide. If students seem reluctant to respond, pick one to give his or her answer and allow others to join in. List their responses on an easel pad.

   The students may take this opportunity to turn the discussion into a series of war stories. You should keep the discussion moving and relate it to the slides shown.

Slide 1 (6-61): High-rise fire

Slide 2 (6-62): Supermarket fire

Slide 3 (6-63): Fire extending into a structure

Slide 4 (6-64): Factory fire

Slide 5 (6-65): Brush engine on rail line

Activity 6.5:
Forecasting
Instructor Answer Key

Slide 1 (6-61): High-rise fire

Suggested responses:

- Access.
- Need for additional crews due to fatigue.
- Rehab.
- Need assistant safety officers.
- Establish RIC.

Slide 2 (6-62): Supermarket fire

Suggested responses:

- Fire extension.
- Building collapse.
- Prolonged incident duration.
- Need for rehab.
- Need for RICs.

Slide 3 (6-63): Fire extending into a structure

Suggested responses:

- Black smoke may indicate hydrocarbons or haz mat.
- Dangerous contents of the warehouse.
- Possibility of compressed gas due to presence of service truck.

Slide 4 (6-64): Factory fire

Suggested responses:

- Structural collapse.
- Danger of chimney falling.

Slide 5 (6-65): Brush engine on rail line

Suggested responses:

- Danger of train arrival.
- Danger of engine getting stuck.
- Unprotected civilians in the hazard area.

Summary:

The ISO must predict hazards that may have an impact on responders.

Activity 6.5:
Forecasting
Student Activity Worksheet

Time: 20 minutes

Purpose:

To gain experience forecasting risks to emergency responders.

Directions:

1. Your instructor will show you a series of slides. After briefly viewing the slides, you are to forecast and list risks to the responders based on what you see.

2. Your instructor may call on you to discuss your observations with the class.

Slide 1: High-rise fire

Risks to responders:

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Slide 2: Supermarket fire

Risks to responders:

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Slide 3: Fire extending into a structure

Risks to responders:

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Slide 4: Factory fire

Risks to responders:

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Slide 5: Brush engine on rail line

Risks to responders:

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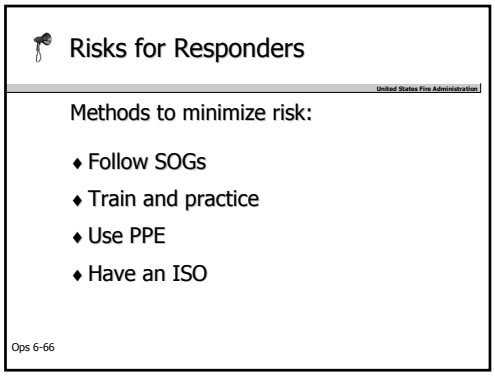
Slide 6-66: Risks for Responders



XVII. Acceptable Risks (5 minutes)

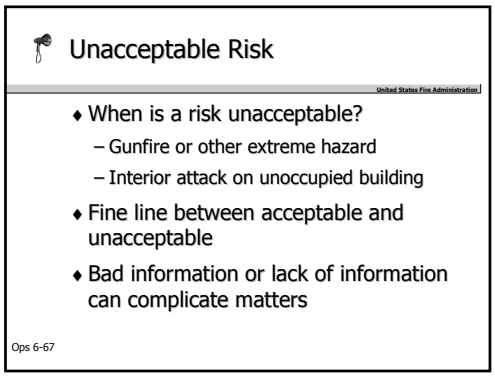
Risks for responders:

- Emergency response personnel are action oriented.
- Part of their job is to take risks that would be unacceptable to the general public.
- Methods to minimize risk include:
  - Following SOGs,
  - Training and practicing,
  - Using PPE, and
  - Having an ISO.
- Emergency responders may risk their lives in a calculated manner to save a life.
- They may place themselves in situations with moderate risk to save property.
- They will risk nothing to save lives that already have been lost or property that already has been destroyed.

XVIII. Unacceptable Risks (10 minutes)

Some risks are unacceptable, even for emergency responders. This fact should be addressed in the agency risk management plan.

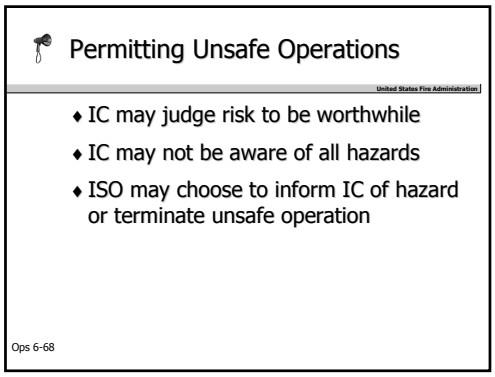
Slide 6-67: Unacceptable Risk



A. When a risk is unacceptable

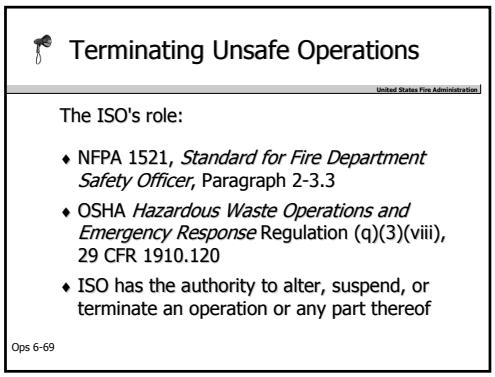
- There is no reason to risk the life of a responder in a situation where an injured person is inaccessible because of gunfire or some other extreme hazard.
- There is no reason to risk the life of a firefighter by sending him or her to conduct an interior attack on a fire in an unoccupied building.
- There is a fine line between an acceptable risk and an unacceptable risk. Bad information or a lack of information can complicate the decision.

Slide 6-68: Permitting Unsafe Operations



- The ISO has input to decision-making process.
  - The IC may have judged that the risk of an operation is worth the potential benefit.
  - The IC may not be aware of all of the hazards posed by a particular activity.
  - The ISO may choose to inform the IC of hazards, or the ISO may choose to terminate an operation that is deemed unsafe.

Slide 6-69: Terminating Unsafe Operations



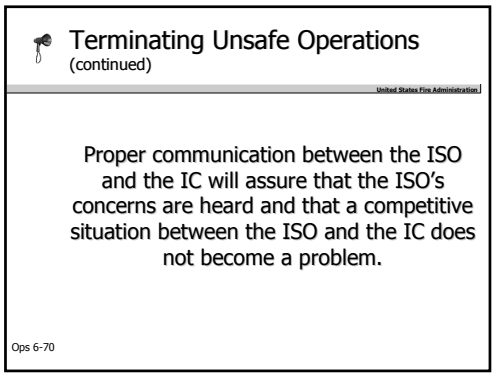
B. The ISO's role in terminating unsafe operations

- The following standards and regulations explain the ISO's role in terminating unsafe operations:
  - Chapter 2-3.3 of NFPA 1521, *Standard for Fire Department Safety Officer*, 1992 Ed; and
  - Section (q) (3) (viii) of the OSHA *Hazardous Waste Operations and Emergency Response* (HAZWOPER) regulation (Title 29, *Code of Federal Regulations (29 CFR) 1910.120*, Final Rule).
- The ISO has the authority to alter, suspend, or terminate an operation or parts of an operation

if he or she judges it to be an imminent safety hazard to responders.

- Each response organization should have a policy on ISO termination of emergency operations.

Slide 6-70: Terminating Unsafe Operations (continued)

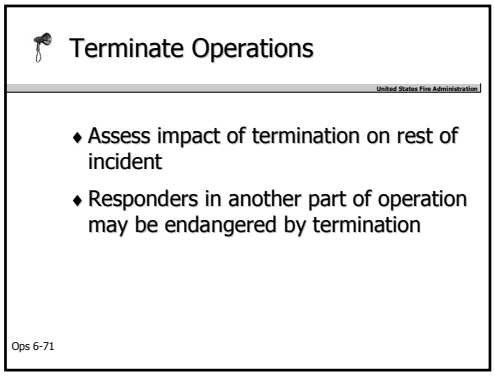


C. Communications with the IC

- While the ISO has the authority to terminate an unsafe operation, this decision may not be welcomed by the IC.

- Proper communication between the ISO and the IC will assure that the ISO's concerns are heard and that a competitive situation between the ISO and the IC does not become a problem.

Slide 6-71: Terminate Operations

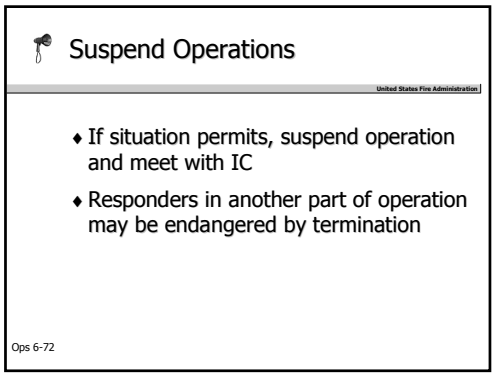


D. Terminating operations

- Assess the impact of the termination on the rest of the incident.

- Responders in another area of the operation may be endangered by the termination.

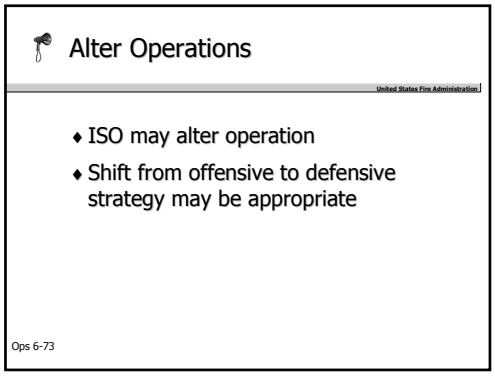
Slide 6-72: Suspend Operations



E. Suspending operations

- If the situation permits, the ISO may choose to suspend an operation until he or she confers with the IC.
- Responders in another area of the operation may be endangered by the termination.

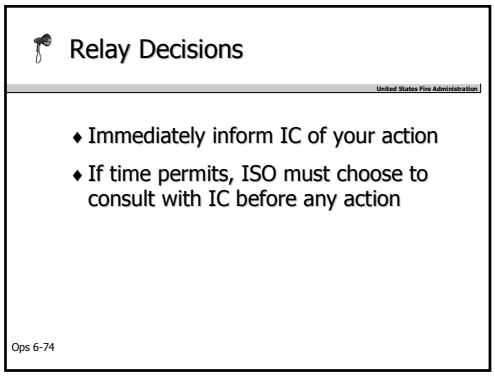
Slide 6-73: Alter Operations



F. Altering operations

- The ISO may order the alteration of an activity or operation.
- A shift from offensive to defensive strategy may be an appropriate alteration.
- A change in strategic mode must be communicated to all personnel on the scene.

Slide 6-74: Relay Decisions

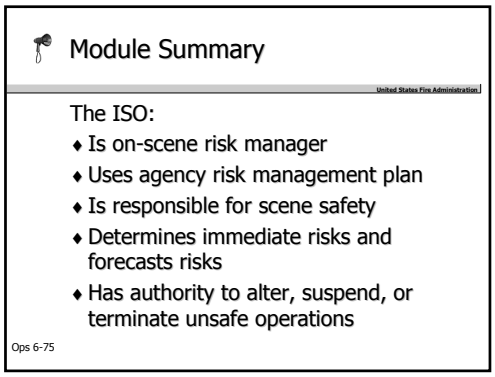


G. Relaying decisions

- Relay the decision and reasons for the decision to the IC immediately by radio or face-to-face contact.
- These decisions tend to be significant events.
  - The ISO must take great care to make sure the decision is valid.

* Keep focus on the safety of responders.

Slide 6-75: Module Summary



XIX. Module Summary (5 minutes)

Instructor Notes:

Briefly summarize the module and provide students an opportunity to comment and ask questions.

- The ISO is the on-scene risk manager.
- The ISO uses the agency risk management plan, risk management techniques, training, experience, safety cues, and intuition to perform his or her job.
- The ISO is responsible for the safety of responders on the scene.
- The ISO must look for immediate risks and forecast risks that may threaten the safety of responders.
- The ISO has the authority to alter, suspend, or terminate an unsafe operation.
- Good communications between the ISO and the IC help assure the safety of responders.

MODULE 6

APPENDIX: ICS FORM 208

SITE SAFETY AND CONTROL PLAN ICS 208 HM	1. Incident Name:	2. Date Prepared:	3. Operational Period: Time:

Section I. Site Information

4. Incident Location:

Section II. Organization

5. Incident Commander:	6. HM Group Supervisor:	7. Tech. Specialist - HM Reference:
8. Safety Officer:	9. Entry Leader:	10. Site Access Control Leader:
11. Asst. Safety Officer - HM:	12. Decontamination Leader:	13. Safe Refuge Area Mgr:
14. Environmental Health:	15.	16.

17. Entry Team: (Buddy System) Name:	PPE Level	18. Decontamination Element: Name:	PPE Level
Entry 1		Decon 1	
Entry 2		Decon 2	
Entry 3		Decon 3	
Entry 4		Decon 4	

Section III. Hazard/Risk Analysis

19. Material:	Container type	Qty.	Phys. State	pH	IDLH	F.P.	I.T.	V.P.	V.D.	S.G.	LEL	UEL

Comment:

Section IV. Hazard Monitoring

20. LEL Instrument(s):	21. O_2 Instrument(s):
22. Toxicity/PPM Instrument(s):	23. Radiological Instrument(s):

Comment:

Section V. Decontamination Procedures

24. Standard Decontamination Procedures:	YES:	NO:

Comment:

Section VI. Site Communications

25. Command Frequency:	26. Tactical Frequency:	27. Entry Frequency:

Section VII. Medical Assistance

28. Medical Monitoring:	YES:	NO:	29. Medical Treatment and Transport In-place:	YES:	NO:

Comment:

Section VIII. Site Map

30. Site Map:

Weather ❑ Command Post ❑ Zones ❑ Assembly Areas ❑ Escape Routes ❑ Other ❑

Section IX. Entry Objectives

31. Entry Objectives:

Section X. SOP S and Safe Work Practices

32. Modifications to Documented SOP s or Work Practices:	YES:	NO:

Comment:

Section XI. Emergency Procedures

33. Emergency Procedures:

Section XII. Safety Briefing

34. Asst. Safety Officer - HM Signature:	Safety Briefing Completed (Time):
35. HM Group Supervisor Signature:	36. Incident Commander Signature:

INSTRUCTIONS FOR COMPLETING THE SITE SAFETY AND CONTROL PLAN
ICS 208 HM

A Site Safety and Control Plan must be completed by the Hazardous Materials Group Supervisor and reviewed by all within the Hazardous Materials Group prior to operations commencing within the Exclusion Zone.

Item Number	Item Title	Instructions
1.	**Incident Name/Number**	**Print name and/or incident number.**
2.	**Date and Time**	**Enter date and time prepared.**
3.	**Operational Period**	**Enter the time interval for which the form applies.**
4.	**Incident Location**	**Enter the address and or map coordinates of the incident.**
5 - 16.	**Organization**	**Enter names of all individuals assigned to ICS positions. (Entries 5 & 8 mandatory). Use Boxes 15 and 16 for other functions: i.e. Medical Monitoring.**
17 - 18.	**Entry Team/Decon Element**	**Enter names and level of PPE of Entry & Decon personnel. (Entries 1 - 4 mandatory buddy system and back-up.)**
19.	**Material**	**Enter names and pertinent information of all known chemical products. Enter UNK if material is not known. Include any which apply to chemical properties. (Definitions: ph = Potential for Hydrogen (Corrosivity), IDLH = Immediately Dangerous to Life and Health, F.P. = Flash Point, I.T. = Ignition Temperature, V.P. = Vapor Pressure, V.D. = Vapor Density, S.G. = Specific Gravity, LEL = Lower Explosive Limit, UEL = Upper Explosive Limit)**
20 - 23.	**Hazard Monitoring**	**List the instruments which will be used to monitor for chemical.**
24.	**Decontamination Procedures**	**Check NO if modifications are made to standard decontamination procedures and make appropriate Comments including type of solutions.**
25 - 27.	**Site Communications**	**Enter the radio frequency(ies) which apply.**
28 - 29.	**Medical Assistance**	**Enter comments if NO is checked.**
30.	**Site Map**	**Sketch or attach a site map which defines all locations and layouts of operational zones. (Check boxes are mandatory to be identified.)**
31.	**Entry Objectives**	**List all objectives to be performed by the Entry Team in the Exclusion Zone and any parameters which will alter or stop entry operations.**
32 - 33.	**SOP s, Safe Work Practices, and Emergency Procedures**	**List in Comments if any modifications to SOP s and any emergency procedures which will be affected if an emergency occurs while personnel are within the Exclusion Zone.**
34 - 36.	**Safety Briefing**	**Have the appropriate individual place their signature in the box once the Site Safety and Control Plan is reviewed. Note the time in box 34 when the safety briefing has been completed.**

MODULE 7

MODULE 7

FIRE CAUSE DETERMINATION I

MODULE 7:

FIRE CAUSE DETERMINATION I

Terminal Objective

Upon completing the module, students will be able to make critical observations about the area of fire origin and the fire cause.

Enabling Objectives

Students will:

- Identify critical observations made en route to a fire;
- Identify critical observations made during size-up of a fire;
- Identify critical observations made during fire suppression;
- Identify critical observations made during the overhaul phase of a fire;
- Identify and describe the major principles of combustion that affect the development, spread, and extinguishment of fire;
- Identify and describe three methods of heat transfer;
- Differentiate between flashover and backdraft;
- Distinguish among the four classes of fire; and
- Identify and describe the three phases of burning.

Requirements

Facility

Classroom with tables

Materials

- COTC Operations Instructor Guide

- COTC Operations Student Manual
- PowerPoint® slides

Equipment

- Computer
- LCD projector
- One portable screen or classroom equipped with screen
- Chalkboard/wipeboard
- Easel pads with markers

Instructor Guidelines

The instructor should carefully read the instructor guide and the student manual and become familiar with the content before presenting the course.

This module stresses the earliest possible role of the company officer and firefighters in fire origin and cause determination. This role begins with the response and continues with size-up, suppression, and overhaul. It ends when the officer either makes a cause determination or decides to call in an investigator.

The module emphasizes all the items an officer and the members of the company can observe that might help pinpoint the origin and identify the cause.

The module also reviews some basic scientific principles that affect fire origin and spread. Because these principles have a bearing on making an origin and cause determination, the officer needs to interpret them carefully in making any conclusions on origin and cause.

A good deal of this material should have been covered in basic fire science courses. Therefore, invite the students to take a very active part in the presentations. Ask them to provide the information whenever possible, rather than lecturing to them.

The module has three activities. The first activity uses slides and gives the students a chance to examine their observations. The next two activities use written scenarios to apply some of the concepts on fire behavior presented in the unit.

The module includes a Fire Behavior Checklist the students can use as a job aid. A copy of this job aid is in this guide and in the student manual.

Methodology

This module uses lecture, discussion, and activities.

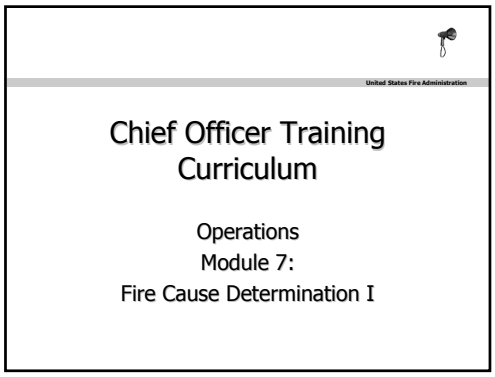
Outline

I. Objectives and Overview ..... 5 minutes
II. Observations: Responding and Arriving ..... 10 minutes
III. Observations During Size-Up ..... 15 minutes
IV. Observations During Suppression Activities ..... 10 minutes
V. Observations During Overhaul ..... 20 minutes
VI. Activity 7.1: Observations ..... 30 minutes
VII. Role of the Officer ..... 10 minutes
VIII. Fire Behavior ..... 15 minutes
IX. Activity 7.2: Predicting Fire Behavior ..... 30 minutes
X. Fire Behavior (continued) ..... 40 minutes
XI. Activity 7.3: Stages of Burning ..... 45 minutes
XII. Module Summary ..... 10 minutes
240 minutes

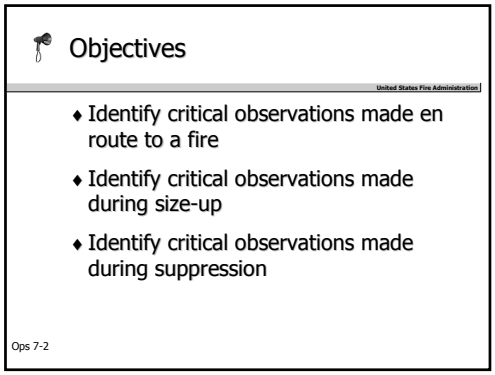
NFPA 1021 Standards Cross-Reference Matrix

3-5, 4-5

Slide 7-1: Module 7, Fire Cause Determination I



Slide 7-2: Objectives



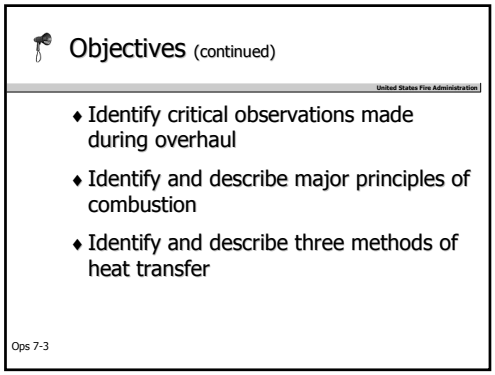
I. Objectives and Overview (5 minutes)

A. Objectives

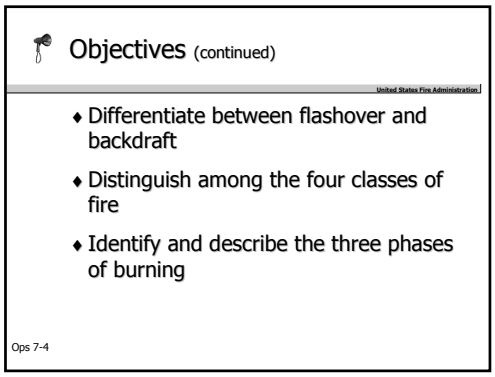
Students will be asked to:

- Identify critical observations made en route to a fire;
- Identify critical observations made during size-up of a fire;
- Identify critical observations made during fire suppression;

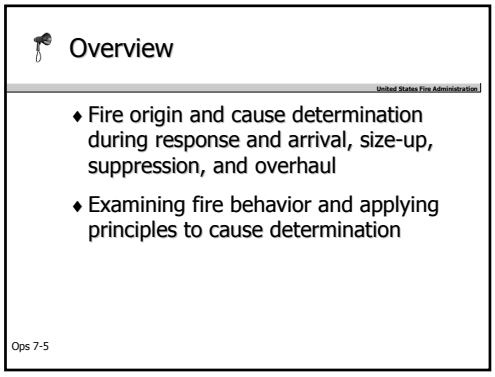
Slide 7-3: Objectives (continued)



Slide 7-4: Objectives (continued)



Slide 7-5: Overview



- Identify critical observations made during the overhaul phase of a fire;
- Identify and describe the major principles of combustion that affect the development, spread, and extinguishment of fire;
- Identify and describe three methods of heat transfer;
- Differentiate between flashover and backdraft;
- Distinguish among the four classes of fire; and
- Identify and describe the three phases of burning.

B. Overview

This module stresses the earliest possible role of the chief officer and firefighters in fire origin and cause determination. The officer's role begins with the response and continues with size-up, suppression, and overhaul. It ends when the officer either makes a cause determination or decides to call in an investigator.

The module emphasizes all the items an officer and the members of the

company can observe that might help pinpoint the origin and identify the cause.

The module also reinforces basic concepts fire officers have previously learned by examining fire behavior and applying those principles to fire cause determination.

II. Observations: Responding and Arriving (15 minutes)

A. Unusual information

Observe information that may be unusual or unlikely, or observations of persons leaving the scene, such as:

- Dispatch information:
  - Who reported the fire?
  - When was it reported?
  - Were there any unusual background noises?
  - Was the address the exact location of the fire?
  - Did the caller appear calm or excited?
- Weather conditions:
  - Temperature and humidity;
  - Wind direction and speed; and

Slide 7-6: Dispatch Alarm Center

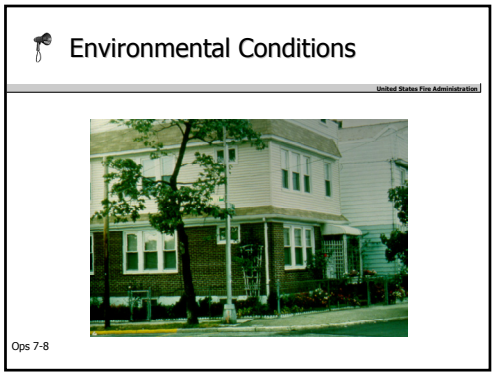
- Precipitation:
  - Rain, freezing rain, sleet;
  - Snow; or
  - Fog.
- Time of day and day of week:
  - Was the timing arranged to slow the response?
  - Was availability of resources limited (10:00 a.m. versus 8:00 p.m.)?
  - Was protection afforded under cover of darkness?
- Response route delays:
  - Train at grade crossing,
  - Drawbridge open,
  - Rush hour or sports event traffic, or
  - Construction.
- Vehicles or pedestrians leaving scene:
  - People curious about fires who go **toward** the scene; or
  - Unusual driver behavior, for

example, driving with lights off, running a stop sign, or crouching down in the car.

- Smoke:
  - Distantly visible?
  - Color?
  - Rate of rising?
  - Density?
- Flames:
  - Visibility,
  - Color, and
  - Intensity (major involvement).

Slide 7-7: Flames

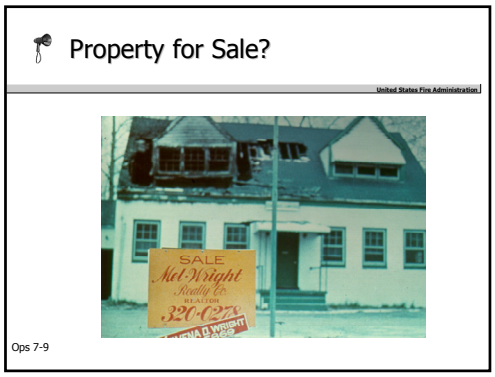
Slide 7-8: Environmental Conditions



B. Environmental conditions

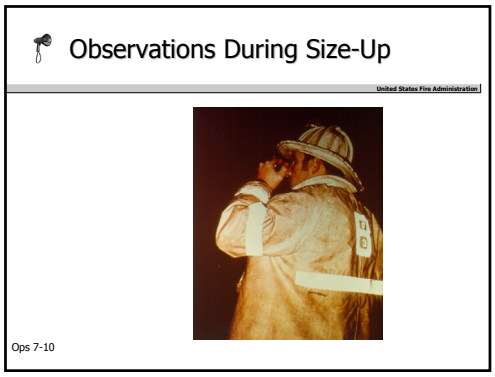
- Is the fire in an area prone to a great deal of fire activity?
  - Similar to other fires in area?
  - Timing about the same as other fires in area?
- Is it an area with highly transient occupants?

