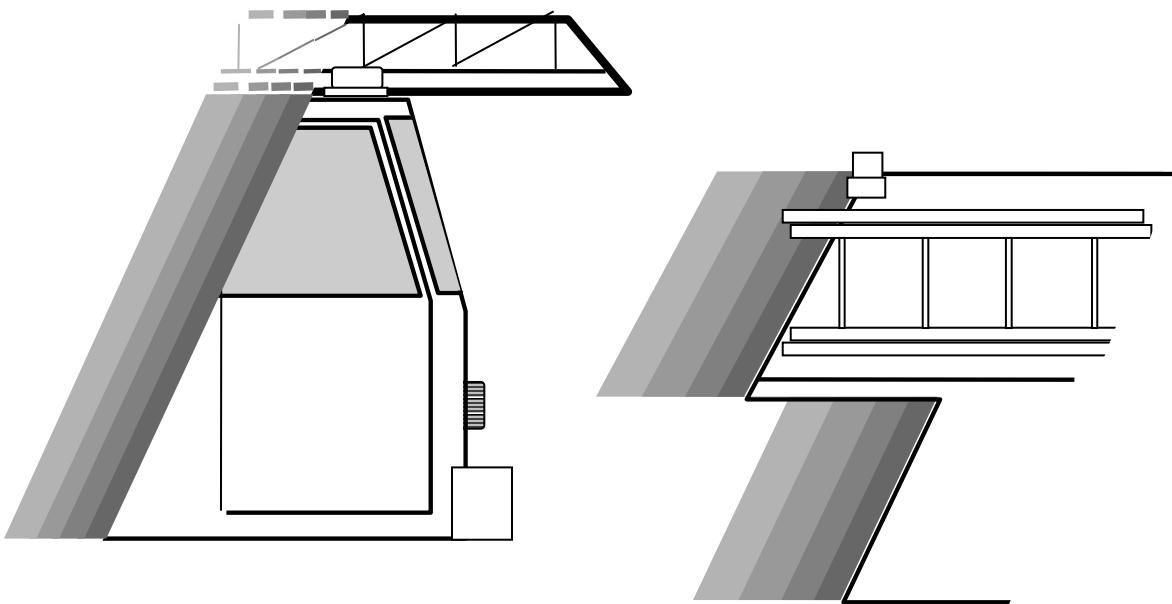


MANAGING COMPANY TACTICAL OPERATIONS



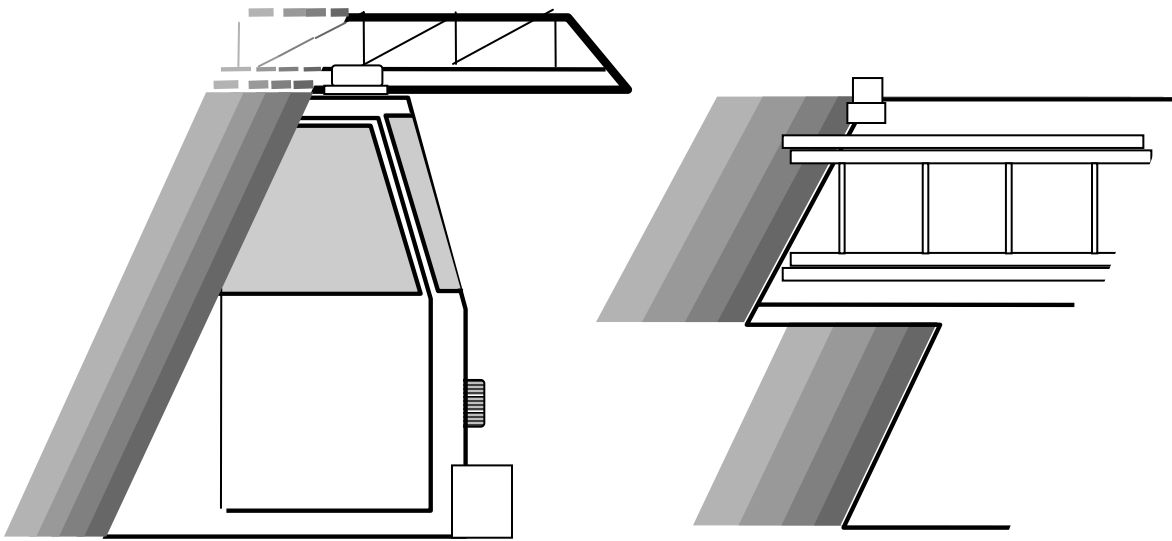
DECISIONMAKING



FEDERAL EMERGENCY MANAGEMENT AGENCY
UNITED STATES FIRE ADMINISTRATION
NATIONAL FIRE ACADEMY



MANAGING COMPANY TACTICAL OPERATIONS



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Managing Company Tactical Operations: Decisionmaking

NOTICE:

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FEDERAL EMERGENCY MANAGEMENT AGENCY

UNITED STATES FIRE ADMINISTRATION

NATIONAL FIRE ACADEMY

FOREWORD

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 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 which 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.