Slide 7-9: Property for Sale?



- Is it an area of high crime activity (for example, drugs)?
- Is the property for sale?
  - How long has it been for sale? (The condition of the "For Sale" sign might be a good indication of the length of time the property has been on the market.)
  - Is the building a residential structure in an area zoned for commercial?
  - Would the property be worth more without the structure?
  - Is the property condemned?
- Is the property located in an area where people are not normally out and about at the time of the fire?
  - Warehouse area?
  - Industrial park?
  - Waterfront or riverfront?
  - Depressed area?

Slide 7-10: Observations During Size-Up



III. Observations During Size-Up (20 minutes)

A. Occupants

The officer in charge should collect information on the occupants.

- Is their dress normal for the time of the day?
- Did the family members seem to have special items with them?
  - Toys or pets,
  - Fur coats and jewelry, or
  - Insurance policy and other papers.
- Was their behavior normal?
  - Excessive calmness may result from shock or from a planned event.
  - Excitement or incoherence can indicate apprehension.
- Were there signs of a narrow escape or an attempt to fight the fire?
  - Burns or singed hair?
  - Soot around the mouth?

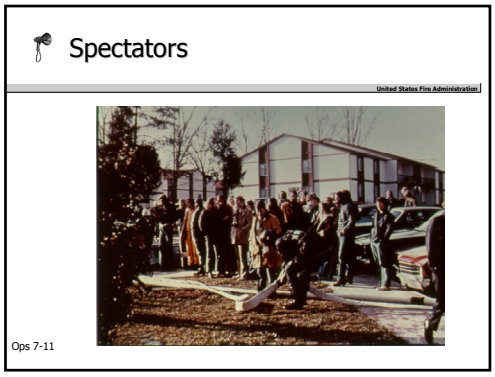
* Carbon stains on clothing?

- Did they try to help by telling where the fire was located?

Instructor Notes:

Ask students to supply other examples from their experiences.

Slide 7-11: Spectators

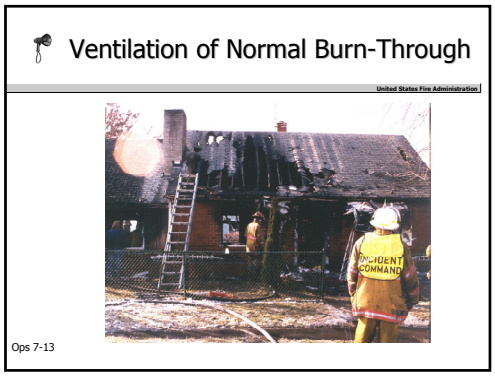


B. Spectators

- Is there anyone present who had been seen at other fires?
- Is anyone acting strangely?
  * Alone in the shadows or
  * Shouting obscenities.
- Is anyone overly anxious to assist with fire suppression?
- Is anyone hindering firefighting activities?
  * Placing trash containers over hydrants or
  * Parking vehicles to block hydrants.

Slide 7-12: Fire Location on Arrival

Slide 7-13: Ventilation of Normal Burn-Through

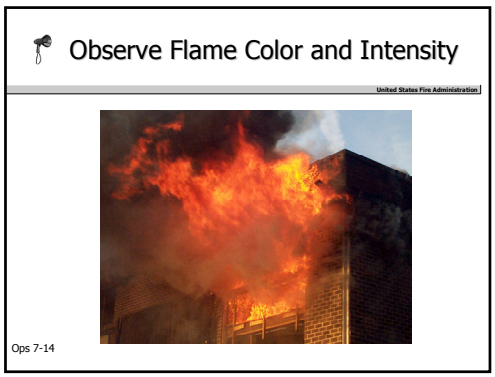


C. Structure and location of fire

- What is the type of structure on fire?
- Does the fire spread seem normal for this type of building?
  - Vertical fire spread in a fire-resistive building is usually slow.
  - Vertical fire spread on dry wooden porches is usually fast.
  - Is this fire very different from others seen before for this type of structure?
- What is the fire location?
  - On what level/floor is the fire?
  - Had the fire spread to other areas before firefighters arrived?
  - Had the fire been burning long before arrival?
  - Was there a delayed alarm?
  - Could an accelerant have been used?
  - Are structural members weakened or collapsed?

* Are there any signs of occupant attempts to escape?
  - Ladders against building,
  - Escape ladders hanging from the windows,
  - Broken windows, or
  - Ropes or bed sheets tied together.
* Are there exposures involved?
  - Which side of the structure?
  - Proximity to fire?

Slide 7-14: Observe Flame Color and Intensity



D. Flame and smoke characteristics

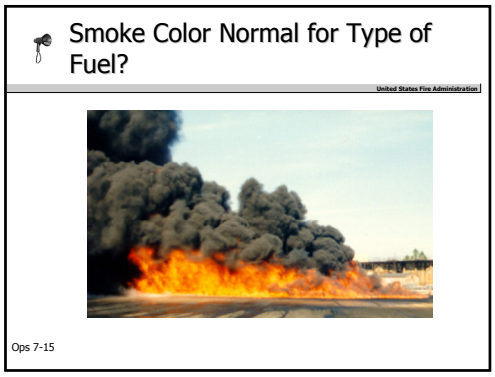
- Is the flame color normal for the material burning?

Instructor Notes:

Ask the class to tell the flame colors for the following substances:

- **Wood:** yellow to red
- **Cloth:** yellow to red
- **Gasoline:** yellow to white
- **Vinyl siding:** orange to red

Slide 7-15: Smoke Color Normal for Type of Fuel?



- **Tires:** dark red

- Is the smoke color normal for the material that is burning?

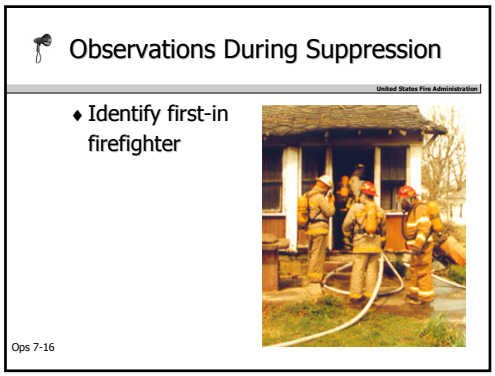
Instructor Notes:

Ask the class to provide the smoke colors for the following substances:

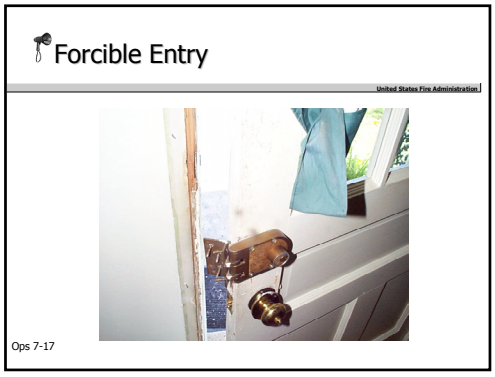
- **Wood:** gray to brown
- **Cloth:** gray to brown
- **Gasoline:** black
- **Vinyl siding:** black
- **Tires:** heavy black

- What is the intensity of the smoke?
  - Light and puffy?
  - Heavy and pushing?
- Is smoke showing in areas remote from the fire location?
  - Modifications to building?
  - Wood-frame/balloon construction?
  - Doors or windows open?

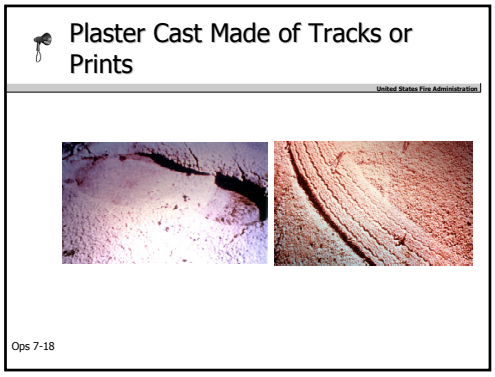
Slide 7-16: Identify First-In Firefighter



Slide 7-17: Forcible Entry?



Slide 7-18: Plaster Cast Made of Tracks or Prints

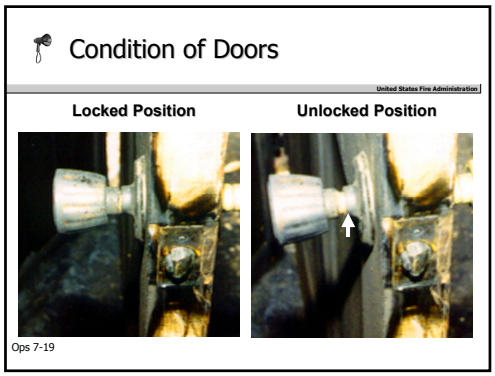


IV. Observations During Suppression Activity (15 minutes)

A. Entry

- Is forcible entry necessary?
- Is it normal for doors to be unlocked or open?
- Are there any signs of forced entry before firefighter arrival?
- Who performed entry operations?
- How many doors and windows were forced?

Slide 7-19: Condition of Doors



- Were any intrusion alarms activated during entry?
- Were any guard animals present?
- Were other security devices in use?

B. Location of fire

- Was the fire found where it was expected?
- Was there anything unusual about the location?
- Was any evidence of unusual fire travel found?
- Was there any evidence of trailers?
- What color were the flames and smoke?
  - Was the color normal for the material burning?
  - Was there anything unusual about the flames or smoke?
- Has fire spread from its area of origin (greatest damage)?
- Was the spread connected to the

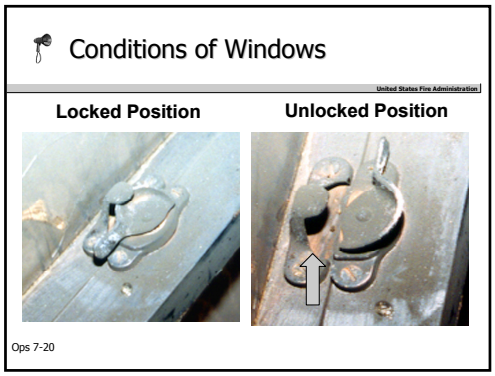
area of origin by one of the three normal means?

- Was there any evidence of separate fires?

C. Difficulty of extinguishment

- Did fire darken when the water was applied?
- Did the amount of water normally used for similar fires extinguish the fire?
- Were there any unusual reactions when the water was applied?
- Did fire rekindle as soon as the water application ended?

Slide 7-20: Conditions of Windows



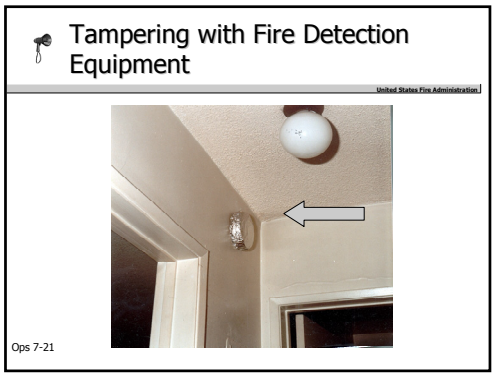
D. Unusual observations

- Were the windows or doors intentionally covered to hide fire?
  - Shades completely drawn at 10:00 a.m. may be unusual.
  - This may be explained later by owner/occupant.
- Were means of egress blocked or locked?

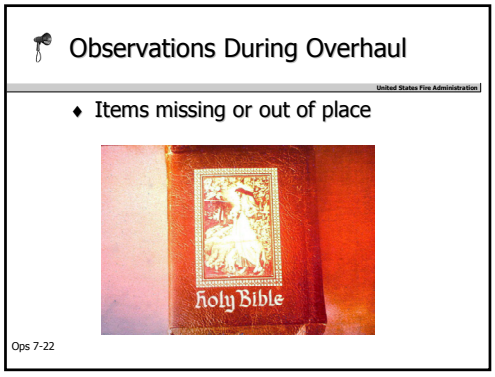
  Occupants who just escaped may not have locked a door behind them.

- Was any fire detection or suppression equipment present?
  - Was the smoke/heat detection equipment functional and working?
  - Was suppression equipment functional and working?
  - Was there any evidence of tampering with the equipment?

Slide 7-21: Tampering with Fire Detection Equipment



Slide 7-22: Observations During Overhaul

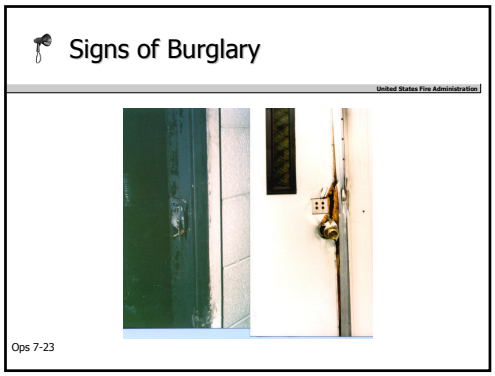


V. Observations During Overhaul (20 minutes)

A. Items missing or out of place

- Items of sentimental value (for example, a Bible, family photos, statues, paintings, or china); or
- Documents (for example, business records, birth certificates, marriage licenses, or diplomas).

Slide 7-23: Signs of Burglary



B. Unusual prefire signs of activity

Instructor Notes:

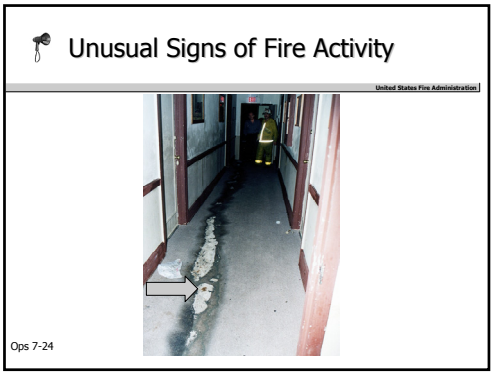
Point out that fire can be a convenient way to cover actions such as theft or breaking and entering.

- Signs of burglary:
  - Rifled drawers,
  - Opened or overturned files,
  - Papers or files strewn about,
  - Broken furniture, or
  - Forced entry into closets.
- Were pictures removed from walls?
- Were clothes removed from closets and dressers?
- Was anything unusual placed on the beds?
  - Clothing of a spouse or lover;
  - Treasured items of a spouse or someone else (for example, photos, records, tapes or videos, or collectibles); or
  - Sports or hobby equipment, including trophies.

Instructor Notes:

Ask students if they have other examples based on their experiences.

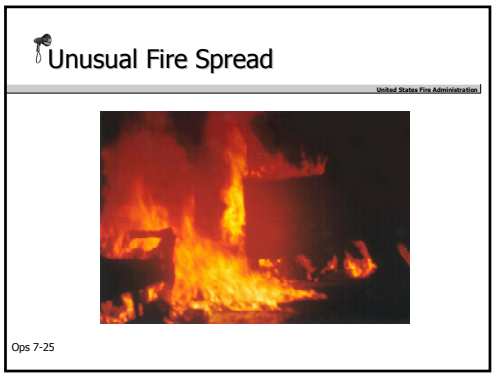
Slide 7-24: Unusual Signs of Fire Activity



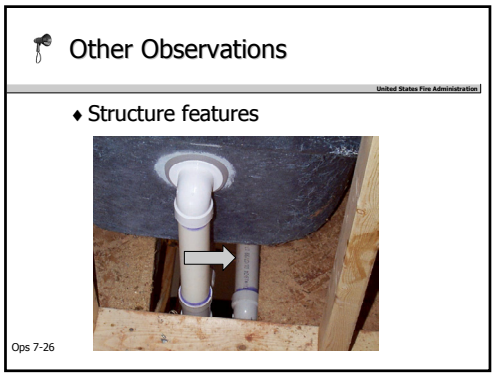
C. Unusual signs of fire activity

- Were there any unusual burn patterns?
  - Running type,
  - Holes burned downward, or
  - Narrow or tapered "V" patterns.
- Were there any unusual odors?
- Was there any significant ceiling damage?
  - Does it correspond with fire damage below?
  - Is it consistent with what should have been burning in the area?
- Was furniture or equipment moved or placed conveniently for a fire?
  - Pulled close together,
  - Piled up, or

Slide 7-25: Unusual Fire Spread



Slide 7-26: Other Observations



* Drawers opened.

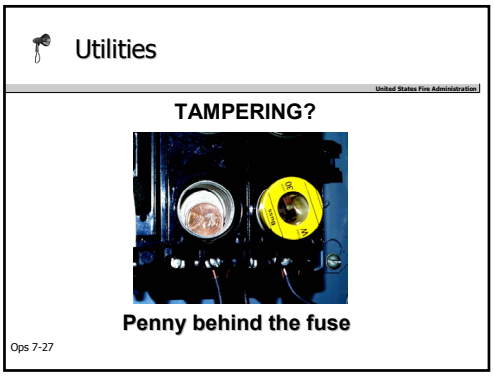
- Was there evidence of items that may have caused the fire or spread the fire?
  * Items not where they should be (for example, flammable liquid containers or timing devices);
  * Items missing or moved that should be present (for example, covers over electrical outlets and switches);
  * Doors braced in an open position; or
  * Windows open on a cold day.

D. Other observations

- Building features that may have allowed fire or smoke to spread:
  * Open stairways;
  * Vents (clothes dryer, kitchen, bathroom);
  * Pipe or electrical shafts;
  * Heat ducts; or
  * Laundry chutes; or
- Abnormalities that may have

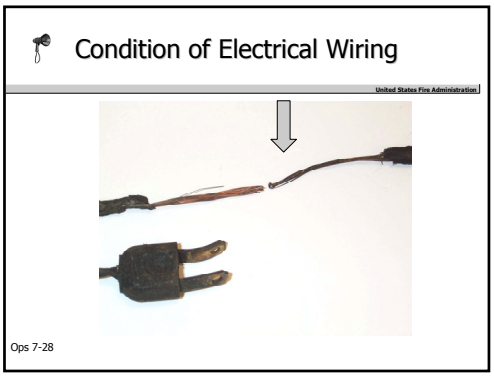
caused fire spread (like fans operating).

Slide 7-27: Utilities



- Utilities:
  - Electrical panel:
    - Fuses or breakers,
    - Condition of protection, or
    - Signs of tampering?
  - Gas service: on or off?
    - Natural gas?
    - Propane or butane?
    - Did the fire department turn it off?
  - Electrical equipment in the area of fire origin:
    - Signs of malfunction?
    - Signs of overheating?
    - Cause or a "victim" of the fire?
- Behavior of occupants or owners:
  - Eager to enter the structure after the fire was under control?

Slide 7-28: Condition of Electrical Wiring



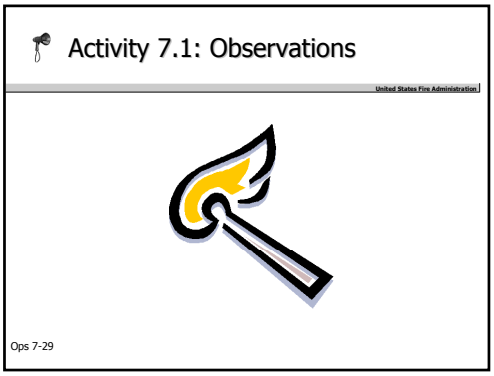
* Agreeable to being escorted by a firefighter?

* Go immediately to the area that could be the area of fire origin?

Instructor Notes:

Ask the students to give examples from their experiences.

Slide 7-29: Activity 7.1: Observations



VI. Activity 7.1: Observations (30 minutes)

Instructor Notes:

Refer students to Activity 7.1, Observations, in their student manuals.

Activity 7.1:
Observations

Time: 30 minutes

Purpose:

To give students the opportunity to reinforce their observation skills.

Materials:

- Visuals
- Student Activity Worksheets (provided in the student manuals)

Directions:

1. This is a large-group activity. Five possible different scenarios are used. Show the slides one at a time and then ask the group to make observations.

2. Elicit answers that focus on at least the following information:

    - The type of construction,

    - The location and intensity of the fire,

    - The color and size of the flame and smoke, and

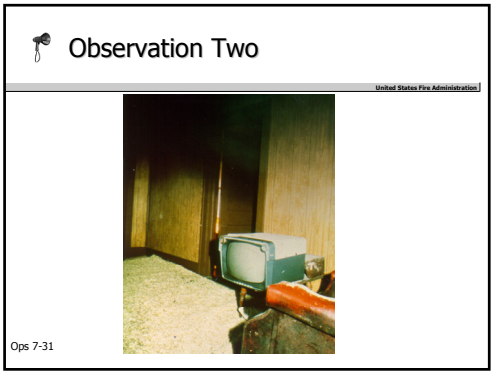
    - The exposures affected.

Slide 1 (7-30): Two-story dwelling with addition

Responses:

- Two-story, wood-frame (balloon-type) construction; it appears to be a single-family dwelling.
- Heavy fire involvement on the first floor.
- Fire appears to have burned longer in the attic over the one-story addition since it appears to be burning through the roof.
- Flames are brilliant orange in the one-story portion and red on the first floor of the two-story portion.

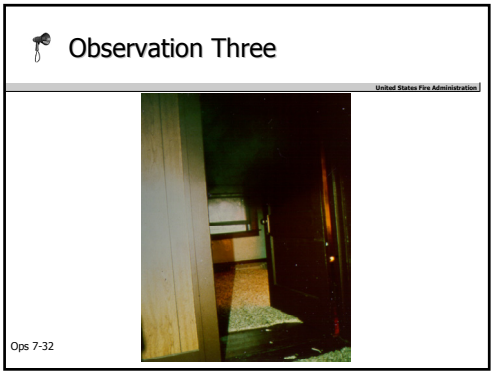
Slide 2 (7-31): Interior view of a dwelling, smoke and fire



Responses:

- Light smoke is coming from the doorway by the television.
- There appears to be a fire low to the floor behind the door.
- There does not appear to be much heat generated.
- The area directly adjacent to door is somewhat protected from the smoke.

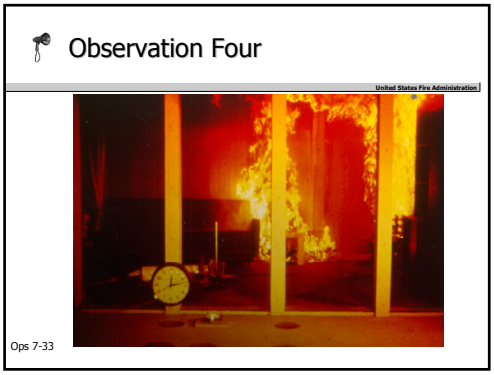
Slide 3 (7-32): Interior view of a dwelling, smoke and fire



Responses:

- Light smoke coming from the door.
- The window on the outside wall of the fire room is partially open.
- The fire appears to be low to the floor and behind the door.
- There appears to be little heat buildup.

Slide 4 (7-33): Inside the dwelling, two fires



You are an officer at a fire in a building under renovation and are on the fire suppression line. What do you observe?

Responses:

- There are two separate fires.
- There is no connection between the two fires at floor level.
- The second fire could have resulted from burning material dropping down from above.
- Flames are rolling over the ceiling.
- The fire in the corner appears more intense than the one adjacent to the sofa.
- There appears to be a radiant heat buildup as the cushion of the sofa is smoking.

Slide 5 (7-34): Two-story, wood-frame dwelling, one room on fire

Responses:

- This is a two-story building of wood-frame (balloon-type) construction.
- Fire is showing in one window on the second floor.
- The window in the adjacent room is missing, and light smoke is showing.
- Only one room appears to have fire involvement.
- Electrical service is disconnected.

Summary:

The things noted during the early phases of the incident—from dispatch through overhaul—can be extremely helpful in making a determination of fire origin and cause.

Activity 7.1:
Observations
Student Activity Worksheet

Time: 30 minutes

Purpose:

To give you the opportunity to reinforce your observation skills.

Directions:

1. This is a large-group activity. Your instructor will show a set of slides and ask for observations.

2. Your answers should focus on the following information:

    - The type of construction,
    - The location and intensity of the fire,
    - The color and size of the flame and smoke, and
    - The exposures affected.

3. Write your observations in the blanks provided.

Observation one: two-story dwelling with addition

_____

_____

_____

_____

_____

Observation two: interior view of a dwelling, smoke and fire

_____

_____

_____

_____

_____

Observation three: interior view of a dwelling, smoke and fire

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Observation four: inside the dwelling, two fires, building under renovation

_____

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Observation five: two-story, wood-frame dwelling; one room on fire

_____

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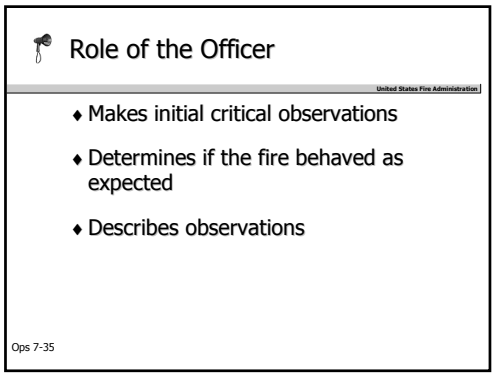
Notes:

Slide 7-35: Role of the Officer



VII. Role of the Officer (10 minutes)

A. Make initial critical observations.

- As one of the first at the scene of a fire, the officer may see things critical to determining the area of fire origin and the fire cause.

Instructor Notes:

The students should be able to suggest examples. If they cannot, use those provided here.

- Examples:
  - Color of the flames or smoke,
  - Location of the heaviest fire, and
  - Whether flashover has occurred.

B. Determine if the fire behaved as expected.

- Careful observation will help discriminate between normal and abnormal fire growth and behavior.

Instructor Notes:

Ask the class for examples of critical discrimination at the fire scene. The more

experienced firefighters should be able to suggest some examples. If they cannot, use the following examples.

- Examples of critical discrimination:
  - The fire reacted violently to water.
  - The fire appeared to spread rapidly from one floor to another with no combustible material in between.
  - There was excessive heat damage to the structural elements with limited combustible materials present.

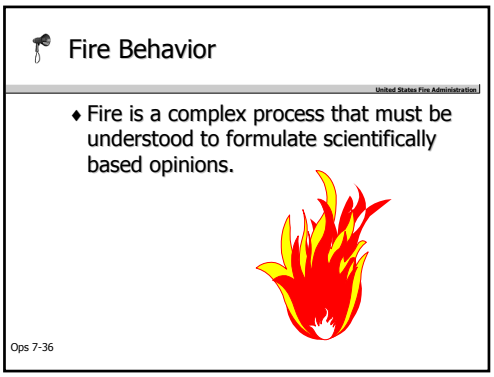
C. Describe observations.