This curriculum is designed to meet the needs of Fire Officers and Crew Leaders with responsibilities to manage the operations of one or more companies in structural firefighting operations. The course components of this curriculum include preparation for response, decisionmaking, and tactical operations. The foundation of the course is an extensive use of simulation to provide application of concepts and the development of skill.

Managing Company Tactical Operations: Decisionmaking provides an effective approach to command decisionmaking and organization. The focus of these five modules is a review of the command sequence and an overview of incident command for structural firefighting. Key content includes: The Command Sequence; Size-Up; Developing an Action Plan; Implementing the Action Plan; and Introduction to the Incident Command System.

Recently, the curriculum for this course has been revised. The revisions were made to apply recent work in naturalistic decisionmaking, and particularly a Recognition-Primed Decision (RPD) model of how fireground commanders actually make decisions when faced with time pressure and uncertainty.

Calderwood (*Fire Command*, August, 1988) has described the research project that showed that fireground commanders rarely generate alternative options and evaluate these options systematically to select the best. There simply is not sufficient time. Moreover, the fireground commanders are able to use their experience to identify a reasonable course of action as the first one they consider. Generally, commanders take advantage of their experience to initiate a course of action rapidly, which is how they can make decisions so quickly. If the commanders are concerned about whether the typical course of action will be successful in the actual situation they are facing, the common strategy is to imagine how the course of action will be carried out, looking for ways in which it might lead to complications. If none are found, the course of action is initiated. If minor complications are found, the fireground commander will try to improve the action. If the improvements aren't going to work, the commander will reject the action and consider another typical strategy.

Although the RPD model appears to describe how fireground commanders make decisions, we have not included the model in the student materials. Little is to be gained by explaining to you how you already think. Instead, the revisions have been based on the RPD model. Since situation awareness, or sizeup, is so central to effective decisionmaking, we have enhanced the materials describing the critical cues for

making difficult judgments. Critical cues are those that can cause a shift or an elaboration in the commander's assessment of the situation. This should help you gain a better sense of what you are monitoring. A second modification is to provide guidance to instructors about how best to use debriefings that follow exercises.

As you proceed through the course, you may have questions that can't be answered in these materials. The United States Fire Administration (USFA) has many publications that may be helpful. A list of these can be obtained by calling 1-800-238-3358, extension 1358.

To request one of these publications by title or by publication number, call the automated service number: 1-800-238-3358, extension 1660.

The USFA's Learning Resource Center also is available to assist with further research; call 1-800-238-3358, extension 1030.

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.

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RESOURCE DETERMINATION FOR ACTIVITIES

The ICS will be applied to a wide range of incidents, from simple to complex and from small to large. The resources used for these activities will be determined by the class. The resource list used should consider both the available resources and the nature of potential incidents that may be encountered. Use the blank Resource Listing Sheet to write the resources selected by your classes.

Personnel Without Apparatus as a Resource

In many fire departments personnel respond directly to the emergency scene from home. When personnel resources are not assigned to a company (Engine, Truck, Rescue Squad) there is a need to provide a supervisory structure for these personnel. The ICS designation for this type of resource is a crew.

Definition: a crew is a specified number of personnel (without apparatus) who are assembled for a task and who have a common leader.

The number of personnel used to form a crew should follow span-of-control guidelines (3 to 7).

Crews may be designated by the last name of the crew leader (Crew Lewis) or may be designated by function and number (Vent Crew 1).

Crews are used in the same manner within ICS as any other single resource. For example: a department responds with two command officers, two engines staffed with four personnel each, and 13 additional personnel.

Engine 1 and Engine 2:

Lieutenant.

Driver/Operator.

2 firefighters.

3 crews.

Crew leader.

2 firefighters.