- Carefully noting observations and later describing them to a fire investigator or jury may be critical to a successful fire investigation or criminal prosecution.
- Examples of critical observations:
  - Explaining to a jury observations on how the fire reacted to water;
  - Explaining to a fire investigator that the fire was in the smoldering phase upon arrival, and a backdraft

occurred soon after arrival; and

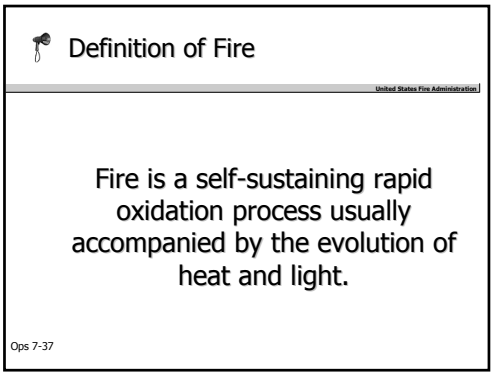
* Explaining to a fire investigator how ventilation tactics affected normal fire spread and caused the unusual fire travel.

Slide 7-36: Fire Behavior



VIII. Fire Behavior (40 minutes)

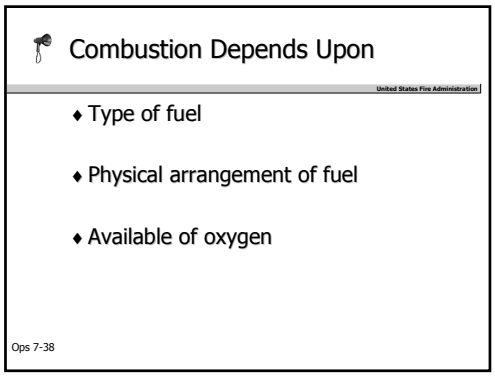
Slide 7-37: Definition of Fire



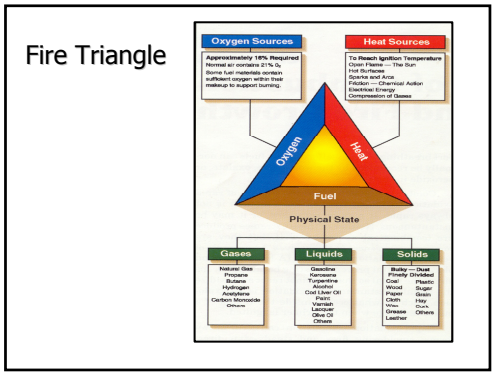
A. Basic fire concepts

- Definition of fire:
  * Fire is a self-sustaining rapid oxidation process usually accompanied by the evolution of heat and light.
  * It produces toxic gases that are products of combustion.

Slide 7-38: Combustion



Slide 7-39: Fire Triangle



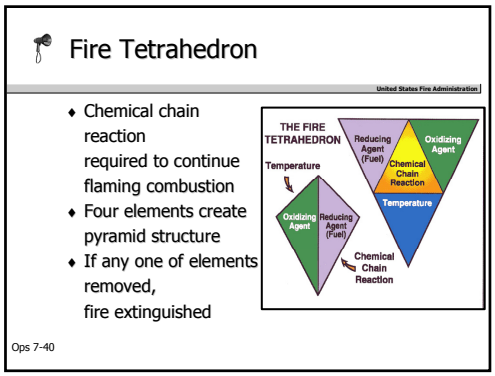
* The amount of heat, the color of the light, and the toxicity of the products of combustion depend upon three factors:
  - The type of fuel,
  - The physical arrangement of the fuel, and
  - The oxygen available to support combustion.

- Principles of combustion
  * Fire triangle elements:
    - **Fuel** in the form of a gas can change from a solid or liquid to a gas;
    - **Sufficient heat** to vaporize the material and ignite the vapor; and
    - **Oxygen** above the minimum levels needed to sustain combustion.

      Air is an oxidizer.

      Air is about 21 percent oxygen.

Slide 7-40: Fire Tetrahedron



* Fire tetrahedron

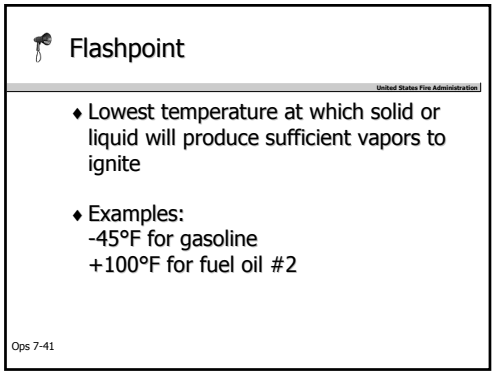
Instructor Notes:

This concept and figure state the relationship of the fourth element (uninhibited chain reaction) to the other three and its impact on fire growth and extinguishment.

- The fourth element is the uninhibited chain reaction that allows for the continuous heating of the fuel mass and the continuous production of flammable gases, which then are ignited by the flame.

- Some extinguishing powders help insulate and isolate the molecules of the burning product and retard the burning process.

Slide 7-41: Flashpoint



B. Flashpoint

Flashpoint is the minimum temperature required for a fuel to produce an ignitable vapor.

- Gasoline has a flashpoint of about -45°F.

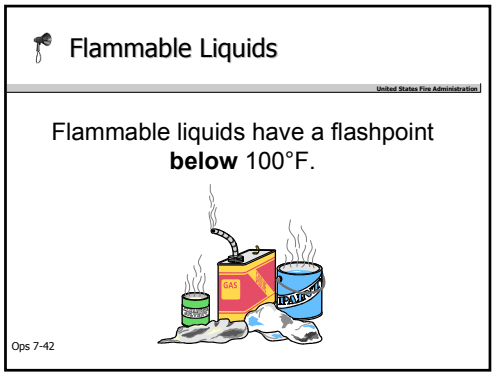
- Fuel oil #2 (home heating oil) has a flashpoint of 100°F or greater.

Instructor Notes:

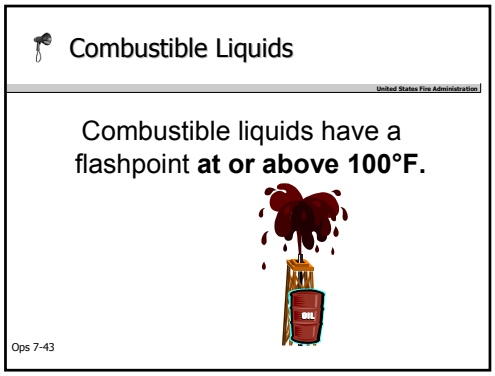
Ask a student to contrast fuel oil with gasoline and state the implications.

The flashpoint of a product is used in fire codes to determine appropriate storage requirements and containers. Fuel oil often is stored in 275-gallon tanks in basements of dwellings. Gasoline should not be stored in this manner.

Slide 7-42: Flammable Liquids



Slide 7-43: Combustible Liquids



C. Flammable and combustible liquids

- The flashpoint of a product determines whether the product is classified as flammable or combustible.
  - A flammable liquid has a flashpoint below 100°F.
  - A combustible liquid has a flashpoint of 100°F or above.

- The ability to discriminate between flammable and combustible is critical.

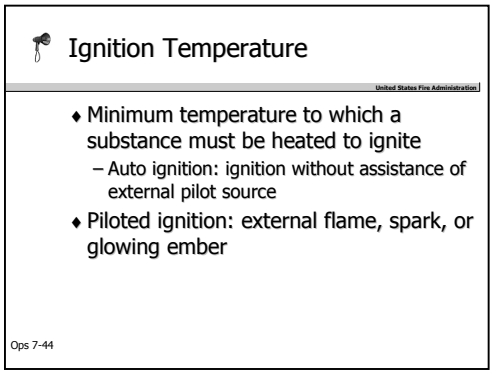
Instructor Notes:

Ask the class for an example or use the following one.

A building owner informs you that he spilled fuel oil on the cellar floor near a gas burner, and it exploded into flame.

Is he telling the truth?

Slide 7-44: Ignition Temperature

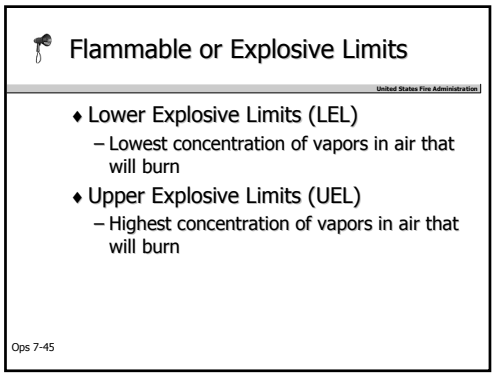


D. Ignition temperature

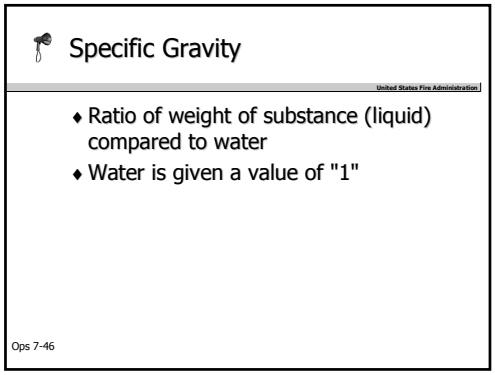
- The minimum temperature required to ignite the material.
- Auto-ignition is the temperature at which a product will ignite without the presence of an open flame.
- Common ignition temperatures (Fahrenheit):

Newspaper	392°
Kerosene	410°
Paraffin	473°
Gasoline	650°
Ethyl alcohol	689°
Acetone	869°

Slide 7-45: Flammable or Explosive Limits



Slide 7-46: Specific Gravity



E. Flammable or explosive limit

The flammable or explosive limit is the concentration level of fuel to the amount of air available that is required for combustion.

- Most flammable or combustible liquids have relatively close flammable limits.
- Other products have a wider range of flammable limits.
- Common flammable limits:

Gasoline	1.4 to 7.6 %
Kerosene	0.7 to 5.0 %
Ethyl alcohol	3.3 to 19.0 %
Acetylene gas	2.5 to 99.9 %

F. Specific gravity

The specific gravity of a product is the weight of the product compared to the weight of water (1.0).

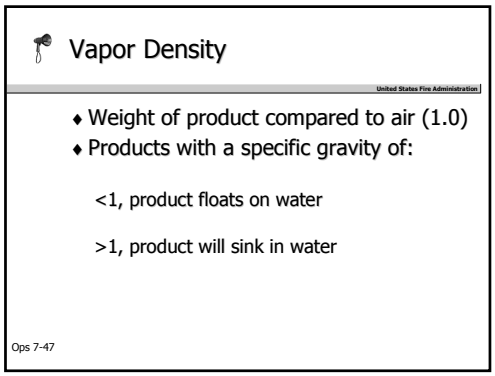
- Products with a specific gravity of less than 1 float on water:

Gasoline	.73
Acetone	.93

- Products with a specific gravity of more than 1 sink in water:

Asphalt	1.39
Brick	1.79

Slide 7-47: Vapor Density



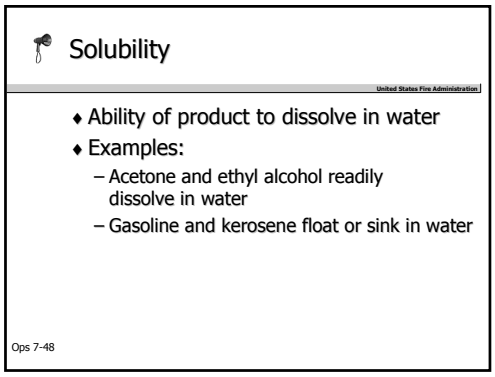
G. Vapor density

Vapor density is the weight of the product compared to air (1.0).

- Products with a vapor density of less than 1 will rise (natural gas is 0.8).
- Products with a vapor density of more than 1 will settle to low-lying areas.

Gasoline	3.5
Acetone	2.0
LP Gas	1.6

Slide 7-48: Solubility

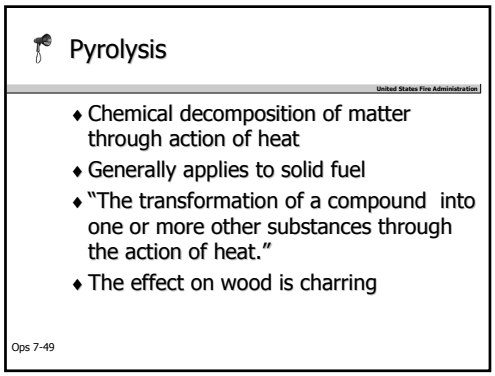


H. Solubility

Solubility is the ability of a product to dissolve in water.

- Some products, such as acetone and ethyl alcohol, may readily dissolve in water.
- Others, such as gasoline and kerosene, will simply float on the top or sink to the bottom of the water.

Slide 7-49: Pyrolysis

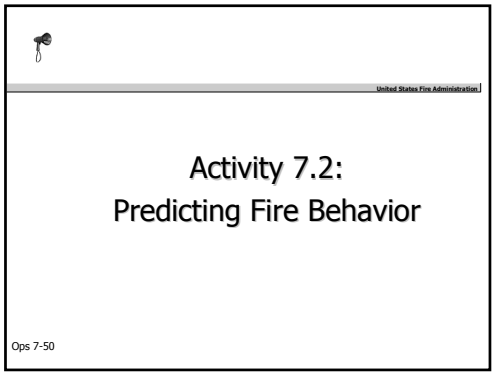


I. Pyrolysis

Pyrolysis is the chemical decomposition of matter through the action of heat.

- The process begins when fuel is heated and continues through specific stages:
  - Various gases form during decomposition.
  - The combustibility of gases increases decomposition.
  - Decomposition moves deeper into material and charring begins.
  - Gases reach lower limit and ignite with outside ignition or heat source.

Slide 7-50: Activity 7.2: Predicting Fire Behavior



IX. Activity 7.2: Predicting Fire Behavior (30 minutes)

Instructor Notes:

Instruct the students to turn to Activity 7.2, Predicting Fire Behavior, in their student manuals.

Activity 7.2:

Predicting Fire Behavior

Time: 30 minutes

Purpose:

To apply the principles of fire behavior to a simulated emergency response. From the scenario, the students will be able to make predictions about fire behavior.

Directions:

1. Divide the students into small groups. Ask each group to appoint a spokesperson to report the group's findings at the end of the activity.

2. Tell the students to read the scenario and answer the questions.

3. After 15 minutes, ask one or more groups to report their answers.

4. Ask all groups whether their answers were similar to answers reported. If all students are in agreement and the answers are correct, it is not necessary for each group to repeat the answers.

Scenario:

The temperature is 62°F on a clear day. There is no measurable wind and the time is 1830 hours.

A tank truck carrying 8,000 gallons of gasoline was coming down a hill into town when the driver lost control of the vehicle. The truck overturned on Main Street and spilled part of its contents. The contents ran down Main Street and into the basement of the post office. The post office had a gas-fueled hot water heater in the basement. Soon afterward, there was an explosion and three buildings along with the truck were involved in fire.

As you approach the scene, you observe a large cloud of heavy black smoke and dark red flames. The exterior walls of two dwellings and the entire one-story post office are involved. The post office walls are partially blown from their foundation.

During extinguishment, you observe that the burning gasoline is floating down the street on top of the water. You also are informed that gasoline vapors in the storm sewer are above 40 percent but have not ignited.

No one was injured during the incident.

Activity 7.2:
Predicting Fire Behavior
Instructor Answer Key

Questions:

1. Is the gasoline at or above its flashpoint?

   Answer: Above its flashpoint of -45° F.

2. Is the gasoline at or above its ignition temperature?

   Answer: Below its ignition temperature of 650° F.

3. Is the gasoline vapor in the storm sewer within its flammable limits?

   Answer: No, it is above its flammable limits of 1.4 to 7.6 percent.

4. Why did the gasoline float on top of the water?

   Answer: Its gravity is .73, which is lighter than water.

5. Why did the gasoline vapors collect in the storm sewer down the street in an area lower than the leaking tank truck?

   Answer: Its vapor density is 3.5, which is heavier than air, causing the vapors to settle in low areas.

6. What could have been the ignition source for the spilled gasoline?

   Answer: The hot water heater in the basement of the post office.

7. What evidence may indicate that the fire may have started in the basement of the post office?

   Answer: The walls of the post office were partially off their foundation, indicating that there was an explosion inside the building. The explosion would, in turn, point to

a build-up of gasoline vapor in the basement before it ignited. Gasoline probably entered the post office before it was ignited.

8. If the tank had been loaded with diesel fuel, would you have expected the same results?

   Answer: No, the product would have been below its flashpoint and would not have ignited.

Summary:

It is important that fire officers understand the critical fire behavior factors that may affect a fire and determining its cause.

Activity 7.2:
Predicting Fire Behavior
Student Activity Worksheet

Time: 30 minutes

Purpose:

To apply the principles of fire behavior to a simulated emergency response. From the scenario, you will be able to make predictions about fire behavior.

Directions:

1. Your instructor will divide the class into small groups. Appoint a spokesperson to report your group's findings at the end of the activity.

2. Read the scenario and answer the questions.

3. After 15 minutes, you will report your answers.

Scenario:

The temperature is 62°F on a clear day. There is no measurable wind and the time is 1830 hours.

A tank truck carrying 8,000 gallons of gasoline was coming down a hill into town when the driver lost control of the vehicle. The truck overturned on Main Street and spilled part of its contents. The contents ran down Main Street and into the basement of the post office. The post office had a gas-fueled hot water heater in the basement. Soon afterward, there was an explosion, and three buildings, along with the truck, were involved in fire.

As you approach the scene, you observe a large cloud of heavy black smoke and dark red flames. The exterior walls of two dwellings and the entire one-story post office are involved. The post office walls are partially blown from their foundation.

During extinguishment, you observe that the burning gasoline is floating down the street on top of the water. You also are informed that gasoline vapors in the storm sewer are above 40 percent but have not ignited.

No one was injured during the incident.

Questions:

1. Is the gasoline at or above its flashpoint?

_____

_____

_____

2. Is the gasoline at or above its ignition temperature?

_____

_____

_____

3. Is the gasoline vapor in the storm sewer within its flammable limits?

_____

_____

_____

4. Why did the gasoline float on top of the water?

_____

_____

_____

5. Why did the gasoline vapors collect in the storm sewer down the street in an area lower than the leaking tank truck?

_____

_____

_____

6. What could have been the ignition source for the spilled gasoline?

_____

_____

_____

7. What evidence may indicate that the fire may have started in the basement of the post office?

_____

_____

_____

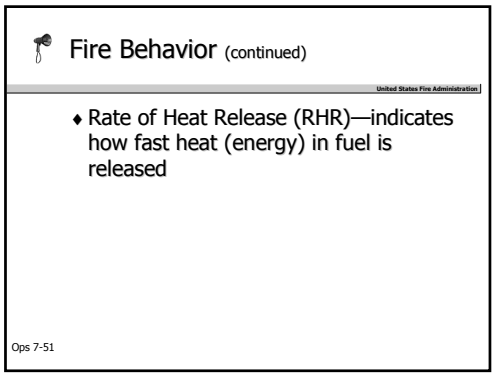
8. If the tank had been loaded with diesel fuel, would you have expected the same results?

_____

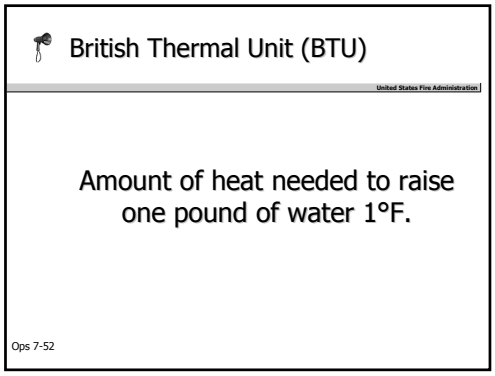
_____

_____

Slide 7-51: Fire Behavior (continued)



Slide 7-52: British Thermal Unit (Btu)



X. Fire Behavior (continued) (40 minutes)

A. Rate of heat release

- The heat released from a burning material may correlate directly to the amount of resulting fire damage.
- Today the fire load (amount of heat produced) has altered fire behaviors dramatically, so that fire patterns may appear different.
  - Heat is measured in British thermal units (Btus).
  - One Btu is the amount of heat required to raise one pound of water one degree Fahrenheit at a temperature of 60 degrees Fahrenheit.

Instructor Notes:

The Btus generated from a single piece of furniture with foam padding may cause severe fire damage.

B. Reaction of fire to water application

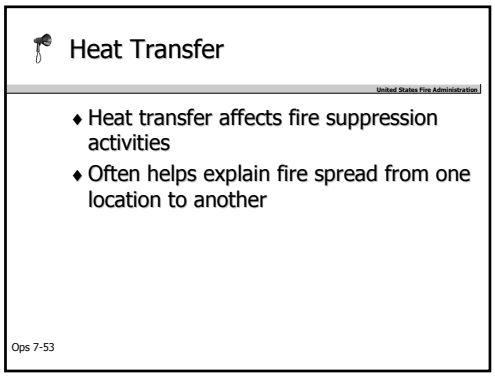
- The initial fire attack team is in the best position to observe the reaction of the fire when water is applied.
- If the initial attack team is

unsuccessful in extinguishing the fire, some unusual circumstance may have caused something other than a normal fire load.

- Water hitting a pool of flammable liquid may cause the liquid to splatter and spread.

- Water contacting burning metals may cause a violent reaction with brilliant white flame.

Slide 7-53: Heat Transfer

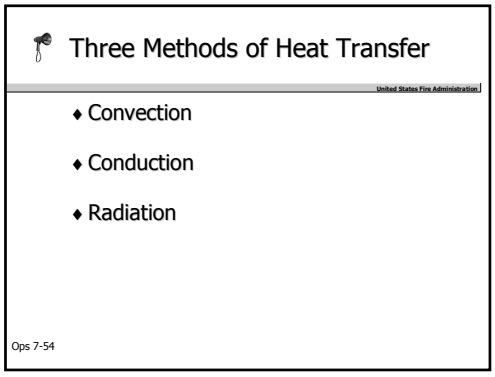


C. Heat transfer and temperature factors

- Heat transfer from one location to another affects fire suppression activities.

- It also explains why a fire often spreads from one location to another the way it did.

Slide 7-54: Three Methods of Heat Transfer



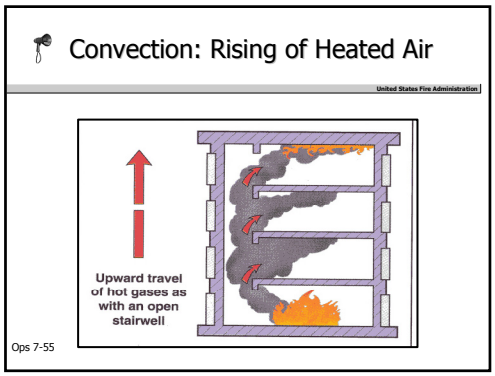
- Three methods of heat transfer:

  * Convection,

  * Conduction, and

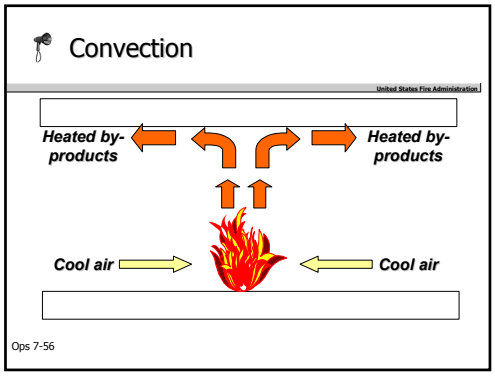
  * Radiation.

Slide 7-55: Convection



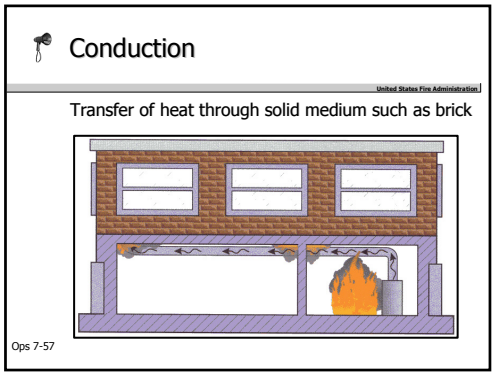
* Convection is the rising of heated air.

Slide 7-56: Convection (continued)



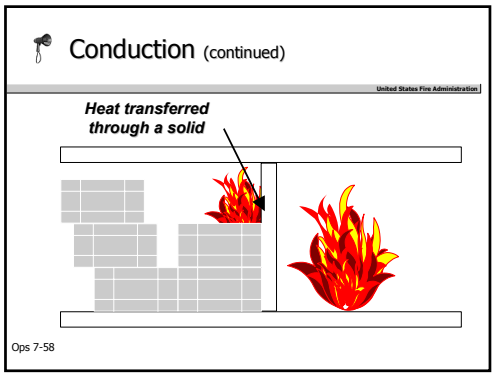
The air at the top or a room is usually warmer than the air near the floor.

Slide 7-57: Conduction



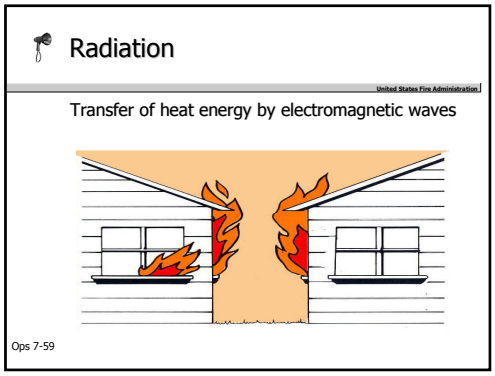
* Conduction is the transfer of heat through a solid medium such as a brick.

Slide 7-58: Conduction (continued)



- When heat is applied to one side of a brick, the brick will warm, and the opposite side will be heated.
- If this brick is in a fireplace and too close to combustible materials, it could cause a fire.

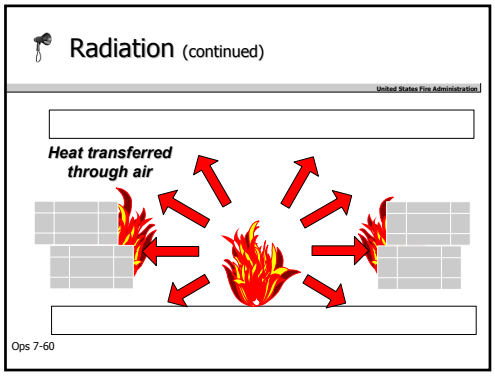
Slide 7-59: Radiation



* Radiant heat is energy waves that are transmitted through the air.

  The person sitting in front of a roaring fireplace feels radiant heat.

Slide 7-60: Radiation (continued)



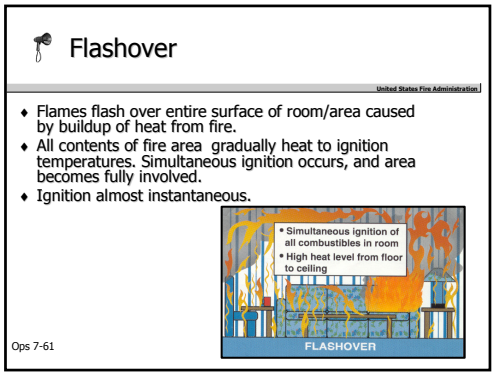
- Observing fire spread may be vital to reconstructing where the fire started and how it traveled to another location.
- Certain fire travel predictions also can be made for some classifications of buildings.

Instructor Notes:

A wood-frame balloon-constructed building has a fire that starts in the basement, which then appears in the attic. This may be a result of convected heat traveling up through open wall cavities to the attic level and igniting combustible materials.

Many fire officers may assume that the second fire was the work of an arsonist.

Slide 7-61: Flashover



D. Flashover

- The stage of fire when a room or other open area becomes heated such that flames flash over the entire surface simultaneously.
- As a fire starts, convection carries the heated gases upward and outward from the fire.
- This results in thermal stratification which may cause other combustibles in the room to heat to their ignition temperature.
- At this time, in 15 to 30 seconds, the entire upper portion of the room appears to ignite.
- Flashover can occur while firefighters are in the room.
- Because of the amount of heat and smoke generated in such a few seconds, it may appear that a

flammable liquid was present.

- This phase of burning often is reported by observers as an explosion.

- Firefighters may feel strongly that a flammable liquid was used because of the speed of full fire involvement.

- Careful examination should help discriminate between flashover effects and flammable liquid fires:

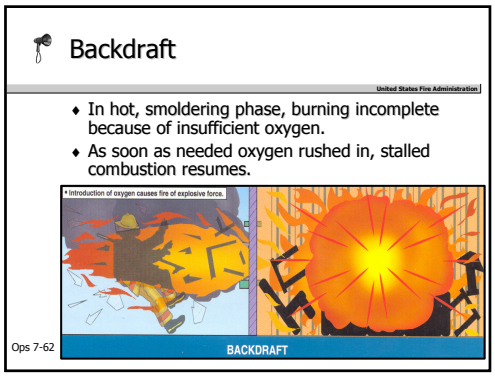
  * Burning over top of surface of materials;

  * Lack of normal fire spread from point of fire origin;

  * Lack of accelerant residue; and

  * Demarcation line of burning or high heat damage appears to be consistent around the room. (The demarcation line is the line that separates the burned area from the unburned area or the areas of high heat damage form those areas of light or no heat damage.

Slide 7-62: Backdraft



E. Backdraft

- The phenomenon resulting from:
  - A structure's remaining closed during a fire;
  - Limited amounts of air having entered the structure;
  - The fire's consumption of large amounts of oxygen, thus depleting the oxygen supply and causing the fire to smolder; and
  - The sudden supply of oxygen.
- Backdraft is a smoke explosion.
- The fire continues to produce large amounts of heat and carbon monoxide.
- Carbon monoxide (flammable limits of 12.5 to 74.0 and ignition temperature of 1,128°F) can become a highly volatile fuel.
- The missing component of the fire triangle is the oxygen.
  - A window can break and allow oxygen to enter.
  - A person can open a door and allow oxygen to enter.
  - The fire can burn through the

structure and allow oxygen to enter.

- The seat of the fire or the lowest level of burning is a critical factor in the backdraft potential.

  * The area above the fire will be in a positive pressure mode.

  * If an opening is made, the heated fire gases will push outward.

  * The area below the fire will be in a negative pressure mode.

    If an opening is made, the air will go rushing in.

  * When a fire burns through the roof or exterior walls and fresh oxygen is provided, the fire usually returns to a free burning fire.

  * Occasionally it will occur in the negative pressure area (below the seat of the fire), and a backdraft may occur.

  * Witnesses may report that the building was just smoking and then it exploded.

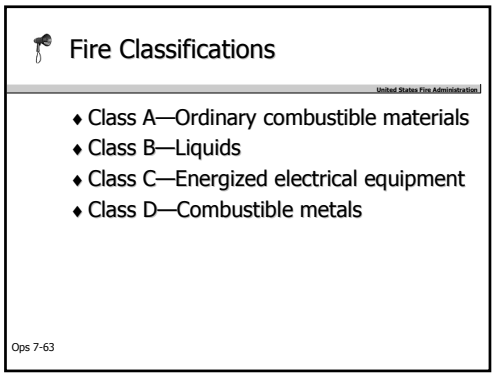
- Careful examination should help discriminate between a backdraft and an explosion.

  * Window glass broken just

before or during the backdraft will normally be heavily carbonized on the inside.

* The backdraft will not normally cause the localized structural damage anticipated from other types of explosions.

Slide 7-63: Fire Classifications



F. Fire Classifications

- Class A—ordinary combustible materials such as wood, paper, cloth (natural fiber or synthetic fiber);
- Class B—flammable or combustible liquids;
- Class C—electrical energized equipment such as an electric motor when it is operating; and

Instructor Notes:

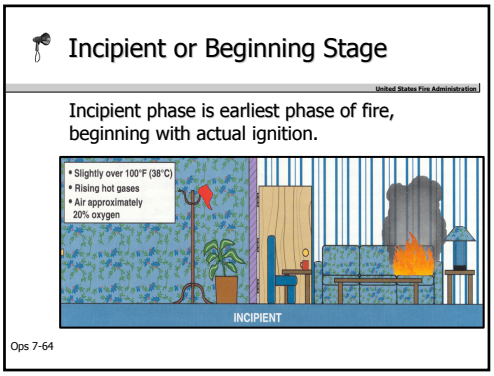
While the burning material may be a class A material (protective coating on the electrical wires inside), it is a class C fire because of the hazards posed by the electrical current passing through the wires.

- Class D—combustible metal fires (for example, aluminum, magnesium, and even steel).

Instructor Notes:

Even a steel wool pad may ignite and will burn slowly.

Slide 7-64: Incipient or Beginning Stage

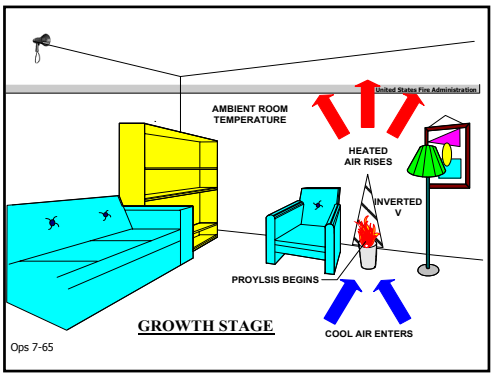


G. Normal fire behavior

Normally fires go through at least two and possibly three stages of burning.

- Stage one—incipient or beginning stage:
  - All fires start with a single point of ignition and expand from that point.
  - A class B fire (flammable liquid) expands rapidly while a class A fire expands slowly.
  - As a class A fire starts, the fire gases and heat start to rise upward and outward.

Slide 7-65: Growth Stage



Instructor Notes:

The pattern is often referred to as a "V" pattern with the bottom of the V pointing to the area of fire origin.

* Class A fires can be accelerated with flammable liquids and can have their normal fire pattern altered.

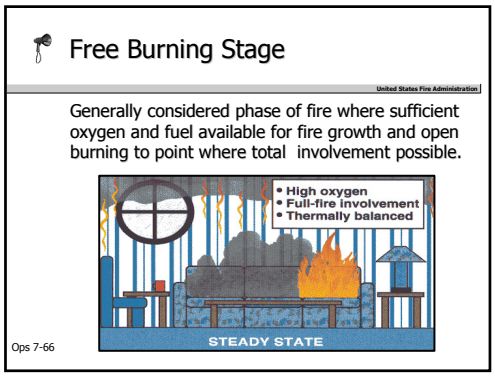
Instructor Notes:

The hotter and faster the fire, the narrower the "V" pattern.

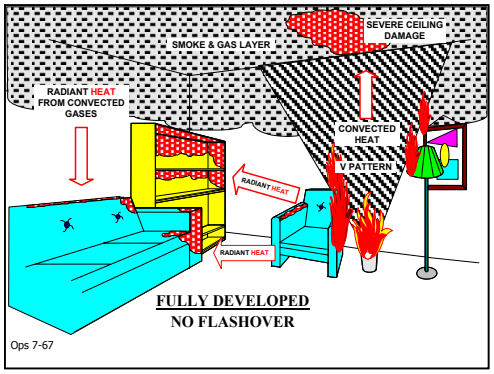
* As the fire burns it also produces a wide variety of fire gases:
  - Carbon monoxide (CO)—not the most toxic but the most abundant.

    As the oxygen level goes down, the production of CO goes up.
  - Carbon dioxide (CO_2) is produced in every fire.
  - Hydrogen sulfide (H_2S) is produced when organic materials containing sulfur burn (hair and wool).
  - Benzene (C_6H_6) is produced when vinyl materials burn.

Slide 7-66: Free Burning Stage



Slide 7-67: Fully Developed, No Flashover

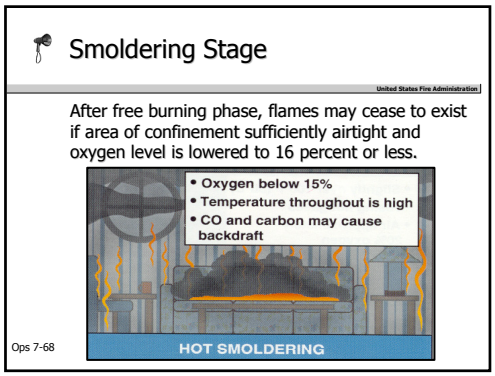


- Stage two—free-burning stage
  - Stage two follows flashover of the area or building, which appears to be fully involved.
  - In accidental fires, this stage will typically occur in about 3 to 5 minutes from the time of ignition.
  - The type of fuel or arrangement of the fuel may affect the time it takes to fully develop.

Instructor Notes:

Mention that a fire accelerated with a flammable liquid or some other method (trailer device of combustible materials arranged to quickly cause fire spread) may alter this normal fire growth and the normal three to five minute growth pattern. Do not take time to discuss accelerants at this time.

Slide 7-68: Smoldering Stage



- Stage three—smoldering stage
  - When a fire has passed through stages one (incipient) and two (free burning) it will likely smolder (third stage) **if the area or building is closed**.
  - The oxygen level is lowered to 16 percent or even less.
  - The free burning phase is reduced, the fire may retreat to its area of origin (most heavily burned part) and will continue to smolder for a long while.
  - Results:
    - Carbon monoxide production rises.
    - The temperature of the area or building rises.
    - Large amounts of heavy black carbon are deposited on the walls and windows.
    - Moisture may appear on the inside of the window glass as the glass is cooled by the cool air outside.
    - The building may appear to be puffing and breathing.

- Smoke may appear around windows, through siding, or through the roof material.

- The level of the structure where the smoke stops puffing is where the seat of the fire may be located.

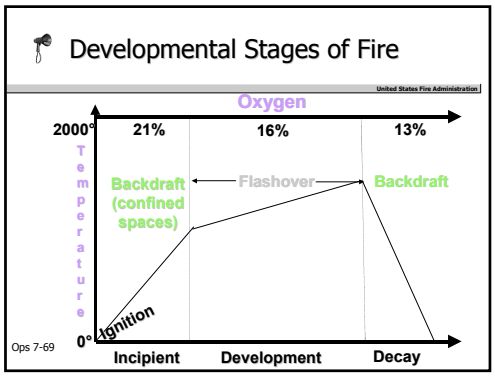
  If there is puffing smoke on the second floor, but none on the first, the area of fire origin may be located on the second floor.

* If the area or building remains tightly closed, the fire eventually will suffocate from a lack of oxygen.

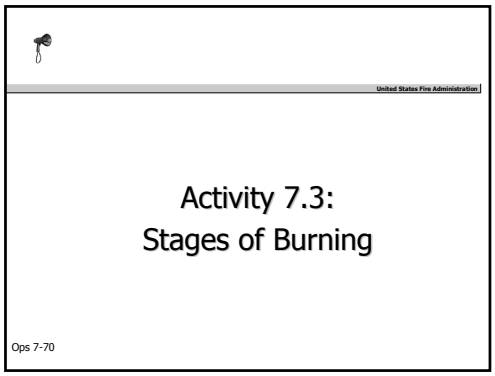
  - In some instances, fire departments have responded to an apparently significant fire that has gone out by itself after causing considerable heat and smoke damage.

  - As buildings are more tightly insulated, the potential for stage three fires increases.

Slide 7-69: Developmental Stages of Fire



Slide 7-70: Activity 7.3: Stages of Burning



XI. Activity 7.3: Stages of Burning (45 minutes)

Refer the students to Activity 7.3, Stages of Burning, in their student manuals.

Activity 7.3:
Stages of Burning

Time: 45 minutes

Purpose:

To provide the opportunity to determine various stages of fire progression. The ability of a fire officer to read a fire accurately is not only critical to the fire-suppression efforts, but to the fire cause determination and fire origin efforts as well.

Directions:

1. Divide the class into small groups. Each group should select a spokesperson.

2. Each group will read the three fire scenarios and determine the stage of fire descried in each scenario.

3. Groups will have 10 minutes to discuss the scenarios and determine the stage of fire suppression.

4. Ask one group to provide its answers and describe what factors led to their decision. Ask the other groups if they reached the same conclusion for the same reasons.

5. Repeat the process for the two remaining scenarios.

Activity 7.3:
Stages of Burning
Instructor Answer Key

Scenario 1

A fire has occurred in a two-story, wood-frame, single-family dwelling of balloon-type construction.

The area of fire origin appears to be around the bed of the master bedroom. There is heavy fire damage in the bedroom and especially around the bed. The family states that it had left to go shopping approximately 5 minutes before the fire.

The bedroom door where the fire started was open, as were the doors of the three other bedrooms on the second floor. All of the bedroom walls had been finished with wood paneling. The fire had spread from the room of origin to all the other second-floor bedrooms before fire department arrival. Upon your arrival, flames are coming out of several windows and the fire has burned through the roof over the master bedroom.

Questions:

1. At what stage was the fire upon your arrival?

   Answer: Stage two—a free-burning fire.

2. Are there any unusual circumstances that would require further investigation?

   Answer: Unusual circumstances would be the amount of fire damage upon arrival if the occupants had left only 5 minutes before the fire, as reported.

Scenario 2

The building is a one-story, wood-frame, platform-type construction. It was built in 1993 as a single-family unit.

The fire started in a pile of newspapers and spread to an overstuffed easy chair placed against the living room wall. From there a very distinct "V" pattern is recognized in the char pattern on the wall. In the fire debris next to the chair are the broken remains of a glass ashtray.

The occupant stated that he had not smoked for at least 12 hours and was very careful about extinguishing his cigarettes. He was at work and had left the dwelling about 3 hours earlier.

A neighbor had called the fire department to report something unusual next door. The windows appeared to be dark and she thought she smelled smoke in the area.

Upon your arrival, you observe darkened window glass that is hot to the touch, a light puffing around the eaves, and the strong odor of smoke.

Questions:

1. At what stage was the fire upon your arrival?

   Answer: Stage three fire—smoldering phase.

2. Are there any unusual fire circumstances that would require further investigation?

   Answer: Unusual circumstances include a source of ignition for the newspapers. The evidence of a broken ashtray in the debris next to the chair would require further discussion with the occupant about smoking material. The timeframe appears about right for the circumstances found, and no other apparent causes are observed.

Scenario 3

Your dispatcher has sent you to investigate a report of three boys playing in a garage. They were seen lighting small pieces of paper and then stepping on them to put them out.

As you approach the address, you observe three boys running from the garage and into a neighboring home. From the driveway, you observe a small amount of gray smoke coming from the partially opened side door. Upon entering the garage, you see a fire that involves the workbench area and the wall behind the bench. There is no electrical equipment on the bench area or other sources of ignition nearby.

Questions:

1. At what stage is the fire upon your arrival?

   Answer: Stage one fire—incipient phase.

2. Are there any unusual fire circumstances that would require further investigation?

   Answer: Unusual fire circumstances observed requiring further investigation include no apparent cause for the fire, three youths observed lighting small fires earlier, and the fact that the three last persons in the garage before the fire were the youths.

Summary:

The ability of a fire officer to determine the stages of fire may be critical to the fire cause determination. A report by a property owner that a fire has been burning for a long time may be discounted by the lack of any evidence of a third-stage fire.

Activity 7.3:
Stages of Burning
Student Activity Worksheet

Time: 45 minutes

Purpose:

To provide the opportunity to determine various stages of fire progression. The ability of a fire officer to read a fire accurately is not only critical to the fire-suppression efforts, but to the fire cause determination and fire origin efforts as well.

Directions:

1. Your instructor will divide the class into small groups. Your group should select a spokesperson to report your findings to the class.

2. Your group will read the three fire scenarios and determine the stage of fire progression.

3. You will have 10 minutes to discuss each scenario and determine the stage of fire progression.

4. Your instructor will ask you to provide answers and describe what factors led to your decision.

Scenario 1

A fire has occurred in a two-story, wood-frame, single-family dwelling of balloon-type construction.

The area of fire origin appears to be around the bed of the master bedroom. There is heavy fire damage in the bedroom and especially around the bed. The family states that it had left to go shopping approximately 5 minutes before the fire.

The bedroom door where the fire started was open, as were the doors of the three other bedrooms on the second floor. All of the bedroom walls had been finished with wood paneling. The fire had spread from the room of origin to all the other second-floor bedrooms before fire department arrival. Upon your arrival, flames are coming out of several windows and the fire has burned through the roof over the master bedroom.

Questions:

1. At what stage was the fire upon your arrival?

   _____

2. Are there any unusual circumstances that would require further investigation?

   _____

   _____

   _____

   _____

Scenario 2

The building is a one-story, wood-frame, platform-type construction. It was built in 1993 as a single-family unit.

The fire started in a pile of newspapers and spread to an overstuffed easy chair placed against the living room wall. From there a very distinct "V" pattern is recognized in the char pattern on the wall. In the fire debris next to the chair are the broken remains of a glass ashtray.

The occupant stated that he had not smoked for at least 12 hours and was very careful about extinguishing his cigarettes. He was at work and had left the dwelling about 3 hours earlier.

A neighbor had called the fire department to report something unusual next door. The windows appeared to be dark and she thought she smelled smoke in the area.

Upon your arrival, you observe darkened window glass that is hot to the touch, a light puffing around the eaves, and the strong odor of smoke.

Questions:

1. At what stage was the fire upon your arrival?

   _____

2. Are there any unusual circumstances that would require further investigation?

   _____

   _____

   _____

   _____

Scenario 3

Your dispatcher has sent you to investigate a report of three boys playing in a garage. They were seen lighting small pieces of paper and then stepping on them to put them out.

As you approach the address, you observe three boys running from the garage and into a neighboring home. From the driveway, you observe a small amount of gray smoke coming from the partially opened side door. Upon entering the garage, you see a fire that involves the workbench area and the wall behind the bench. There is no electrical equipment on the bench area or other sources of ignition nearby.

Questions:

1. At what stage was the fire upon your arrival?

   _____

2. Are there any unusual circumstances that would require further investigation?

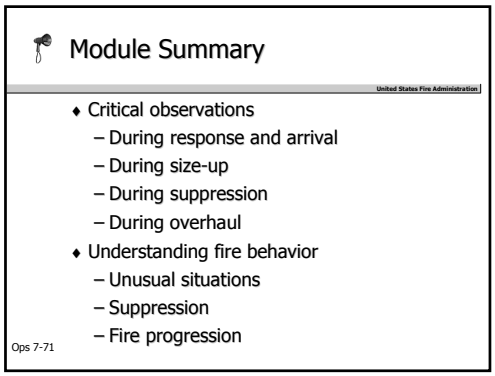
   _____

   _____

   _____

   _____

Slide 7-71: Module Summary



XII. Module Summary (5 minutes)

- A chief officer may be in the best position to make critical observations about the fire, the possible area of origin, and the cause.

  * Observations en route include the weather conditions, traffic, and persons or vehicles leaving the area.

  * Observations made upon arrival and during size-up include the location of the fire, the extent of the fire, the color of the smoke and flames, and condition of the occupants.

  * Observations made during suppression work include the location of the fire, how the fire reacted when water was applied, the number of fires burning, and things intentionally done to slow the extinguishment efforts.

  * Observations made during overhaul include items that appear to be missing or out of place, or activities that may have taken place in the building before the fire.

- The fire officer is often one of the first trained fire officials at the fire scene who can observe many

items critical to the fire cause determination.

- Understanding fire behavior factors and how a fire normally develops will help the fire officer and firefighters identify unusual situations that may require further consideration.

- The fire officer and firefighters who were inside the burning structure may be the best persons to describe what was observed and those actions that were taken to suppress the fire.

- Of particular interest are those items that may have influenced the path or progress of the fire.

MODULE 7

APPENDIX

FIRE BEHAVIOR CHECKLIST

Fire Behavior Checklist

This checklist is provided to help the company officer and firefighters evaluate various aspects of fire behavior that may be critical to the fire cause and origin determination.

1. What material first ignited? _____

2. Complete the following if the materials involved a **liquid**.

   Flashpoint of material: _____

   Vapor density compared to air: _____

   Specific gravity compared to water: _____

   Solubility in water: [ ] yes [ ] no

   Flammable limits: _____

   Flammable or combustible liquid: [ ] yes [ ] no

   Ignition temperature of material: _____

3. Should the flammable/combustible liquid have been where it was at the time of the fire? [ ] yes [ ] no

4. Was the heat released from the burning material what you would have anticipated for this type of occupancy? [ ] yes [ ] no

5. How did the fire react when water was applied?

   _____

   _____

   _____

6. Was the fire extinguished with the amount of water normally applied for similar fires in similar occupancies? [ ] yes [ ] no

   If no, how much more was needed? _____

7. Is the path of fire travel clearly defined by obvious paths of fire travel or evidence of fire progression upward and outward from the area of fire origin? [ ] yes [ ] no

8. What stage was the fire in upon your arrival?

   [ ] Stage one: incipient fire
   [ ] Stage two: free-burning
   [ ] State three: smoldering

9. Did a backdraft occur or is there any evidence of a backdraft?

   [ ] yes [ ] no [ ] unsure

10. Was there anything that appeared different at this fire than at other fires you have responded to recently?

    [ ] yes [ ] no

    If yes, explain. _____

    _____

11. Were there any eyewitness accounts of the fire origin or cause? [ ] yes [ ]no

    If yes, does this appear to be consistent with your observations about the origin and cause of the fire? [ ] yes [ ] no

    Explain. _____

    _____

Fire Scene Observation Notes

Sketch of the Fire Building

MODULE 8

MODULE 8

FIRE CAUSE DETERMINATION II

MODULE 8:

FIRE CAUSE DETERMINATION II

Terminal Objective

Upon completing the module, students will be able to conduct interior and exterior examinations of a fire scene and read patterns to help determine the area of fire origin.

Enabling Objectives

Students will:

- Identify the kinds of information necessary to document a fire;
- Determine exterior signs that are critical to locating the are of fire origin;
- Determine interior signs that help locate the area of fire origin;
- List the most common building elements that may help pinpoint fire origin and cause; and
- Determine when to call a fire investigator to conduct an investigation.

Requirements

Facility

Classroom with tables

Materials

- COTC Operations Instructor Guide
- COTC Operations Student Manual
- PowerPoint® slides

Equipment

- Computer

- LCD projector
- One portable screen or classroom equipped with screen
- Chalkboard/wipeboard
- Easel pads with markers

Instructor Guidelines

The instructor should carefully read the instructor guide and the student manual and become familiar with the content before presenting the course.

The aim of this module is to discuss the basic responsibilities of the chief fire officer. The module presents basic considerations for the officer who makes a systematic examination of a fire scene by conducting a thorough exterior examination before conducting a thorough interior examination. Emphasis is placed on moving from areas least burned or damaged to those most burned or damaged.

The module has two scenario-based group activities that address the concepts presented in the module.

Methodology

This module uses lecture, discussion, and activities.

Outline

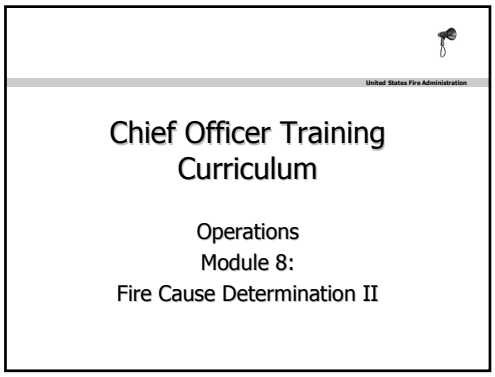
I. Objectives and Overview ..... 5 minutes
II. Importance of Fire Related Information ..... 10 minutes
III. Collection of Information ..... 40 minutes
IV. The Incident Commander's or Chief Officer's Role in Determining Fire Origin ..... 10 minutes
V. Organizing the Fire Cause Determination Effort ..... 10 minutes
VI. Exterior Examination ..... 15 minutes
VII. Activity 8.1: Exterior Fire-Scene Examination ..... 45 minutes
VIII. Examination of Interior Structural Components ..... 35 minutes
IX. Examination of Building Components ..... 10 minutes

X. Reading Fire Patterns ..... 10 minutes
XI. Activity 8.2: Reading Fire Patterns ..... 45 minutes
XII. Module Summary ..... 5 minutes
240 minutes

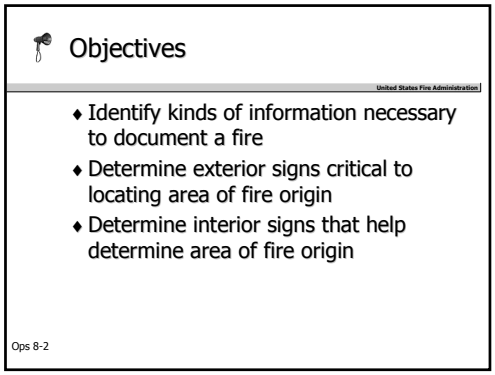
NFPA 1021 Standards Cross-Reference Matrix

3-5, 4-5

Slide 8-1: Module 8, Fire Cause Determination II



Slide 8-2: Objectives



I. Objectives and Overview (5 minutes)

A. Objectives

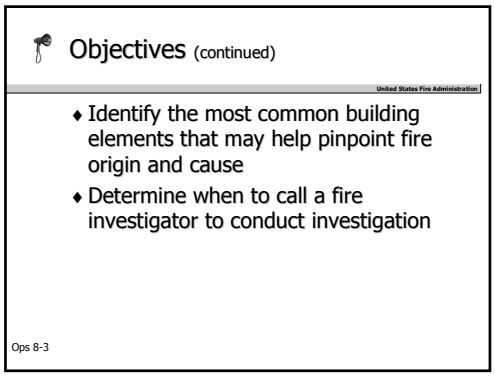
Instructor Notes:

Read the module objectives and elaborate if necessary.

Students will be asked to:

- Identify the kinds of information necessary to document a fire;
- Determine exterior signs that are critical to locating the area of fire origin;
- Determine interior signs that help determine the area of fire origin;

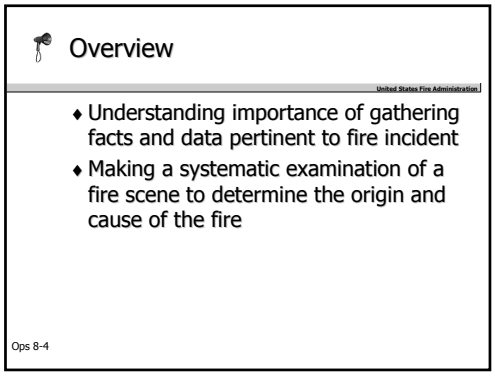
Slide 8-3: Objectives (continued)



- Identify the most common building elements that may help pinpoint fire origin and cause; and

- Determine when to call a fire investigator to conduct an investigation.

Slide 8-4: Overview

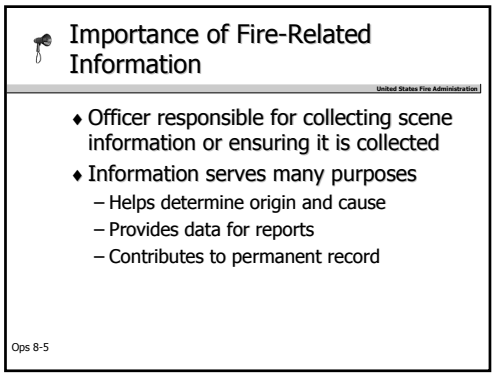


B. Overview

The officer's role is to prepare resources for handling emergencies, perform rescues, suppress fires, and lead firefighters in performing a variety of other tasks.

In addition to all the duties performed on a regular basis, the department may also be responsible for determining the origins and causes of fires to which they respond. If they are not responsible, in the strict sense of the word, for origin and cause determination, they at least play an important supporting role in making such determinations.

Slide 8-5: Importance of Fire-Related Information



II. Importance of Fire-Related Information (10 minutes)

The fire officer is often responsible for gathering data and facts pertinent to a fire incident.

This information may be used for several purposes during the hours, days, months, or even years following the incident, such as:

- Determining the area of fire origin and cause;
- Preparing the official Basic Fire Incident Report;
- Providing information for other sources, including:
  - The media,
  - Insurance companies, or
  - Fire/arson investigators; or
- Establishing a permanent record of the circumstances of the fire, which:
  - May be used later in criminal court for an arson trial;
  - May be used later in civil court for an insurance settlement trial;
  - May be used in a trial for

subrogation; or

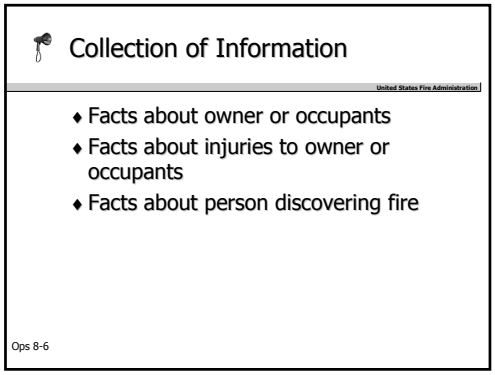
* May protect the fire department if it is involved in a lawsuit. (This could occur if the occupant accuses the fire department of stealing expensive jewelry, for example.)

Instructor Notes:

Ask whether anyone knows what subrogation is. If no one does, use the following example to explain it.

If the furnace seems to have been the cause of the fire, the insurance carrier may sue the furnace manufacturer for the cost of damages.

Slide 8-6: Collection of Information



III. Collection of Information (40 minutes)

A. Owner and/or occupant(s)

- Obtain the name of the owner of the property (if company, name of firm).

Instructor Notes:

Point out that the renters may know only the name of the person to whom they pay rent. You may need to probe further for additional information on the real owner.

- Contact the manager for names of

the occupants for large buildings with multiple occupants.

- Get the names of the occupants in the area where the fire damage is the greatest or where the fire appears to have originated and their relationships to one another.

- Get the occupants' telephone numbers.

- If the occupancy is uninhabitable, note where the occupants will be staying:

  * Name, address, and phone number of host;

  * Relationship to host; and

  * If fire victim(s) are unsure where they will stay, provide a number for them to phone you with the information later.

- Have the owner sign a consent form to permit a fire investigation.

- Obtain the complete address of the fire building and its occupancy, including the:

  * Street number,

  * Apartment designator, and

  * ZIP code.

B. Injuries to owners or occupants

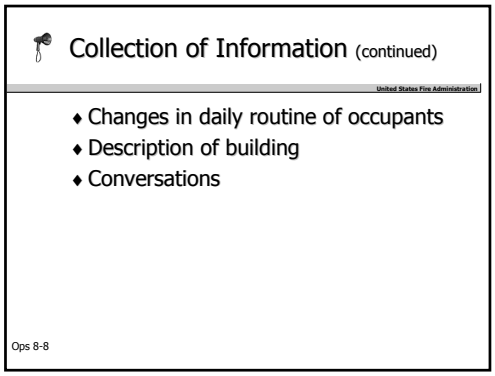
- Ask if there were injuries.
- Obtain the name(s), age(s), and relationships of injured.
- Determine the treatment the injured received and from whom:
  - On-scene, by other than fire or EMS personnel,
  - Name and address of person providing treatment,
  - Fire or EMS treatment at the scene,
  - Treatment at medical facility, and
  - Name of doctor or hospital.
- Find out the current location of injured persons.
- Note any evidence of injury or exposure either to fire or products of combustion, such as:
  - Burns or singed hair or eyebrows;
  - Smoke stains around the mouth;
  - Cuts, bleeding, or bruises; or

* Fresh bandages.

C. Person discovering the fire

- Who discovered the fire?
- Where was that person when it was discovered?
- Did that person call the fire department?
- Did that person hear any detection equipment?
- Where were the flames when they were discovered?
  * What appeared to be on fire?
  * Were the flames reaching the ceiling?
  * Was there more than one area or item on fire?
- What were the color and intensity of the flames and smoke?
- Who was the last person in the room or area where the flames were discovered?
- How long has it been since someone was in the room or area?
- Did anyone see how the fire spread?

Slide 8-7: Collection of Information (continued)



- ∗ Where did it spread?
- ∗ Did anyone see any windows open before the fire?

- Did anyone leave doors open?

D. Alternate uses of the building

- What was building/area used for?
- What type of work was performed there?
- What was commonly stored there?
  - ∗ Were there any special storage arrangements such as the use of flammable liquid cabinets?
  - ∗ How was material stored?
- What type of machinery was in the building/area?
  - ∗ Was the machinery on or off at the time of the fire?
  - ∗ Who normally operates the machinery in that area and turns it off and on?
  - ∗ Were there any sources of heat in the machinery?
- Was there any welding or cutting done in the area?

- Who secured the building/area?

E. Problems before the fire

- Was everything operating correctly before the fire?
- Had any fuses blown, or had any circuit breakers been tripped recently?
- Did anything in the area customarily shoot sparks?
- Did the heating equipment work satisfactorily?
- Did anyone use any portable equipment?
- Did anyone use the oven or burners on the stove to supplement the heat?
- Was any equipment operating at the time of the fire?
- Did anyone check the controls of stoves and appliances to see if they were on or still had the fuel turned on?
- Was anyone making repairs at the time of the fire?
  - Who?
  - What kinds of repairs?

F. Portable heating devices

- Were any portable heating devices in use at the time of the fire, such as:
  - Heaters,
  - Cutting or welding equipment,
  - Paint stripping equipment or materials, or
  - Roofing equipment?

Instructor Notes:

Ask the class for other examples from their experiences.

- Were heating devices in use at the time of the fire?
- Who was using them?

G. Information about the fire origin

- With respect to the owner's, occupant's, or fire discoverer's opinion about the cause of the fire:
  - Note any opinions.
  - Listen. Let them talk.
  - Ask for explanations when needed.

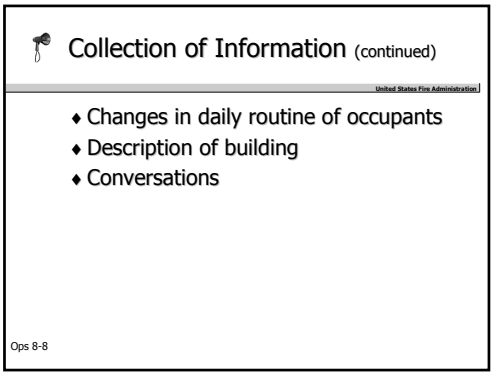
* Keep questions nontechnical.

- If the person has pertinent information, take a statement.
- Both you and the person making the statement should sign and date it.
- Until the person becomes a suspect, you are not obligated to inform him or her of legal rights (Miranda rights).

Instructor Notes:

The next section is about variations in daily or regular practice. Often because someone did something different, the results were unanticipated. For example, if a person irons a shirt before going to work (rather than the evening before), he or she might leave the iron before going to work.

Slide 8-8: Collection of Information (continued)



H. What was done differently today?

- Many accidental fires can be explained by examining the events that occurred before the fire.
- Determine if the owner or occupant did anything different today from yesterday.

Instructor Notes:

Noting something that seems

unimportant could be very helpful, as in the following example, "I put bread in the toaster, and when I pushed the handle down, I noticed that I had to push harder than before."

I. Description of the building

- Dimensions;
- Number of floors;
- Type of construction:
  - Fire resistive,
  - Noncombustible,
  - Heavy timber,
  - Ordinary,
  - Wood-frame/platform type,
  - Wood-frame/balloon-type, or
  - Wood-frame/post and beam;
- Description of fire and smoke damage;
- Description of any damage caused during fire suppression efforts;

Instructor Notes:

Ask the class members to suggest examples of damage inflicted during

suppression from their own experiences.

Common examples might be windows broken or a roof pierced for ventilation; walls and ceilings penetrated while checking for extension; doors and locks forced open.

- Description of any obvious damage that was present prior to the fire; and

- Areas where fire or smoke traveled, such as void areas, pipe chases, heat ducts, or other building features.

J. Conversations

- Seek conversations with:

  * Eyewitness(es),

  * Person(s) who arrived early,

  * Person(s) who earlier observed activity near the fire building, or

  * Person(s) who may have information pertinent to the fire cause.

- Obtain names, descriptions, and the exact information.

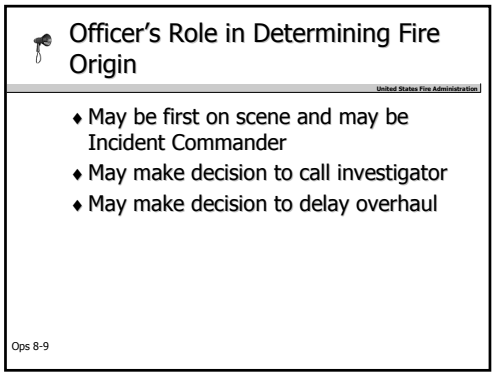
  * If firefighters were involved in the conversation, have them prepare a brief written report

on its details.

* Obtain names, addresses, and telephone numbers of persons you interview.

* If a person has significant information, have him or her give a statement at the station.

Slide 8-9: Officer's Role in Determining Fire Origin



IV. The Incident Commander's (IC's)/Chief Officer's Role (10 minutes)

A. First person on scene

The Incident Commander (IC)/chief officer is often the first person on the scene and can collect the best information:

- On the location of the fire,
- On the type of materials burning, and
- On the impact of fire suppression efforts on the spread of the fire.

B. Determining need for fire investigator

The chief officer may be the person who determines if a fire investigator is needed.

- Are the circumstances found during and after fire suppression consistent with an accidental fire?

- Are they consistent with a nonaccidental fire?

- Do things appear normal?

C. Deciding to delay overhaul

The chief officer decides where to delay overhaul until fire origin and cause determination is completed.

- Overhaul may require removing furniture, moving equipment, and opening walls and ceilings to check for hidden fire.

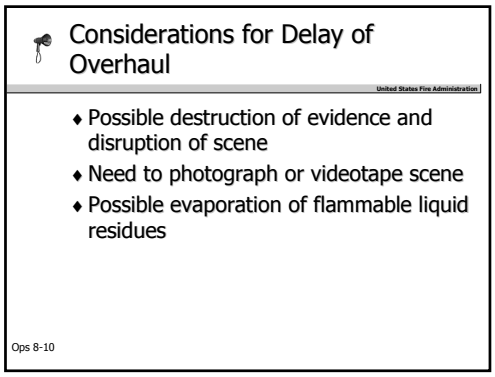
- If overhaul is done before fire investigation has been completed, the officer must ask:

  * Is there critical evidence that may be lost or destroyed?

  * Is the area or room of fire origin clearly defined?

  * Can overhaul in the area or room of origin be delayed?

Slide 8-10: Considerations for the Delay of Overhaul



D. Considerations for the delay of overhaul

- Opening walls, pulling ceilings, and shoveling debris outside may destroy or bury evidence.
- Evidence may be broken or destroyed as it is removed.

E. Precautions if overhaul occurs before origin and cause determination

- Make a photographic or videotape record of the location and position of potential clues or evidence.
- Collect and safeguard evidence only if it will be altered or destroyed.

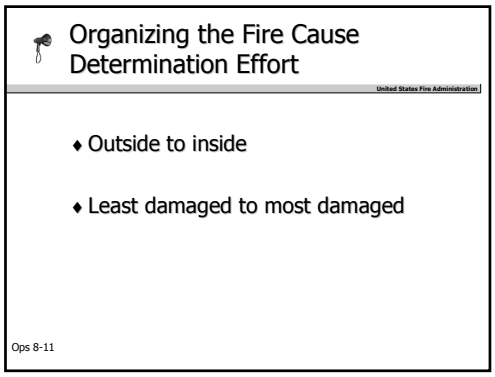
  In incendiary fires, leave the evidence for investigators.

Instructor Notes:

Point out that if evidence is collected and later transferred to someone else, it is critical to document this process so the chain of evidence is not broken.

Avoid exposing (and causing evaporation of) hidden pockets of flammable liquid residue before samples are taken.

Slide 8-11: Organizing the Fire Cause Determination Effort



V. Organizing the Fire Cause Determination Effort (5 minutes)

- Process a fire scene in an orderly and logical manner:
  - From outside to inside and
  - From least damaged to most damaged.
- The manner of such process may vary depending on the severity of fire damage.
- Significantly fire-damaged structures usually have fire damage to several rooms or floors.
  - Inspection starts outside with a 360-degree observation.
  - Determine which portions appear most damaged and least damaged.
  - Continue inside the structure from the least to the most damaged area, which is the likely room or area of origin.
  - Continue inside the room of origin from the least to the most damaged part, which is the likely point of origin.
- Limited fire damage usually results from a one-room structural

fire.

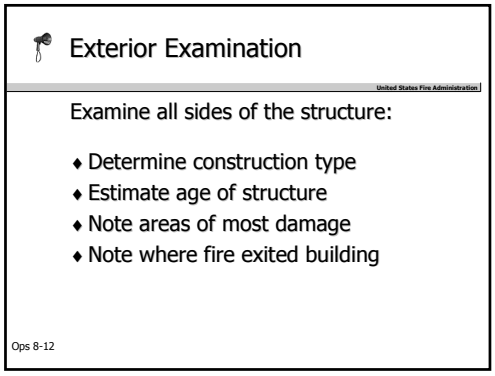
* Inspection starts with the room(s) nearest the room of fire origin.

* Note the smoke and heat damage.

* Start inside the room from the least-damaged area toward the area of greatest fire damage.

* The goal is to determine the area that is the most likely area of fire origin.

Slide 8-12: Exterior Examination



VI. Exterior Examination (15 minutes)

A. Examine all sides of the structure.

- Walk around the entire structure.
- Note items that may be critical to fire origin and cause determination.
  - Note the classification of building construction type or method of construction:
    - Fire-resistive (concrete),
    - Noncombustible (steel),
    - Heavy timber (mill type),
    - Ordinary (masonry exterior and wooden

interior), or

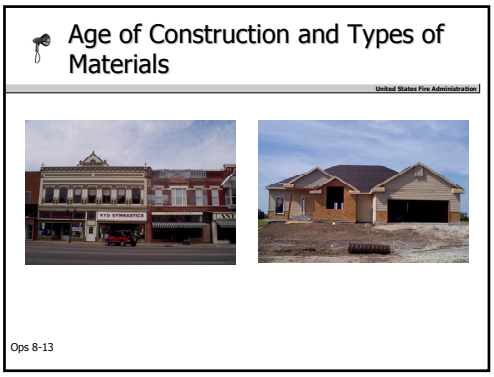
– Wood frame:

> Post and beam,

> Balloon, or

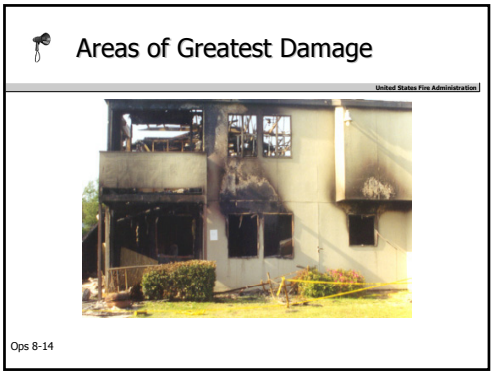
> Platform.

Slide 8-13: Age of Construction and Types of Materials



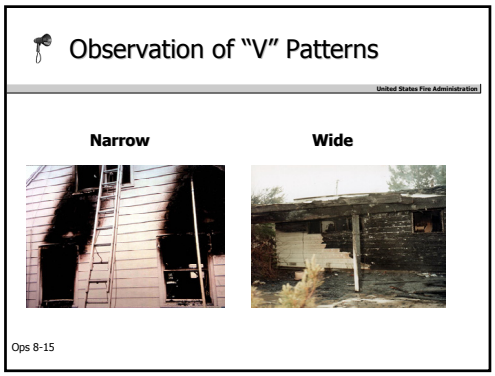
* Note the age of construction relative to the types of materials used.
  – Modern lightweight roof and floor supports may collapse faster than heavier, thicker lumber.
  – Note any heavy reliance on synthetic materials.
  – Note commonly found wooden trusses held together with perforated metal plates.

Slide 8-14: Areas of Greatest Damage

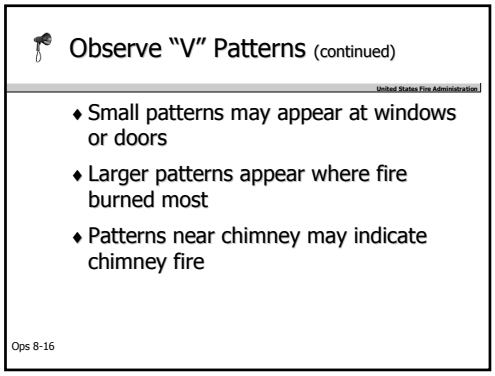


* Note areas of greatest damage.
* Note areas where the fire exited the building, such as:
  – Designed openings or
  – Fire-created openings.

Slide 8-15: Observe "V" Patterns



Slide 8-16:



B. Observe "V" patterns

- Small "V" patterns may appear at window and door openings.
- This "V" pattern is normal if a window broke or a door was open or burned through.
  - Examine window glass outside the structure for carbon deposits or cracking from the heat.
  - Generally, glass broken by the fire will be in large pieces.
  - Examine doors to determine if they were open before or during the fire.
    - Doors that were open during fire generally will be more damaged on the side of fire travel.
    - Doors that were closed

during fire generally will be damaged evenly across.

- Large "V" patterns may appear when the fire burned upward and outward from the area of fire origin.

  * A fire starting in a living room sofa could create a "V" pattern leading into the next room or to the floor or roof above.

  * Note whether the damage above the "V" pattern is consistent with the damage of the "V" pattern.

  * Observe whether the ceiling or roof damage is greater in the area of fire origin and near the center of the "V."

  * It often helps to view the fire building from the top of an aerial device so as to get another perspective of the path of fire travel.

- "V" patterns around a chimney may indicate that the fire started in a chimney flue.

  * Further examination may reveal a cracked or missing flue liner.

Instructor Notes:

Point out to the class that older chimneys may not have flue liners.

- Note the type of chimney:
  - Brick and unlined,
  - Brick and lined with a flue liner, or
  - Chimney block lined with flue liner that:
    - May be clay or metal or
    - May extend above the chimney.

Slide 8-17: Security Before the Fire

C. Security before the fire

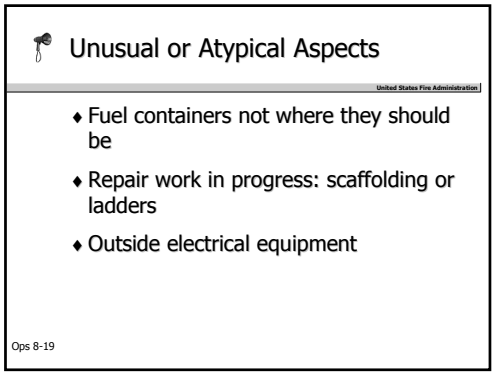
- Note any signs of forced or broken windows.
  - Were they forced or broken during fire suppression?
  - Is the glass inside or outside the building?

Instructor Notes:

Stress the importance of whether the glass was found inside or outside. Inside glass may indicate that someone broke it. Outside glass is more likely the result of the fire.

Slide 8-18: Signs of Forced Entry

Slide 8-19: Unusual of Atypical Aspects



- Note any signs of forced or broken doors.
  - Were the doors forced during fire suppression?
  - What at the types and numbers of the locks?
- Is the glass clear or stained? Clear glass may mean prior breakage and entry.

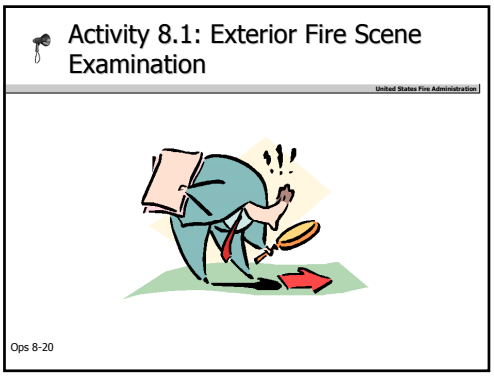
D. Unusual events or out-of-place items

- Note any fuel containers that do not belong in the area and whether they were:
  - Found in a hidden area and
  - Empty or filled.
- Note any repair work in progress.
  - Are there signs of heating devices, such as:
    - Torches,
    - Paint removing heaters, or
    - Space heaters?
- Note any ladders to the roof. Ladders to the roof may indicate an attempt to extinguish a fire in a

chimney.

- Note any electrical equipment on the outside of the structure, such as:
  - Holiday lighting,
  - Heat tapes for pipes, or
  - Heat tapes for edges of the roof.

Slide 8-20: Activity 8.1: Exterior Fire Scene Examination



VII. Activity 8.1: Exterior Fire Scene Examination (45 minutes)

Instructor Notes:

Refer students to Activity 8.1, Exterior Fire Scene Examination, in their student manuals.

Activity 8.1:
Exterior Fire Scene Examination

Time: 45 minutes

Purpose:

To reinforce the need to conduct an outside evaluation of the fire scene before starting an inside evaluation.

Materials:

- Visuals
- Student Activity Worksheets (provided in the student manuals)

Directions:

1. Divide the class into small groups and ask each group to appoint a spokesperson.
2. Have the groups read the scenarios and **view the slides** for the scenarios.
3. Allow the groups 20 minutes to discuss the scenarios and answer the activity questions.
4. Ask each group to report their answers to the class.
5. Ask the other groups if they concur with the responses and if they have anything to add.

Scenario 1

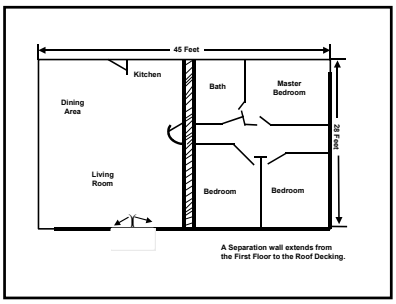
Slide 8-21: One-story, wood-frame dwelling

Your department has just extinguished a fire in a one-story, wood-frame (platform type) single-family dwelling. The fire had been reported at 1745 hours. The temperature is 75°F, it is clear, and there is no measurable wind.

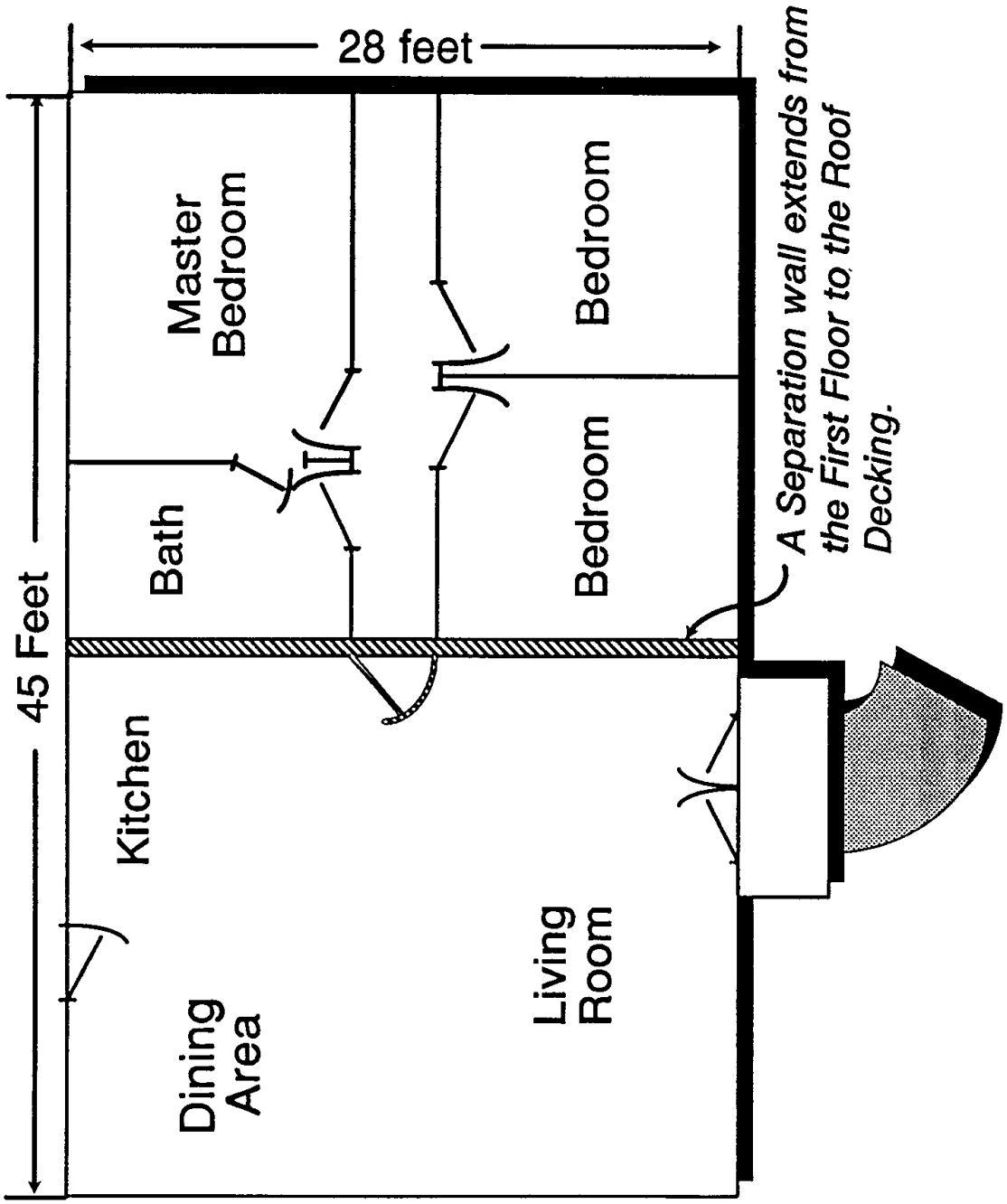
The dwelling has a full basement which is used as a vehicle garage and general storage area. This area sustained no fire damage. The contractor built a fire separation wall in the attic area that divides the kitchen, dining room, and living room areas, and the bedroom and bathroom areas. The fire separation wall extended from the exterior bearing walls to the roof but did not extend out over the exterior overhang (soffits).

During your suppression efforts, you observed that the fire separation wall was undamaged, and the ceiling in the bedroom section of the structure was also intact. Firefighters had to pull the ceilings in the bedrooms to extinguish the fire in the ceiling area.

Slide 8-22: Scenario 1, Floor Plan



Scenario 1: Floor Plan



Scenario 2

Slide 8-23: Two-story, wood-frame dwelling

Your department is attempting to extinguish a fire in a two-story, wood-frame (balloon type), single-family dwelling unit. The fire was reported at 1015 hours. The dwelling has been renovated several times since its original construction in 1922.

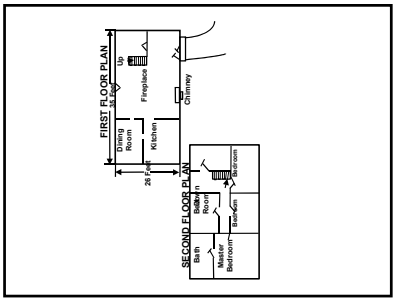
The temperature is -5°F, it is overcast, but there is no measurable wind. The temperature has been near 0°F for the past three days and heating systems have been operating near capacity. Many homes have fireplaces that are used to supplement the normal heating system. Because of the remote location of this structure, the fire burned for a considerable time before you were notified.

Upon your arrival, you observe that the center portion of the structure is heavily damaged, while the ends are less damaged. Because of the damage to the structural elements, you deploy a defensive operation.

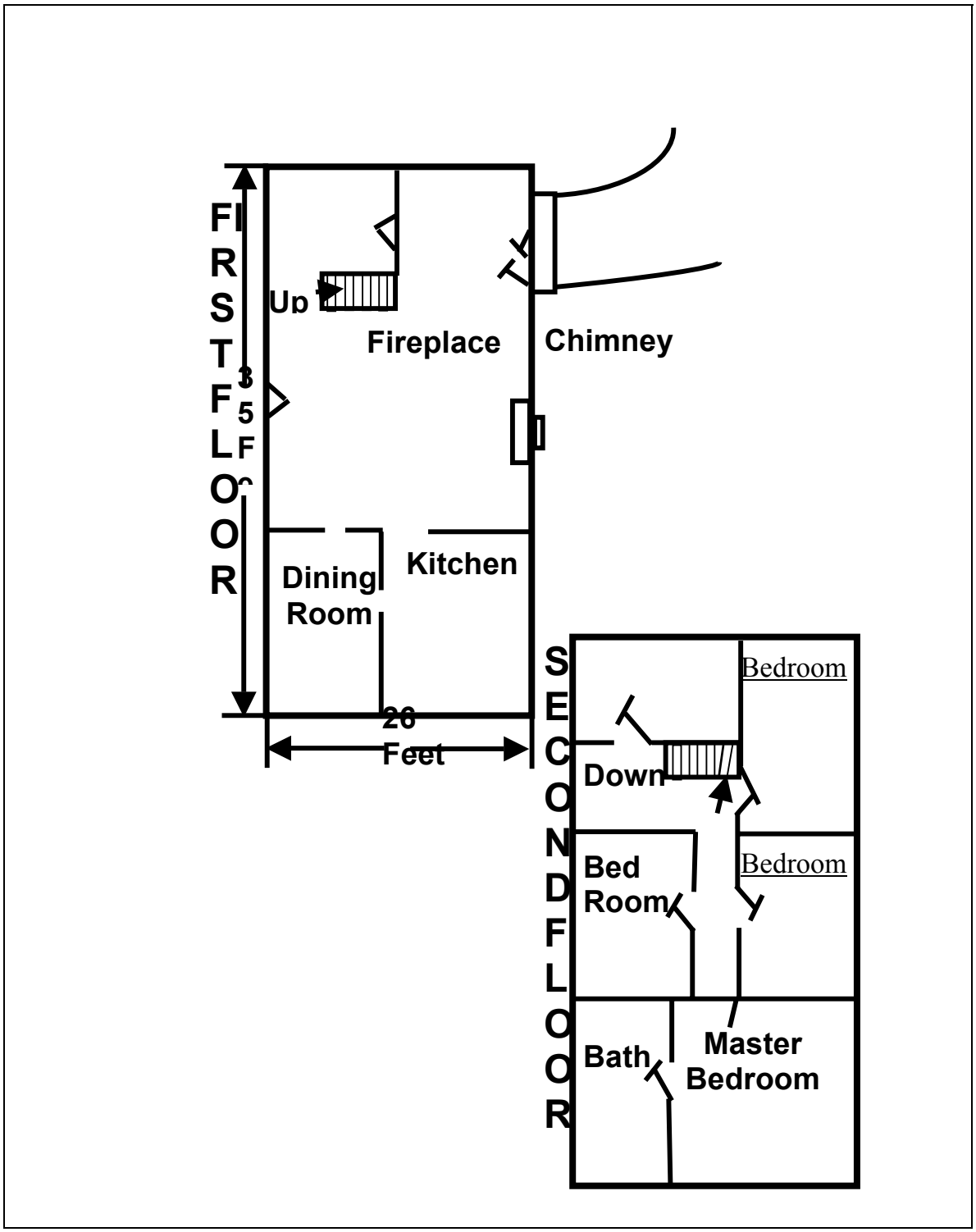
Soon after your arrival, the homeowner arrives and informs you that he was the last person in the home and left at about 0700 hours to go to work.

During your suppression efforts, you observe that there is no apparent fire in the basement, the electrical service enters the structure on the side that is just becoming involved, and there is a large supply of well-seasoned firewood at the rear of the dwelling.

Slide 8-24: Scenario 2, Floor Plan



Scenario 2: Floor Plan



Activity 8.1:
Exterior Fire Scene Examination
Instructor Answer Key

Scenario 1

1. At which end of the building did the fire appear to originate?

Response:

The kitchen, dining room, and living room area.

2. What observations support your answer to Question 1?

Responses:

- The "V" pattern on the left side of the structure.
- The lack of fire damage in the bedroom and bath area of the structure.
- The lack of fire damage in the basement.

3. How did the fire get past the fire separation wall in the attic area and into the bedroom area?

Response:

From the outside of the structure through the roof overhang (soffit) area.

4. What observations support your answer to Question 3?

Response:

Along the path of fire travel on the outside wall near the window of bedroom #1, the soffit material is burned away and demonstrates a clear path of fire travel into the attic area.

Scenario 2

1. Is there any visible "V" pattern? If so, where does it appear to be located?

Response:

Yes. It appears to be centered around the chimney, with the bottom being near the floor level of the first floor.

2. Does the wall near the chimney appear to be more heavily damaged than the wall on the opposite side of the structure?

Response:

Yes.

3. What observations support your answer to Question 2?

Response:

The wall studs near the chimney are gone at the second floor level. The wall studs on the opposite side are still intact. The wall covering (boards) are still in place. It appears that the fire has burned longer near the fireplace.

4. What questions would you have to ask the property owner regarding fire cause determination?

Responses:

- Was there a fire in the fireplace when you left for work?
- If there was a fire, when was the last time someone added wood to the fire?
- What type of chimney do you have? It is evident that the exterior is brick. Did it have a flue liner? What kind?
- How recently was the chimney cleaned?
- How long had the fire been burning without going out? (It's possible that the brick conducted enough heat to ignite combustible materials near the fireplace or chimney.)

Summary:

Stress the importance of examining all fires of significant extension from the outside of the structure first. This procedure may provide an overall view of the damage and clues to where the majority of damage occurred, and may even point to the most probable area of fire origin.

Activity 8.1:
Exterior Fire Scene Examination
Student Activity Worksheet

Time: 45 minutes

Purpose:

To reinforce the need to conduct an outside evaluation of the fire scene before starting an inside evaluation.

Directions:

1. Your instructor will divide the class into small groups and ask each group to appoint a spokesperson.
2. Read and view the slides for the scenarios.
3. You will have 20 minutes to discuss the scenarios and answer the activity questions.
4. When the instructor calls on your group, report your answers to the class.

Scenario 1

Your department has just extinguished a fire in a one-story, wood-frame (platform type) single-family dwelling. The fire had been reported at 1745 hours. The temperature is 75°F, it is clear, and there is no measurable wind.

The dwelling has a full basement that is used as a vehicle garage and general storage area. This area sustained no fire damage. The contractor built a fire separation wall in the attic that divides the kitchen, dining room, and living room areas, and the bedroom and bathroom areas. The fire separation wall extended from the exterior bearing walls to the roof but did not extend out over the exterior overhang (soffits).

During your suppression efforts, you observed that the fire separation wall was undamaged, and the ceiling in the bedroom section of the structure also was intact. Firefighters had to pull the ceilings in the bedrooms to extinguish the fire in the ceiling area.

1. At which end of the building did the fire appear to originate?

_____

_____

_____

2. What observations support your answer to Question 1?

_____

_____

_____

3. How did the fire get past the fire separation wall in the attic area and into the bedroom area?

_____

_____

_____

4. What observations support your answer to Question 3?

_____

_____

_____

Scenario 2

Your department is attempting to extinguish a fire in a two-story, wood-frame (balloon type), single-family dwelling unit. The fire was reported at 1015 hours. The dwelling has been renovated several times since its original construction in 1922.

The temperature is -5°F, it is overcast, but there is no measurable wind. The temperature has been near 0°F for the past three days and heating systems have been operating near capacity. Many homes have fireplaces that are used to supplement the normal heating system. Because of the remote location of this structure, the fire burned for a considerable time before you were notified.

Upon your arrival, you observe that the center portion of the structure is heavily damaged, while the ends are less damaged. Because of the damage to the structural elements, you deploy a defensive operation.

Soon after your arrival, the homeowner arrives and informs you that he was the last person in the home and left at about 0700 hours to go to work.

During your suppression efforts, you observe that there is no apparent fire in the basement, the electrical service enters the structure on the side that is just becoming involved, and there is a large supply of well-seasoned firewood at the rear of the dwelling.

1. Is there any visible "V" pattern? If so, where does it appear to be located?

_____

_____

_____

2. Does the wall near the chimney appear to be more heavily damaged than the wall on the opposite side of the structure?

_____

_____

_____

3. What observations support your answer to Question 2?

_____

_____

_____

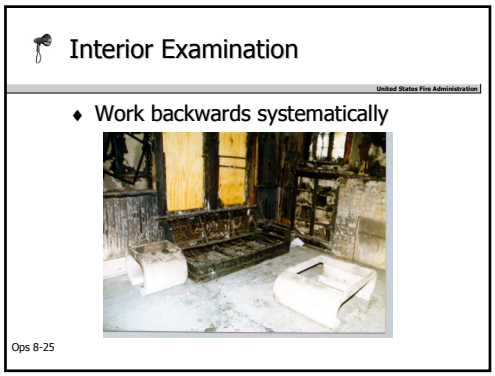
4. What questions would you have to ask the property owner regarding fire cause determination?

_____

_____

_____

Slide 8-25: Interior Examination



Slide 8-26: Least-Damaged to Most-Damaged

VIII. Examination of Interior Structural Components (35 minutes)

A. Backward examination

The examination usually works backwards, systematically following the path of the fire's spread.

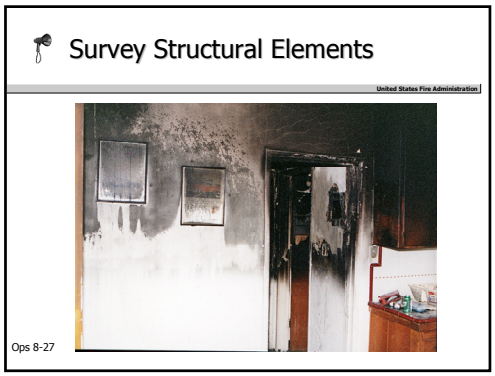
- Systematic examination helps avoid hasty and perhaps faulty judgments about the area of fire origin.
- All visible fire patterns and clues are evaluated so as to determine the area of fire origin.

B. Least-damaged to most-damaged

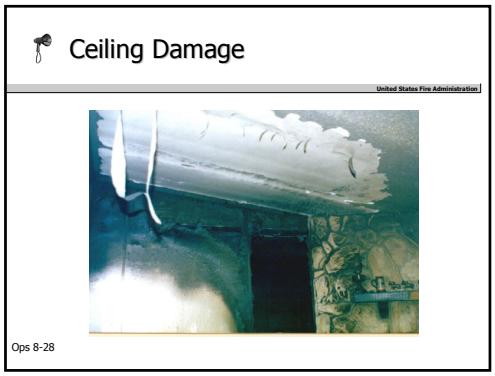
The examination goes from the least- to most-damaged area, from:

- Lightly to heavily smoke-stained areas,
- Lightly to heavily damaged areas, and
- Lightly to heavily charred areas.

Slide 8-27: Survey Structural Elements



Slide 8-28: Ceiling Damage



C. Survey structural elements

The process surveys structural elements so as to check for path of fire and smoke spread.

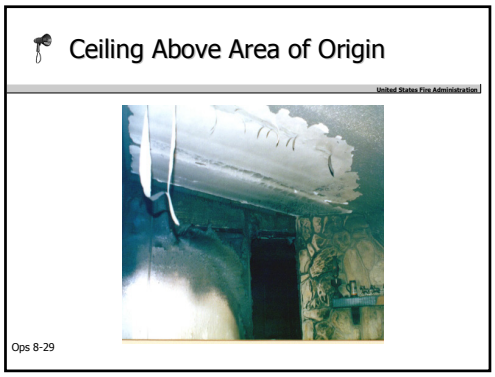
- Components may be charred more heavily on the side facing the area of fire origin, as it was exposed longer, particularly:
  - Door jambs and frames,
  - Wood moldings, and
  - Wall studs.
- Areas above doors closest to the area of fire origin may have more severe smoke stains and charring.
- Ceiling damage as one approaches the area of fire origin should become more extensive.

* Holes in the ceiling may have helped fire spread.

* Damage could be from fire suppression activity.

* There may have been openings in or damage to the ceiling before the fire.

Slide 8-29: Ceiling Above Area of Origin



* The ceiling above the area of fire origin may have less smoke damage than more remote areas.

Slide 8-30:

- Check the floor for fire damage since fires normally burn upward.

  * The point of origin is usually found at the lowest level of burning.

  * Floor damage is usually 20 to 30 percent less than that of the ceiling damage directly above.

  * Note carpet burns, melting, singeing, or smoke stains.

Slide 8-31: Extensive Floor Damage

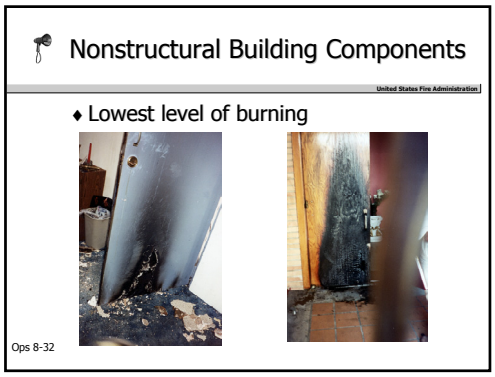
* Carefully evaluate extensive damage, such as holes burned through.
  - Are there signs of distinct patterns with respect to burned and unburned areas?
  - Is there a "V" pattern in the hole?
  - Is there evidence of burning with the wide, alligator type char of any wooden flooring material?
  - Is the mopboard burned at floor level?

Instructor Notes:

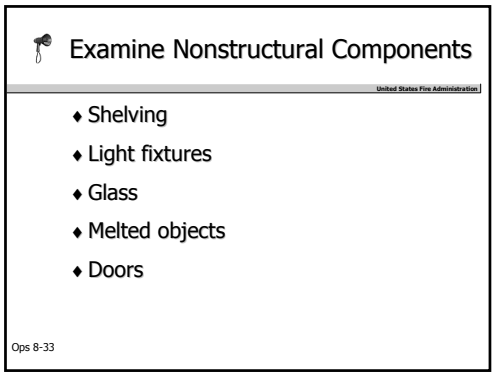
Stress that since this is normally a well-protected area, heavy burning here needs careful evaluation.

  - Is there evidence of burning in the door threshold?
  - Is there heavier burning in the normal traffic area?

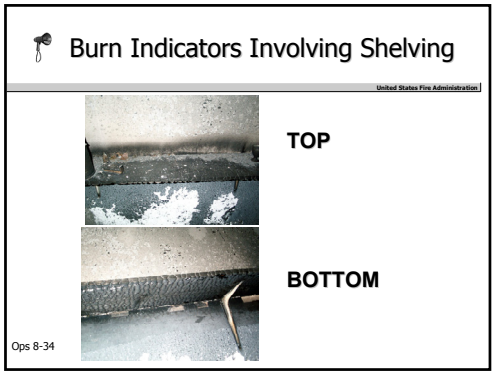
Slide 8-32: Nonstructural Building Components



Slide 8-33: Examine Nonstructural Components



Slide 8-34: Burn Indicators Involving Shelving

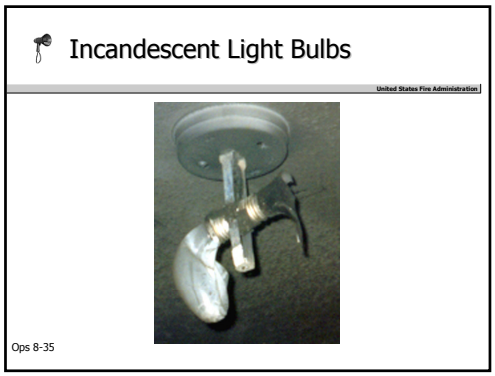


D. Nonstructural building components

Nonstructural building components may provide clues to the lowest level of fire activity.

- Shelving should be evaluated for burning on the bottom as well as on the top.
  - The top will often be protected by the material placed on it.
  - If shelves collapsed onto other shelves, find the lowest level of burning.

Slide 8-35: Incandescent Light Bulbs

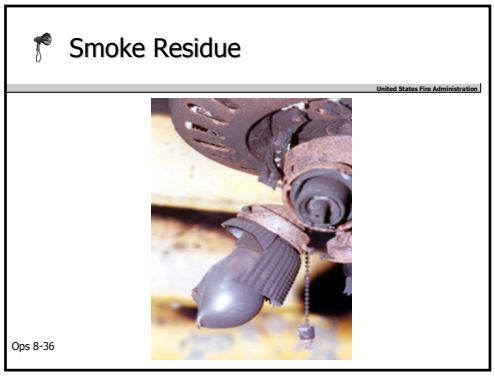


- Incandescent light bulbs may begin to distort when subjected to a temperature of 900°F for a length of 10 minutes and will usually distend in the direction of the fire origin or source of heat.

Instructor Notes:

The glass globe softens on the more heated side. As pressure rises inside the bulb, the hotter side of the bulb will expand toward the heat.

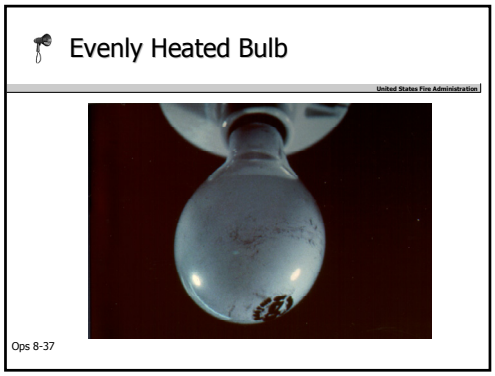
Slide 8-36: Smoke Residue



* Bulbs will usually have smoke residue on them.

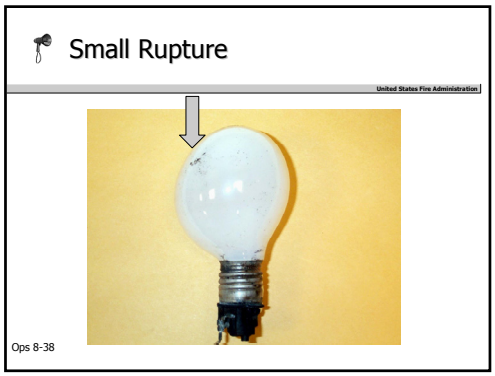
* The side toward the area of fire origin may have less residue.

Slide 8-37: Evenly Heated Bulb



* Bulbs heated evenly may not leave a pointing clue.

Slide 8-38: Small Rupture

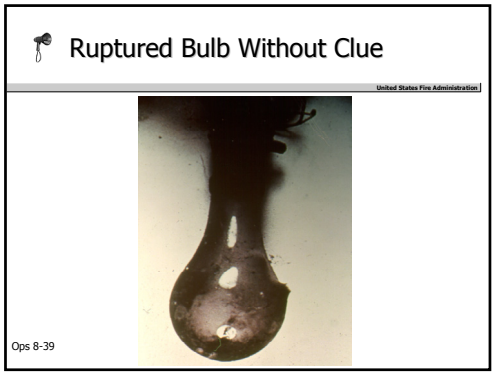


* Bulbs may rupture with only a small part of the glass globe missing.

Instructor Notes:

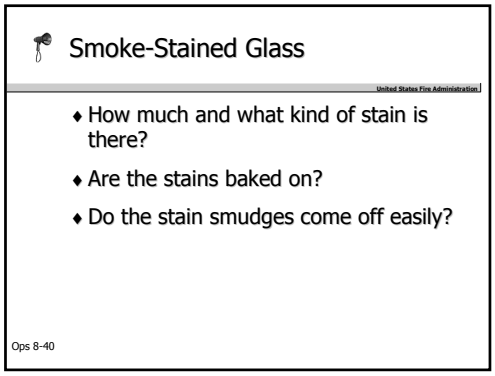
Explain how, at this point, the bulb would stop distending, as it is no longer able to build pressure inside to push the soft glass toward the hottest area of the fire.

Slide 8-39: Ruptured Bulb Without Clue



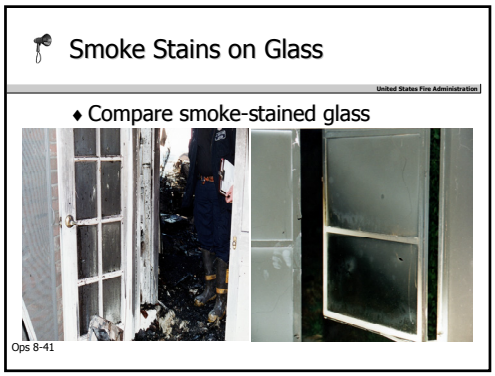
* Bulbs may distort in such a manner that no significant clues remain.

Slide 8-40: Smoke-Stained Glass



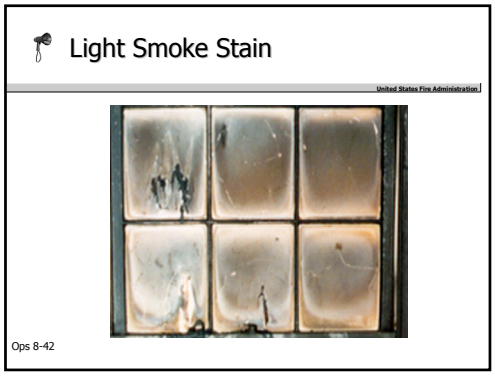
- Smoke-stained window glass can provide significant clues regarding fire origin and spread.

Slide 8-41: Smoke Stains on Glass



* Compare smoke-stained glass throughout the structure.
* Glass may provide clues about the area of fire origin or areas remote from fire origin.
* This should never be used as the sole investigative tool.

Slide 8-42: Light Smoke Stain

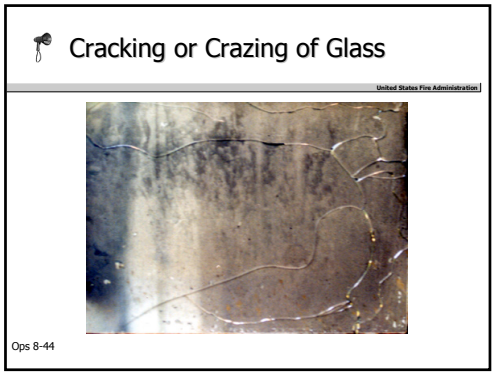


* Smoke stains vary with the type of combustible material involved.
  - Light smoke residue may indicate limited fire damage, an intense-heat area, or rapid fire growth.
  - Heavy smoke residue may indicate a slow fire and heat buildup.
  - Smoke could be in a location remote from the fire.
  - Smoke residue that will smudge off the glass may indicate remoteness from the high heat area.

Slide 8-43: Heavy Smoke Stain

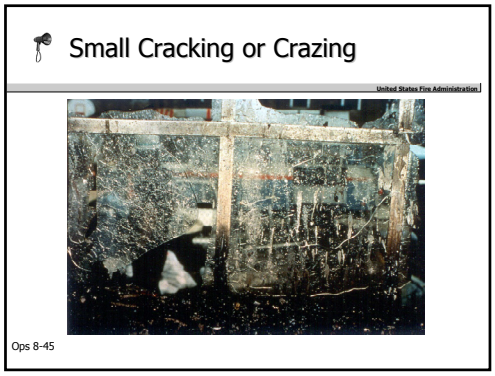
– Smoke residue that will not smudge off (baked on) may indicate proximity to a high level of heat.

Slide 8-44: Cracking or Crazing of Glass



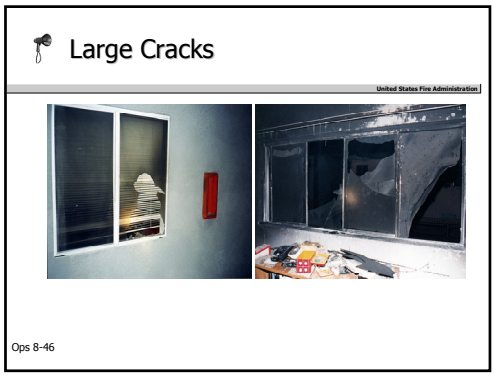
- Cracking or crazing (fine irregular cracks) may result from high heat levels.

Slide 8-45: Small Cracking or Crazing



* Smaller cracking or crazing of the glass may indicate proximity to a high heat source.

Slide 8-46: Large Cracks



* Larger and less crazing of the glass may indicate it was remote from the high heat source.

- Broken glass may indicate the heat level in the area.

  * Large broken pieces may indicate that the glass is in an area of low or slow heat build-up.

Instructor Notes:

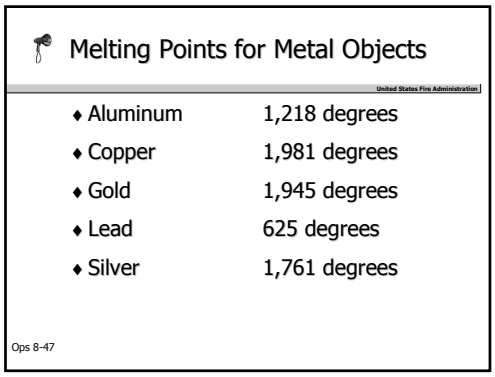
Reiterate that the heavier the smoke residue on a piece of glass, the greater the distance from the main area of the fire.

  * Smaller broken pieces may indicate that the glass was in an area of high heat or near a rapidly developing fire.

Instructor Notes:

Point out that the lighter the smoke residue on a piece of glass, the closer it was to the main area of the fire.

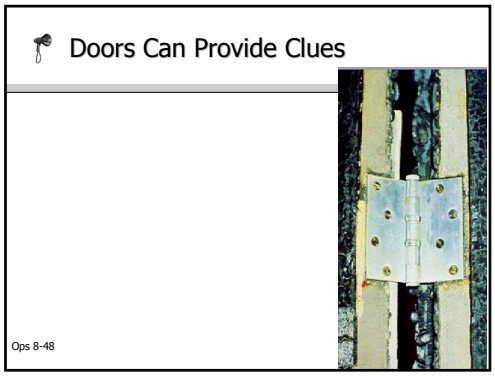
Slide 8-47: Melting Points for Metal Objects



- Metal objects may melt or burn, and the temperature at which they melt may provide an indication of the temperature in that area.

Material	Melting Point (F)
Aluminum	1,220
Brass	1,570 to 1,900
Copper wire	1,981
Gold	1,945
Lead	625
Silver	1,761

Slide 8-48: Doors Can Provide Clues



- Doors can also provide clues about fire travel.
  - Doors closed at the time of a fire should exhibit an even burn pattern.
  - The edges of a door should be protected from burning or charring.
  - Doors closed at the time of the fire with fire damage on the bottom side may indicate use of flammable liquids.
  - Doors open at the time of the fire should exhibit a distinct burn pattern.
    - Burning should be greater at the hinged side of the door.

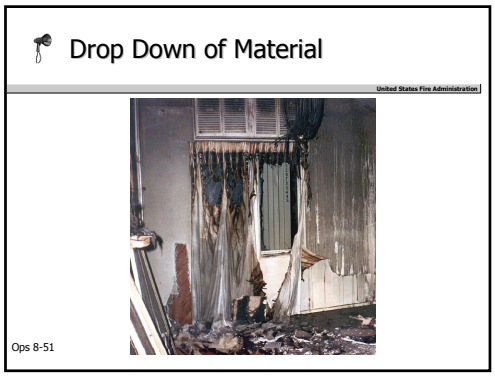
Slide 8-49: Lowest Level of Burning

Slide 8-50: Lowest Level of Burning (continued)

- If the fire came from low burning, the burn pattern on the door should be at an angle.

- The lowest level of burning must be evaluated.
  - It could lead to the area or point of fire origin.

Slide 8-51: Drop Down of Material

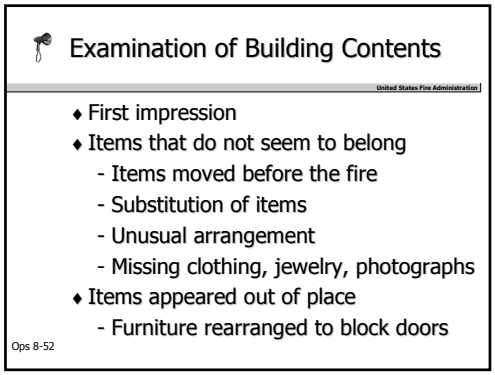


* It could be the result of a secondary fire resulting from burning material dropping below the original point of origin.

Instructor Notes:

Explain the following example. A fire that originates in the attic of a wood-frame, balloon-type construction dwelling may have burning material drop down an open-wall stud area. The second fire will point to a level of burning below the area of fire origin.

Slide 8-52: Examination of Building Contents



IX. Examination of Building Contents (10 minutes)

A. First impression

- Look for items there that do not seem to belong.
  * Were additional items moved into or out of the area before the fire occurred?
  * Have cheaper items been substituted for more expensive items?
  * Were items arranged in an unusual way?

Instructor Notes:

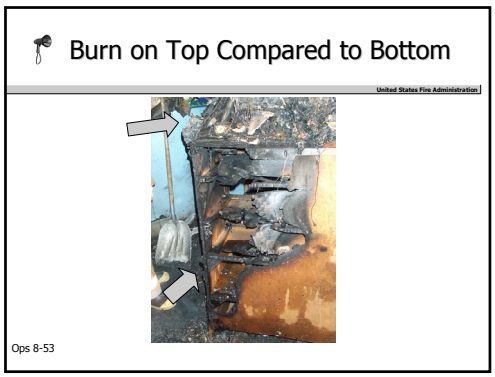
A large pile of clothing placed on a bed

and set on fire may indicate an interpersonal or domestic problem.

- Were items placed in a safe area as opposed to one not normally secured?
- Is clothing missing from the closets?

- Do items appear to be out of place?
  - Were furniture or other items conveniently rearranged for a fire?
  - Was furniture used to block doors and make entry difficult?

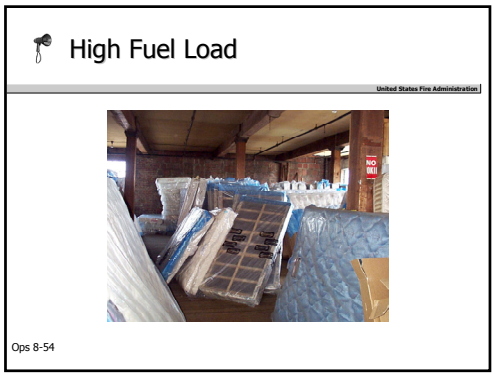
Slide 8-53: Burn on Top Compared to Bottom



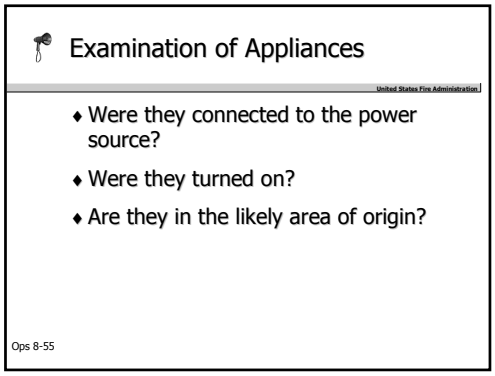
B. Examination of contents

- Furniture may provide clues to the area of fire origin or path of fire travel.
  - Is one side burned more heavily than another?
  - Is it burned more on the top than on the bottom?

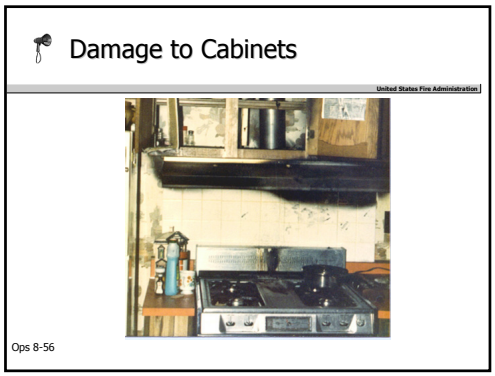
Slide 8-54: High Fuel Load



Slide 8-55: Examination of Appliances



Slide 8-56: Damage to Cabinets



* Was there a high fuel load?

Instructor Notes:

Stress that furniture with a lot of foam padding will produce a high level of heat.

* Are the legs or feet of furniture burned at or near the floor?

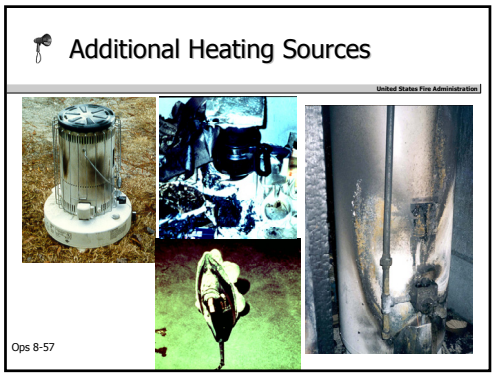
- Examination of appliances may reveal whether the damage was related to the cause of the fire or was the result of the fire.

  * If the power switch can be located, was the power on or off?

  * Were the appliances plugged in at the time of the fire?

  * Is the appliance case or cabinet more heavily damaged on the inside or outside?

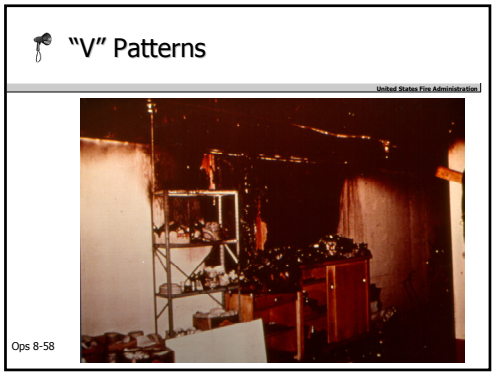
Slide 8-57: Additional Heating Sources



* Is there any indication that the fire originated at or near an appliance?

* Heating sources such as a kitchen stove, heater, iron, or other appliance should be carefully evaluated.

Slide 8-58: "V" Patterns



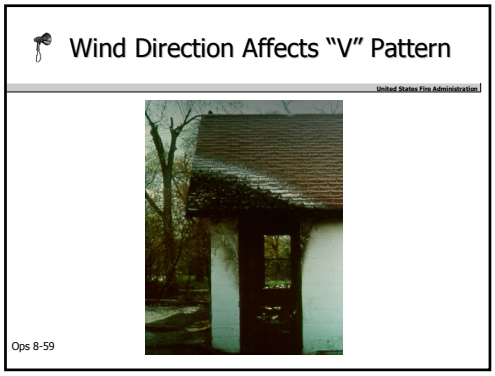
X. Reading Fire Patterns (10 minutes)

A. "V" patterns

The characteristic pattern from an accidental fire is usually a "V" near the fire area.

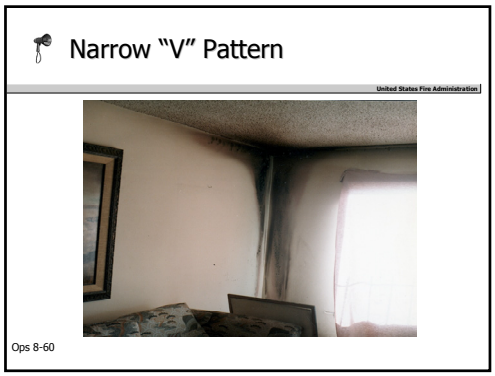
- Fire normally progresses upward and outward.

Slide 8-59: Wind Direction Affects "V" Pattern



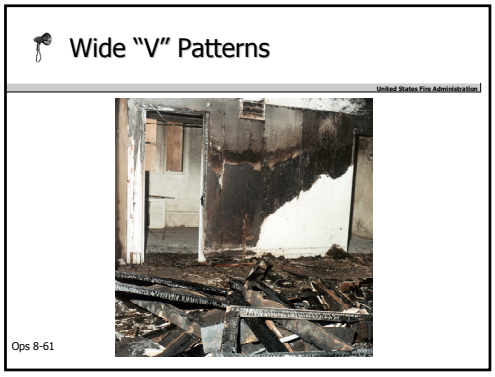
* Wind direction associated with ventilation may affect this.

Slide 8-60: Narrow "V" Pattern



* A quick and intense fire may produce a narrow "V" pattern.
  - The hotter the fire, the faster the products of combustion will rise.
  - Ceiling damage above the narrow "V" pattern will usually be significant.

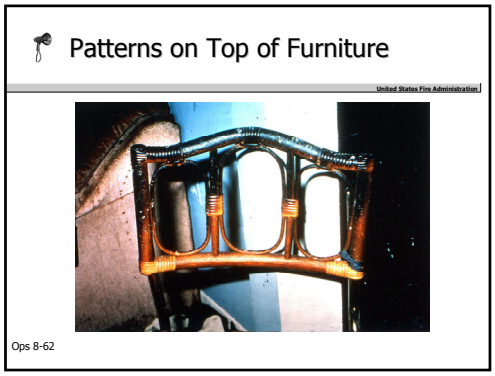
Slide 8-61: Wide "V" Patterns



* A fire of accidental origin may leave a large "V" pattern across several parts of a structure.

- "V" patterns may start on the top of shelves, tables, dressers, or other items raised off the floor.

Slide 8-62: Patterns on Top of Furniture



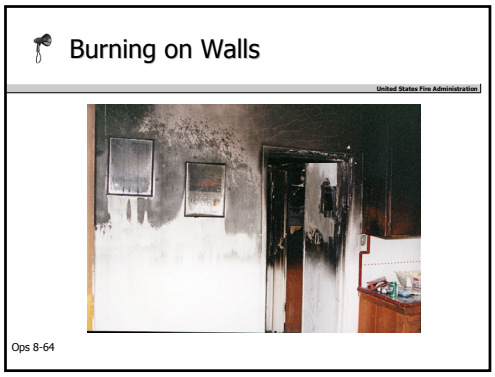
* Fires on tops of dressers, shelves, and tables should be evaluated for a cause.

* Look for electrical items, evidence of smoking materials, or possible accelerants (indicated by deep charring of the surface).

Slide 8-63: "V" Patterns at Base of Wall

- Examine "V" patterns at the base of walls for sources of ignition.
  - Sources of ignition, such as trash containers, are common.
  - Was anything moved during the fire suppression efforts?

Slide 8-64: Burning on Walls



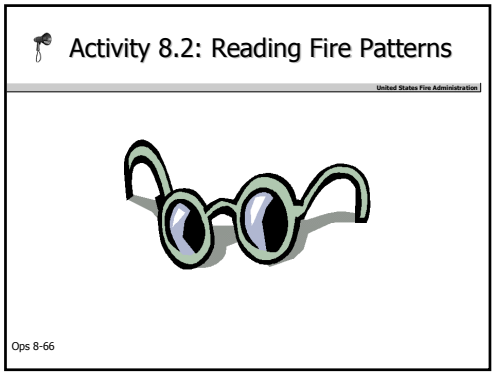
B. Reading fire travel

- As fire travels through a structure, it leaves a trail.
- Relatively even burning on walls indicates burning from a thermal banking down of heat.
- This generally results from the fire and is not at the origin of the fire.
  - Damage primarily caused by heat will show a lack of deep-seated burning.
  - Items at a low level may be undamaged, while items at a higher level are charred.

Slide 8-65: Block Normal Travel of Fire

- Items in the path of the fire, such as shelves, may block the normal travel of the fire.

Slide 8-66: Activity 8.2: Reading Fire Patterns



XI. Activity 8.2: Reading Fire Patterns (45 minutes)

Instructor Notes:

Refer students to Activity 8.2, Reading Fire Patterns, in their student manuals.

Activity 8.2:
Reading Fire Patterns

Time: 45 minutes

Purpose:

To reinforce the ability to read fire patterns that will help determine the area of fire origin.

Materials:

- Visuals
- Student Activity Worksheets (provided in the student manuals)

Directions:

1. Divide the class into small groups and ask each group to select a spokesperson.

2. If time permits, you may have each group complete both scenarios. If there is time for only one activity, assign only one scenario to a group.

3. Have the groups read their assigned scenarios. After the groups have finished reading, show them the slide that goes with each scenario.

4. Allow each group 15 minutes to answer the questions regarding its assigned scenario.

5. Allow 30 minutes for group presentations. Call on one group for a report on the first scenario. Ask other groups with the same scenario if they concur and if they have anything to add.

6. Select another group for the second scenario and ask other groups for concurrence or additions.

Scenario 1

Slide 8-67

Your department has just extinguished a fire in the workshop area of a one-stall garage located at the rear of a single-family residence. The garage is 24’ by 14’ and has block walls and a wooden roof. The ceiling is 1/2” drywall material over wooden structural members.

The garage has one electric light fixture in the center and one clamp-on fixture on a workbench adjacent to the area of fire origin.

The owner informed you that about 30 minutes before the fire he had plugged in an electric heater used to strip paint. He had placed it on the edge of the garbage can to heat up while he went to the basement to get the chair he was going to strip. Beside the garbage can was a plastic bag filled with clean rags.

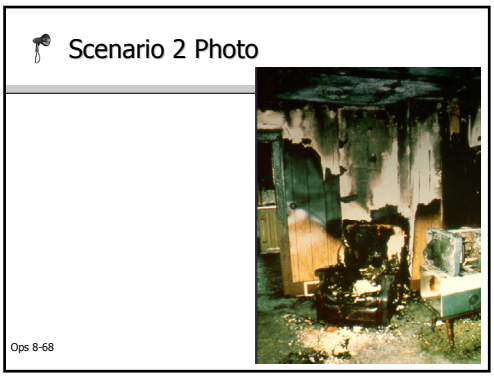
From the basement, his wife saw smoke and called the fire department.

You are the officer dispatched to this location for a smoke investigation. Upon arrival, you found the small fire and quickly extinguished it.

Now you are trying to read the fire patterns to determine the area of fire origin and a possible cause. You will determine if the fire is accidental or if you should call a fire investigator.

Scenario 2

Slide 8-68



Your department received a call for a smoke investigation. Upon arrival at the one-story, wood-frame (platform type), single-family dwelling, you found the doors locked and no one at home; you had to force entry into the dwelling. You also noticed a "For Sale" sign in the front yard, apparently there for some time.

There was a fire in a reclining chair in the living room. Fire also had reached the wall covering and the ceiling area directly above the chair. Your crew quickly extinguished the fire. One corner of the living room was damaged, and there was some light smoke damage throughout the house.

Soon after extinguishment, the owner arrived and appeared to have been drinking. He was belligerent and kept asking if you knew what caused the fire. He said you should have let the place burn down. Soon, however, he seemed to collect himself and settle down. He returned to the living room and started talking about all the trouble he had been having with the television and that certainly it must have been the cause of the fire.

As you examine the walls, the chair, and the ceiling area, he continually tries to draw your attention to the television set that is out of its case and plugged in. He tells you that he had only been gone to the store about 20 minutes to buy beer. He states that he does not smoke and no one else has been in the house for two days.

Can you determine the area of origin and the fire cause? Do you need to call in an investigator?

Activity 8.1:
Reading Fire Patterns
Instructor Answer Key

Scenario 1

1. Is there a distinctive fire pattern? If yes, describe it.

Response:

Yes, there is a distinctive "V" pattern starting on the floor to the left of the garbage can. A smaller "V pattern directly over the garbage can appears to be secondary and was possibly a result of something in the can that was ignited.

2. Do you have an opinion on where the fire started? If yes, support your opinion with observations.

Responses:

The fire originated at floor level at the bottom of the "V" pattern.

Observations that support the opinion:

- The heating element placed on the lower shelf could have been the source of ignition.
- The lowest level of char is at floor level.
- The underside of the top shelf is burned.
- Some of the boards of the lower shelf burned through and fell to the floor and onto the garbage can.

3. Do you need to call a fire investigator to conduct an investigation?

Response:

(The responses may vary depending upon fire department operating procedures.)

The area of fire origin and the fire cause were adequately determined and so allow the case to be closed. The fire appears to have been accidental.

Scenario 2

1. Is there a distinctive fire pattern? If yes, describe it.

Response:

Yes there is a distinctive "V" pattern that starts at the chair and then goes up and out from there.

2. Does the television appear to be the cause of the fire as indicated by the owner?

Response:

No, the television set does not appear to be the cause of the fire. It is not in the area of fire origin. It is not at the lowest level of fire damage and appears to be a "victim" rather than a cause of the fire.

3. Does the ceiling damage over the chair appear to be consistent with the fire in the chair?

Response:

Yes. Part of the ceiling material has fallen, and the rest of the sheets are hanging loose.

4. Do you feel it necessary to call in a fire investigator?

Response:

Yes. There is no apparent cause for the fire to originate in the chair. The owner stated he left only 20 minutes before and was trying to draw you away from the chair by insisting that the television was the cause of the fire.

Summary

In concluding the activity, stress that the ability to read patterns after a fire is critical to the determination of the area fire origin. The discrimination between an area of fire origin and other burn patterns caused by the fire is an essential part of fire cause determination.

Activity 8.2:
Reading Fire Patterns
Student Activity Worksheet

Time: 45 minutes

Purpose:

To reinforce the ability to read fire patterns that will help determine the area of fire origin.

Directions:

1. Your instructor will divide the class into small groups and ask each group to select a spokesperson.
2. If time permits, you may be asked to complete both scenarios.
3. Read the assigned scenario.
4. You have 15 minutes to answer the questions regarding your assigned scenario.
5. Be prepared to report to the class.

Scenario 1

Your department has just extinguished a fire in the workshop area of a one-stall garage located at the rear of a single-family residence. The garage is 24' by 14' and has block walls and a wooden roof. The ceiling is 1/2" drywall material over wooden structural members.

The garage has one electric light fixture in the center and one clamp-on fixture on a workbench adjacent to the area of fire origin.

The owner informed you that about 30 minutes before the fire he had plugged in an electric heater used to strip paint. He had placed it on the edge of the garbage can to heat up while he went to the basement to get the chair he was going to strip. Beside the garbage can was a plastic bag filled with clean rags.

From the basement, his wife saw smoke and called the fire department.

You are the officer dispatched to this location for a smoke investigation. Upon arrival, you found the small fire and quickly extinguished it.

Now you are trying to read the fire patterns to determine the area of fire origin and a possible cause. You will determine if the fire is accidental or if you should call a fire investigator.

1. Is there a distinctive fire pattern? If yes, describe it.

_____

_____

_____

_____

_____

2. Do you have an opinion on where the fire started? If yes, support your opinion with observations.

_____

_____

_____

_____

_____

3. Do you need to call a fire investigator to conduct an investigation?

_____

_____

_____

_____

_____

Notes:

Scenario 2

Your department received a call for a smoke investigation. Upon arrival at the one-story, wood-frame (platform type), single-family dwelling, you and your company found the doors locked and no one at home; you had to force entry into the dwelling. You also noticed a "For Sale" sign in the front yard, apparently there for some time.

There was a fire in a reclining chair in the living room. Fire also had reached the wall covering and the ceiling area directly above the chair. Your crew quickly extinguished the fire. One corner of the living room was damaged, and there was some light smoke damage throughout the house.

Soon after extinguishment, the owner arrived and appeared to have been drinking. He was belligerent and kept asking if you knew what caused the fire. He said you should have let the place burn down. Soon, however, the owner seemed to collect himself and settle down. He returned to the living room and started talking about all the trouble he had been having with the television and that certainly it must have been the cause of the fire.

As you examine the walls, the chair, and the ceiling area, he continually tries to draw your attention to the television set that is out of its case and is plugged in. He tells you that he had only been gone to the store about 20 minutes to buy beer. He states that he does not smoke and no one else has been in the house for two days.

Can you determine the area of origin and the fire cause? Do you need to call in an investigator?

1. Is there a distinctive fire pattern? If yes, describe it.

_____

_____

_____

_____

2. Does the television appear to be the cause of the fire as indicated by the owner?

_____

_____

_____

_____

3. Does the ceiling damage over the chair appear to be consistent with the fire in the chair?

_____

_____

_____

_____

4. Do you feel it necessary to call in a fire investigator?

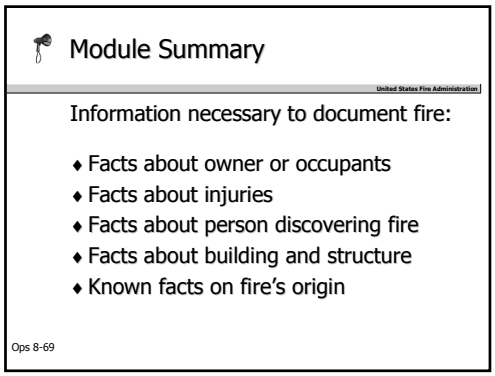
_____

_____

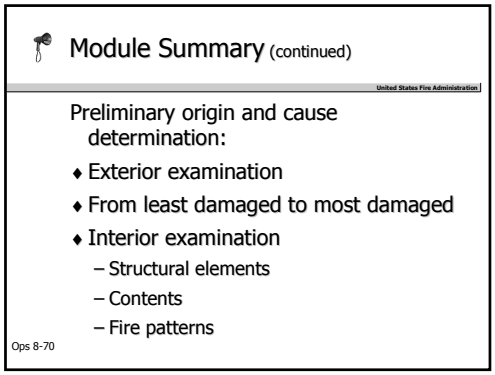
_____

_____

Slide 8-69: Module Summary



Slide 8-70: Module Summary (continued)



XII. Module Summary (5 minutes)

The role of the chief officer may include not only the suppression of the fire, but also the preliminary fire origin and cause determination.

- The chief officer should note critical information necessary to document the fire.

- Fire scene examination should be conducted in an organized manner, working from the least to most burned area.

- Fire origin determination should start with a thorough review of the outside of the structure and then of the inside.

- The interior examination focuses on examination of the structural elements and contents, in addition to reading fire patterns to determine the area of fire origin.

MODULE 8

APPENDIX

FIRE SCENE EXAMINATION

CHECKLIST

Fire Scene Examination Checklist

This checklist is provided to help the company officer and crew conduct a systematic examination of the fire scene to help determine the area of fire origin and the possible cause.

1. Should overhaul be delayed to allow fire cause determination?

   [ ] yes [ ] no

2. Exterior Examination Observations

   a. Classification of building construction_____

   b. Estimated age of construction_____

   c. Area(s) of greatest damage_____

   d. Area(s) where fire exited building_____

   e. Are there obvious "V" patterns? [ ] yes [ ] no

   f. Was building secure prior to the fire? [ ] yes [ ] no

   g. Are there any unusual signs or objects?_____

   h. Note anything unusual about the electrical system or equipment?

   _____

3. Interior Examination Observations

   a. What is the area of least damage?_____

   b. What is the area of most damage?_____

   c. Note damage to the following structural components.

      Door moldings_____

Walls_____

Ceiling_____

Floor_____

d. Note damage to the following nonstructural components:

Shelving_____

Incandescent light bulbs_____

Stained window glass_____

Broken window glass_____

Melted metal objects_____

Doors_____

4. Note the lowest level of burning._____

5. What is the source of fire or secondary fire?_____

6. Examination of Building Contents

Unusual items_____

Furniture_____

Appliances_____

7. Reading Fire Patterns

a. Narrow "V" patterns [ ] yes [ ] no

b. Wide or large "V" patterns [ ] yes [ ] no

8. Reading Fire Travel

   a. Even levels of burning [ ] yes [ ] no

   b. Lack of deep char [ ] yes [ ] no

Notes:

TESTS

TESTS

MODULES
1 THROUGH 8

Operations

Module 1: Application of the Incident Command System (ICS)

Test

Name: _____ **Date:** _____

Directions: Circle the letter of the correct answer in the following questions.

1. What ICS organizational element could the IC use to correct the span-of-control problem created by too many divisions and/or groups?

   A. Operations section
   B. Branches
   C. Planning section
   D. Task forces

2. Specified combinations of the same kind and type of resources with a common communications system and a leader defines a _____.

   A. Crew
   B. Task force
   C. Strike team
   D. Company

3. The _____ is responsible for collection, evaluation, dissemination, and use of information about the development of the incident and the status of resources.

   A. Information officer
   B. Situation status unit leader
   C. Operations section chief
   D. Planning section chief

4. The operations, planning, and logistics section chiefs are part of the _____.

   A. Command group
   B. General staff
   C. Staging area
   D. Command staff

5. Using the ABCD designation system, a division operating at the rear of the structure would be designated _____.

   A. Division C
   B. Division A
   C. Division B
   D. Division D

6. _____ are established to divide an incident into geographical areas of operation.

   A. Groups
   B. Branches
   C. Divisions
   D. Sections

7. The _____ has the authority to bypass chain of command to correct unsafe acts and remove persons from imminent danger.

   A. Liaison officer
   B. Safety officer
   C. Staging area manager
   D. Incident commander

8. Span-of-control is defined as the number of subordinates that one supervisor can manage effectively. The optimum number that can be managed is _____.

   A. Three
   B. Six
   C. Four
   D. Five

9. The operations section chief's function is established on complex incidents involving, or projected to involve, more than _____ single resources.

   A. 25
   B. 20
   C. 15
   D. None of the above

10. A group of resources that may be pre-established and sent to an incident is called a ___ _____.

   A. Crew
   B. Strike team
   C. Group
   D. Task force

Operations

Module 2: Incident Command Decision-Making

Test

Name: _____ **Date:** _____

Directions: Circle the letter of the correct answer in the following questions.

1. Using the classical method of decision-making, the decision-maker _____.

   A. Looks for certain critical cues, relates those cues to similar situations, and recalls previous conclusions, results and actions that best fit the situation.
   B. Gathers and analyzes information, recalls previous results and actions to fit the situation, and issues directives.
   C. Recognizes critical cues, determines and prioritized problems, selects tactics, and issues directives.
   D. Gathers and analyzes information, determines and prioritizes problems and solutions, selects tactics, and issues orders.

2. Place the letter of the command-sequence action on the right in the blank in front of that action's outcome on the left.

_____	Develop the IAP	A. Implementing the action plan
_____	Perform the tasks	B. Size up the situation
_____	Identify the problem	C. Designating strategy and tactics

3. The acronym WALLACE WAS HOT can be used during which of the following actions?

   A. Ongoing size-up
   B. Dispatch through on-scene size-up
   C. Analyzing pre-incident information
   D. Using RECEO VS

4. A law enforcement function that includes measures to identify, acquire, and plan the use of resources needed to anticipate, prevent, and/or resolve a threat or act of terrorism is _____.

   A. Crisis management
   B. Unified command
   C. Consequence management
   D. Resource management

5. Place the letter of the term on the right in the blank in front of the statement on the left that is true for the term.

_____	Answer "What must be done?"	A. Tactics
_____	Completed within a designated time	B. Strategies
_____	Statements of guidance and direction	C. Objectives

Operations

Module 3: Incident Action Plan (IAP)/Planning

Test

Name: _____ **Date:** _____

Directions: Circle the letter of the correct answer in the following questions.

1. A written IAP should be considered when _____.

   A. Responding to a room-and-contents fire
   B. Two or more jurisdictions are involved
   C. The incident is long in duration
   D. Both A and B
   E. Both B and C

2. The planning section consists of which four primary units?

   A. Situation, time, documentation, and demobilization
   B. Communications, resource, facilities, and documentation
   C. Resource, situation, documentation, and demobilization
   D. Resource, situation, time, and documentation

3. The situation unit is responsible for _____.

   A. Maintaining a status-keeping system
   B. Developing maps
   C. Maintaining accurate, up-to-date incident files
   D. Overseeing the check-in of all resources

4. The IAP contains the general control objectives, including the _____ and specific action plans.

   A. Safety procedures
   B. Incident strategy
   C. Incident commander's notebook
   D. Emergency tactics

5. The first three steps in the incident action plan cycle are _____.

   A. Understanding the situation, developing tactical directions and work assignments, and conducting a planning meeting
   B. Establishing incident objectives and strategy, developing tactical direction and work assignments, and conducting a planning meeting
   C. Understanding the situation, establishing incident objectives and strategy, and preparing the incident action plan
   D. Understanding the situation, establishing incident objectives and strategy, and developing tactical direction and work assignments

6. _____ are always developed around a specific operational period.

   A. Objectives
   B. Strategies
   C. Work assignments
   D. Incident priorities

7. _____ describes elements of the ICS organization that will be in place for the next operational period.

   A. Assignment List (ICS Form 204)
   B. Organization Assignment List (ICS Form 203)
   C. Incident Objectives (ICS Form 202)
   D. Incident Briefing (ICS Form 201)

8. During the operations briefing, who is responsible for reviewing incident boundaries, division breaks, group locations, and drop points?

   A. Situation unit leader
   B. Logistics section chief
   C. Incident commander
   D. Operations section chief

9. The length of an operational period depends on the length of time needed to achieve the tactical objectives, availability of fresh resources, the environment,

   and _____.

   A. The number of agencies involved
   B. Personnel safety
   C. The incident organization
   D. Completion of the IAP

10. The documentation unit is responsible for _____.

   A. Collecting and processing information on the current incident situation
   B. Maintaining a master list of all resources
   C. Maintaining up-to-date incident files on all incident-related documentation
   D. Preparing situation summaries

Operations

Module 4: ICS for EMS

Test

Name: _____ **Date:** _____

Directions: Circle the letter of the correct answer in the following questions.

1. The responsibilities of the rescue/extrication group supervisor include _____.

   A. Designating unit leaders and treatment area locations
   B. Coordinating patient transportation to the triage area
   C. Determining resources needed to extricate patients
   D. Both A and B
   E. Both B and C

2. The medical group supervisor is responsible for _____.

   A. Ensuring activation of the hospital alert system
   B. Sorting patients based on their current medical conditions
   C. Rendering prompt, efficient treatment in accordance with ALS/BLS protocols
   D. Requesting air and ground ambulances

3. When using the S.T.A.R.T. system of triage, you assess three basic vital signs in what order?

   A. Ventilation, mental status, perfusion
   B. Perfusion, ventilation, mental status
   C. Ventilation, perfusion, mental status
   D. Mental status, ventilation, perfusion

4. Which of the following statements about S.T.A.R.T. is false?

   A. Assessing by mechanism of injury takes more medical expertise than using S.T.A.R.T.
   B. When you assess perfusion, you assess capillary refill.
   C. S.T.A.R.T. uses standard triage tags.
   D. If the victim's respirations are less than 30 per minute, tag immediate and move on.

5. Which of the following statements is true?

   A. The treatment dispatch manager reports to the patient transportation group supervisor.
   B. The medical communications coordinator maintain the status of medical facility availability and capability.
   C. In the expanded ICS for EMS, the staging area manager advises the operations section chief when a particular type of resource is near minimum reserve level.
   D. The triage unit leader follows ALS/BLS protocols.

Operations

Module 5: Health and Safety Officer, Laws and Standards

Test

Name: _____ **Date:** _____

Directions: Circle the letter of the correct answer in the following questions.

1. Health risk factors that affect firefighters on the fireground include lack of a regular exercise program, cardiovascular disease, and _____.

   A. Infection
   B. Cancer
   C. High blood pressure
   D. Alcoholism

2. A hearing protection program is mandated under OSHA and should address which of the following requirements?

   A. Optional protection for personnel on apparatus
   B. Annual testing
   C. Baseline audiometric test
   D. Both A and B
   E. Both B and C

3. Which category makes up the largest category of workers' compensation injuries?

   A. Hearing loss
   B. Back injuries
   C. Skin cancer
   D. Lung disease

4. A physical fitness program should include fitness assessment, fitness standards, and _____.

   A. Medical screening
   B. Health promotion
   C. Vaccinations
   D. Exposure-control plan

5. Which of the following statements is false?

   A. An exposure-control plan would outline practices for medical treatment, post-exposure evaluation, and follow-up.
   B. An employee's medical record is to be maintained for the duration of employment plus 30 years.
   C. The employee's individual health file is not required to show results of physical performance tests, only regular medical examinations.
   D. Providing a monitoring device to gauge how firefighters are reacting physiologically to stress in an operation is a recommended rehabilitation practice.

Operations

Module 6: Incident Safety Officer and Risk Management

Test

Name: _____ **Date:** _____

Directions: Circle the letter of the correct answer in the following questions.

1. A risk management plan must be written, address all fire department regulations, and _____.

   A. All measures must be used in training
   B. Allow for constant change
   C. Contain elements of classic risk management
   D. Both A and B
   E. Both A and C

2. Which of the following statements is false?

   A. An Incident Safety Plan may be unwritten at small incidents.
   B. The Incident Safety Officer (ISO) may wait until after an incident to confirm documentation requirements.
   C. The ISO must have structural fire knowledge, EMS knowledge, and special operations knowledge.
   D. Written SOGs ensure proper response and appointment of an ISO when needed.

3. Duties of the ISO include monitoring and enforcing safety procedures at incidents, recognizing potential hazards, and _____.

   A. Reporting to the operations section chief
   B. Performing tactical operations only when there is an immediate threat to safety
   C. Performing the Health and Safety Officer's duties when he or she is unavailable
   D. Reporting to the medical group leader

4. Which of the following statements is true?

   A. The ISO may modify the Incident Action Plan to improve responder safety.
   B. If more than one ISO is at an incident, each ISO reports to the Incident Commander.
   C. The ISO persuades responders to follow safety procedures.
   D. The ISO assists the IC in addressing safety of responders.

5. When composing and placing Rapid Intervention Crews (RICs), the ISO must _____.

   A. Ensure the RICs monitor the tactical radio channel
   B. Develop tactical objectives for the current incident
   C. Ensure four members are available to assist personnel in immediate danger
   D. Follow initial interior structural firefighting operations

Operations

Module 7: Fire Cause Determination I

Test

Name: _____ **Date:** _____

Directions: Circle the letter of the correct answer in the following questions.

1. The fuel _____ burns with white to gray smoke.

   A. Cooking oil
   B. Lubrication oil
   C. Turpentine
   D. Benzene

2. The ratio of weight of a volume of a given gas to an equal volume of air is called _____ .

   A. Specific gravity
   B. Relative humidity
   C. Relative gravity
   D. Vapor density

3. During size-up, observe _____.

   A. Difficulty of entry
   B. Whether utilities are operational
   C. How the fire vented itself
   D. Whether fire detection equipment is disabled

4. Pyrolysis is _____.

   A. The explosion that results from a backdraft
   B. The evaporation of a gas from a container
   C. The chemical decomposition of matter through the action of heat
   D. The opposite of the chemical process of hydrolysis

5. The fuel _____ burns with yellow to white flames.

   A. Wood
   B. Lacquer
   C. Turpentine
   D. Kerosene

Operations

Module 8: Fire Cause Determination II

Test

Name: _____ **Date:** _____

Directions: Circle the letter of the correct answer in the following questions.

1. Examine the fire scene from _____.

   A. Inside to outside and least damaged to most damaged
   B. Outside to inside and lightly charred to heavily charred
   C. Outside to inside and heavily smoke-stained to lightly smoke-stained
   D. Inside to outside and most damaged to least damaged

2. The point of origin of the fire is usually found at the _____.

   A. Highest level of burning
   B. Mid-level of burning
   C. Lowest level of burning

3. Light bulbs usually begin to swell or distort when exposed to _____.

   A. 500°F for about 5 minutes
   B. 750°F for about 7 minutes
   C. 900°F for about 10 minutes
   D. 1,150°F for about 10 minutes

4. Which of the following statements is true?

   A. A light bulb will often have less carbon and soot on the side away from the fire than on the side toward the fire.
   B. If a door is closed during a fire, it will be more heavily burned at the top than at the bottom.
   C. Window glass that is heavily covered with black carbon was most likely not near the area of fire origin.
   D. Crazing is caused when air passes over glass and cools it, causing it to crack.

5. When undisturbed, the angle between plume and the vertical axis is about _____ degrees.

   A. 15
   B. 20
   C. 10
   D. 25

ANSWER KEYS

ANSWER KEYS

MODULES 1 THROUGH 8

Operations

Module 1: Application of the Incident Command System (ICS)

Answer Key

1. What ICS organizational element could the IC use to correct the span-of-control problem created by too many divisions and/or groups.

   A. Operations section
   B. **Branches (SM 1-38)**
   C. Planning section
   D. Task forces

2. Specified combinations of the same kind and type of resources with a common communications system and a leader defines a _____.

   A. Crew
   B. Task force
   C. **Strike team (SM 1-21)**
   D. Company

3. The _____ is responsible for collection, evaluation, dissemination, and use of information about the development of the incident and the status of resources.

   A. Information officer
   B. Situation status unit leader
   C. Operations section chief
   D. **Planning section chief (SM 1-17)**

4. The operations, planning, and logistics section chiefs are part of the _____.

   A. Command group
   B. **General staff (SM 1-13)**
   C. Staging area
   D. Command staff

5. Using the ABCD designation system, a division operating at the rear of the structure would be designated _____.

   A. **Division C (SM 1-26)**
   B. Division A
   C. Division B
   D. Division D

6. _____ are established to divide an incident into geographical areas of operation.

   A. Groups
   B. Branches
   C. **Divisions (SM 1-25)**
   D. Sections

7. The _____ has the authority to bypass chain of command to correct unsafe acts and remove persons from imminent danger.

   A. Liaison officer
   B. **Safety officer (SM 1-15)**
   C. Staging area manager
   D. Incident commander

8. Span-of-control is defined as the number of subordinates that one supervisor can manage effectively. The optimum number that can be managed is _____.

   A. Three
   B. Six
   C. Four
   D. **Five (SM 1-9)**

9. The operations section chief's function is established on complex incidents involving, or projected to involve, more than _____ single resources.

   A. 25
   B. **20 (SM 1-16)**
   C. 15
   D. None of the above

10. A group of resources that may be pre-established and sent to an incident is called a _____.

   A. Crew
   B. Strike team
   C. Group
   D. **Task force (SM 1-20)**

Operations

Module 2: Incident Command Decision-Making

Answer Key

1. Using the classical method of decision-making, the decision-maker _____.

   A. Looks for certain critical cues, relates those cues to similar situations, and recalls previous conclusions, results and actions that best fit the situation.

   B. Gathers and analyzes information, recalls previous results and actions to fit the situation, and issues directives.

   C. Recognizes critical cues, determines and prioritized problems, selects tactics, and issues directives.

   D. **Gathers and analyzes information, determines and prioritizes problems and solutions, selects tactics, and issues orders. (SM 2-4)**

2. Place the letter of the command-sequence action on the right in the blank in front of that action's outcome on the left.

C (SM 2-7)	Develop the IAP	A. Implementing the action plan
A (SM 2-7)	Perform the tasks	B. Size up the situation
B (SM 2-7)	Identify the problem	C. Designating strategy and tactics

3. The acronym WALLACE WAS HOT can be used during which of the following actions?

   A. Ongoing size-up

   B. **Dispatch through on-scene size-up (SM 2-11)**

   C. Analyzing pre-incident information

   D. Using RECEO VS

4. A law enforcement function that includes measures to identify, acquire, and plan the use of resources needed to anticipate, prevent, and/or resolve a threat or act of terrorism is _____.

   A. **Crisis management (SM 2-35)**
   B. Unified command
   C. Consequence management
   D. Resource management

5. Place the letter of the term on the right in the blank in front of the statement on the left that is true for the term.

B (SM 2-8)	Broad goals to control an incident	A. Tactics
A (SM 2-8)	Completed within a designated time	B. Strategies
C (SM 2-8)	Statements of guidance and direction	C. Objectives

Operations

Module 3: Incident Action Plan (IAP)/Planning

Answer Key

1. A written IAP should be considered when _____.

   A. Responding to a room-and-contents fire
   B. Two or more jurisdictions are involved
   C. The incident is long in duration
   D. Both A and B
   E. **Both B and C (SM 3-25)**

2. The planning section consists of which four primary units?

   A. Situation, time, documentation, and demobilization
   B. Communications, resource, facilities, and documentation
   C. **Resource, situation, documentation, and demobilization (SM 3-10)**
   D. Resource, situation, time, and documentation

3. The situation unit is responsible for _____.

   A. Maintaining a status-keeping system
   B. **Developing maps (SM 3-11)**
   C. Maintaining accurate, up-to-date incident files
   D. Overseeing the check-in of all resources

4. The IAP contains the general control objectives, including the _____ and specific action plans.

   A. Safety procedures
   B. **Incident strategy (SM 3-18)**
   C. Incident commander's notebook
   D. Emergency tactics

5. The first three steps in the incident action plan cycle are _____.

   A. Understanding the situation, developing tactical directions and work assignments, and conducting a planning meeting
   B. Establishing incident objectives and strategy, developing tactical direction and work assignments, and conducting a planning meeting
   C. Understanding the situation, establishing incident objectives and strategy, and preparing the incident action plan
   D. **Understanding the situation, establishing incident objectives and strategy, and developing tactical direction and work assignments (SM 3-38)**

6. _____ are always developed around a specific operational period.

   A. Objectives
   B. Strategies
   C. **Work assignments (SM 3-38)**
   D. Incident priorities

7. _____ describes elements of the ICS organization that will be in place for the next operational period.

   A. Assignment List (ICS Form 204)
   B. **Organization Assignment List (ICS Form 203) (SM 3-46)**
   C. Incident Objectives (ICS Form 202)
   D. Incident Briefing (ICS Form 201)

8. During the operations briefing, who is responsible for reviewing incident boundaries, division breaks, group locations, and drop points?

   A. Situation unit leader
   B. Logistics section chief
   C. Incident commander
   D. **Operations section chief (SM 3-59)**

9. The length of an operational period depends on the length of time needed to achieve the tactical objectives, availability of fresh resources, the environment,

   and _____.

   A. The number of agencies involved
   B. **Personnel safety (SM 3-8)**
   C. The incident organization
   D. Completion of the IAP

10. The documentation unit is responsible for _____.

   A. Collecting and processing information on the current incident situation
   B. Maintaining a master list of all resources
   C. **Maintaining up-to-date files on all incident-related documentation (SM 3-11)**
   D. Preparing situation summaries

Operations

Module 4: ICS for EMS

Answer Key

1. The responsibilities of the rescue/extrication group supervisor include _____.

   A. Designating unit leaders and treatment area locations
   B. Coordinating patient transportation to the triage area
   C. Determining resources needed to extricate patients
   D. Both A and B
   E. **Both B and C (SM 4-9)**

2. The medical group supervisor is responsible for _____.

   A. **Ensuring activation of the hospital alert system (SM 4-10)**
   B. Sorting patients based on their current medical conditions
   C. Rendering prompt, efficient treatment in accordance with ALS/BLS protocols
   D. Requesting air and ground ambulances

3. When using the S.T.A.R.T. system of triage, you assess three basic vital signs in what order?

   A. Ventilation, mental status, perfusion
   B. Perfusion, ventilation, mental status
   C. **Ventilation, perfusion, mental status (SM 4-13 through 4-14)**
   D. Mental status, ventilation, perfusion

4. Which of the following statements about S.T.A.R.T. is false?

   A. Assessing by mechanism of injury takes more medical expertise than using S.T.A.R.T.
   B. When you assess perfusion, you assess capillary refill.
   C. S.T.A.R.T. uses standard triage tags.
   D. **If the victim's respirations are less than 30 per minute, tag immediate and move on. (SM 4-14)**

5. Which of the following statements is true?

   A. The treatment dispatch manager reports to the patient transportation group supervisor.
   B. **The medical communications coordinator maintains the status of medical facility availability and capability. (SM 4-31)**
   C. In the expanded ICS for EMS, the staging area manager advises the operations section chief when a particular type of resource is near minimum reserve level.
   D. The triage unit leader follows ALS/BLS protocols.

Operations

Module 5: Health and Safety Officer, Laws and Standards

Answer Key

1. Health risk factors that affect firefighters on the fireground include lack of a regular exercise program, cardiovascular disease, and _____.

   A. Infection
   B. Cancer
   C. High blood pressure
   D. **Alcoholism (SM 5-7)**

2. A hearing protection program is mandated under OSHA and should address which of the following requirements?

   A. Optional protection for personnel on apparatus
   B. Annual testing
   C. Baseline audiometric test
   D. Both A and B
   E. **Both B and C (SM 5-9)**

3. Which category makes up the largest category of workers' compensation injuries?

   A. Hearing loss
   B. **Back injuries (SM 5-9)**
   C. Skin cancer
   D. Lung disease

4. A physical fitness program should include fitness assessment, fitness standards, and _____.

   A. **Medical screening (SM 5-14)**
   B. Health promotion
   C. Vaccinations
   D. Exposure-control plan

5. Which of the following statements is false?

   A. An exposure-control plan would outline practices for medical treatment, post-exposure evaluation, and follow-up.
   B. An employee's medical record is to be maintained for the duration of employment plus 30 years.
   C. **The employee's individual health file is not required to show results of physical performance tests, only regular medical examinations. (SM 5-18 to 5-19)**
   D. Providing a monitoring device to gauge how firefighters are reacting physiologically to stress in an operation is a recommended rehabilitation practice.

Operations

Module 6: Incident Safety Officer and Risk Management

Answer Key

1. A risk management plan must be written, address all fire department regulations, and _____.

   A. All measures must be used in training
   B. Allow for constant change
   C. Contain elements of classic risk management
   D. Both A and B
   E. **Both A and C (SM 6-27)**

2. Which of the following statements is false?

   A. An Incident Safety Plan may be unwritten at small incidents.
   B. **The Incident Safety Officer (ISO) may wait until after an incident to confirm documentation requirements. (SM 6-9)**
   C. The ISO must have structural fire knowledge, EMS knowledge, and special operations knowledge.
   D. Written SOGs ensure proper response and appointment of an ISO when needed.

3. Duties of the ISO include monitoring and enforcing safety procedures at incidents, recognizing potential hazards, and _____.

   A. Reporting to the operations section chief
   B. **Performing tactical operations only when there is an immediate threat to safety (SM 6-8)**
   C. Performing the Health and Safety Officer's duties when he or she is unavailable
   D. Reporting to the medical group leader

4. Which of the following statements is true?

   A. The ISO may modify the Incident Action Plan to improve responder safety.
   B. If more than one ISO is at an incident, each ISO reports to the Incident Commander.
   C. The ISO persuades responders to follow safety procedures.
   D. **The ISO assists the IC in addressing safety of responders. (SM 6-40)**

5. When composing and placing Rapid Intervention Crews (RICs), the ISO must _____.

   A. **Ensure the RICs monitor the tactical radio channel (SM 6-54)**
   B. Develop tactical objectives for the current incident
   C. Ensure four members are available to assist personnel in immediate danger
   D. Follow initial interior structural firefighting operations

Operations

Module 7: Fire Cause Determination I

Answer Key

1. The fuel _____ burns with white to gray smoke.

   A. Cooking oil
   B. Lubrication oil
   C. Turpentine
   D. **Benzene (SM 7-12)**

2. The ratio of weight of a volume of a given gas to an equal volume of air is called _____ .

   A. Specific gravity
   B. Relative humidity
   C. Relative gravity
   D. **Vapor density (SM 7-26)**

3. During size-up, observe _____.

   A. Difficulty of entry
   B. Whether utilities are operational
   C. **How the fire vented itself (SM 7-10)**
   D. Whether fire detection equipment is disabled

4. Pyrolysis is _____.

   A. The explosion that results from a backdraft
   B. The evaporation of a gas from a container
   C. **The chemical decomposition of matter through the action of heat (SM 7-28)**
   D. The opposite of the chemical process of hydrolysis

5. The fuel _____ burns with yellow to white flames.

   A. Wood
   B. Lacquer
   C. **Turpentine (SM 7-12)**
   D. Kerosene

Operations

Module 8: Fire Cause Determination II

Answer Key

1. Examine the fire scene from _____.

   A. Inside to outside and least damaged to most damaged
   B. **Outside to inside and lightly charred to heavily charred (SM 8-8)**
   C. Outside to inside and heavily smoke-stained to lightly smoke-stained
   D. Inside to outside and most damaged to least damaged

2. The point of origin of the fire is usually found at the _____.

   A. Highest level of burning
   B. Mid-level of burning
   C. **Lowest level of burning (SM 8-27)**

3. Light bulbs usually begin to swell or distort when exposed to _____.

   A. 500°F for about 5 minutes
   B. 750°F for about 7 minutes
   C. **900°F for about 10 minutes (SM 8-25)**
   D. 1,150°F for about 10 minutes

4. Which of the following statements is true?

   A. A light bulb will often have less carbon and soot on the side away from the fire than on the side toward the fire.

   B. **If a door is closed during a fire, it will be more heavily burned at the top than at the bottom. (SM 8-25)**

   C. Window glass that is heavily covered with black carbon was most likely not near the area of fire origin.

   D. Crazing is caused when air passes over glass and cools it, causing it to crack.

5. When undisturbed, the angle between plume and the vertical axis is about _____ degrees.

   A. **15 (SM 8-29)**

   B. 20

   C. 10

   D. 25