RESOURCE LISTING SHEET

(consider regional resources, not just those in your own department)

Total Fire Service Resources

Number of engines: _____

Number of trucks (ladders, towers, etc.): _____

Number of water tenders/tankers: _____

Number of command officers (not assigned to a company): _____

Number of special resources (specify): _____

Total Emergency Medical Services Resources

Number of basic life support ambulances: _____

Number of advanced life support (paramedic) resources: _____

Number of special resources (specify): _____

Total Nonfire Agencies

Indicate if this type of resource is available (yes or no)

[] Law Enforcement

Other Resources (specify):

[] Public Works

[] _____

[] Water Department

[] _____

Response Data

Initial response to a structure incident:

Eng. _____ Trks. _____ WT _____ EMS _____

Number of personnel on responding initial resources:

Eng. _____ Trks. _____ WT _____ EMS _____

RESOURCE LISTING SHEET

(consider regional resources, not just those in your own department)

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MODULE 1: THE COMMAND SEQUENCE

OBJECTIVES

The students will:

- 1. Learn about the decisionmaking and action planning process of managing company tactical operations.*
 - 2. Identify the three parts of the command sequence.*
 - 3. Identify the outcomes that follow from each of the three steps of the command sequence.*
 - 4. Identify the three incident priorities and the order in which they must be accomplished.*
-

NOTE-TAKING GUIDE

INTRODUCTION

National Fire Academy (NFA) curriculum developed to assist fire officers in *Managing Company Tactical Operations*.

This course titled *Decisionmaking* is one component of a three-part series that will assist the Company Officer (CO) in developing skills for successfully and safely *Managing Company Tactical Operations*.

Successful incident management.

This course titled *Decisionmaking* is divided into five modules.

Management system: The Incident Command System (ICS).

Experience and practice.

NOTE-TAKING GUIDE

DECISIONMAKING COURSE

Designed to assist the first-arriving officer in making good decisions based on sound strategy and tactics.

Provides a step-by-step guide to developing and implementing an action plan.

Provides the basic tools to effectively manage initial response resources.

TARGET AUDIENCE

It is very important to understand that this course's material was developed for a specific target audience.

Target hazards.

NOTE-TAKING GUIDE

COURSE OVERVIEW

How to use the Student Manual.

Resources for activities.

OBJECTIVES AND OVERVIEW

The students will:

Learn about the decisionmaking and action planning process of managing company tactical operations.

Identify the three parts of the command sequence.

Identify the outcomes that follow from each of the three steps of the command sequence.

NOTE-TAKING GUIDE

Identify the three incident priorities and the order in which they must be accomplished.

NEED FOR A LOGICAL THOUGHT PROCESS

Emergency scene can be confusing.

Proactive versus reactive.

Dangers of being reactive.

Points to remember:

How to stay proactive.

NOTE-TAKING GUIDE

OVERVIEW OF THE COMMAND SEQUENCE



Incident priorities.

The command sequence--a three-step thought process.

Each step in the command sequence has an outcome.

Example.

The command sequence is a guide to action planning.

NOTE-TAKING GUIDE

Must be used at **every** incident.

SUMMARY

The CO needs to follow a logical thought process at every incident to assure that incident decisions result in an effective action plan and promote the safety of personnel.

The command sequence is a three-step thought process.

Each step has a specific desired outcome.

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

NEED FOR A LOGICAL THOUGHT PROCESS

When pulling up to a structure with enough smoke and flames showing to barbecue Godzilla, that first-arriving Company Officer needs to go through a decisionmaking process to determine what actions need to be taken. Some of the more frequently used methods to make that determination include:

- Scream and panic.
- Whimper and moan.
- Stand and stare.
- Transfer command.

The emergency scene often can be both confusing and terrifying for the first-arriving officer. There is a high demand to take immediate action. There seems to be a multitude of decisions that need to be made and a minimum amount of information on which to make them, and radio traffic is at its peak, adding to the confusion.

Proactive Versus Reactive

We should understand that every incident has a leader. That leadership role can be filled initially by the first-in officer or by the incident. When the incident is the leader, it does something and we react to it. When one has insufficient experience with handling a particular type of incident, that person is most often in the reactive mode. A key indicator for this reactive mode is normally a feeling of being "overwhelmed" or "confused." In other words, there is a lack of expertise for that specific incident type. When this occurs, the Incident Commander (IC) becomes almost totally reactive to incident conditions and incident changes. The IC is constantly playing "catch-up" in the areas of strategy, tactics, resources, and action plan. The incident, through its changes, is dictating to the IC. The IC is in a reactive mode.

When the IC leads the incident, due to experience with that specific incident type, decisions are made based on prediction. Such decisions allow the IC to get "in front of" the incident changes before they happen, thereby achieving control earlier with less damage. The IC is said to be proactive. If the CO takes command and provides the leadership, problems are identified, priorities are established, resources are evaluated and used to the best of their capabilities, activities are coordinated, and

firefighter safety is protected. This officer is in the PROACTIVE mode and is fulfilling the leadership role.

Dangers of Being Reactive

The dangers of being reactive are significant. First, the officer is not meeting the responsibility to protect the safety of the firefighting personnel and citizens who may be jeopardized. If the only thought is to grab a line and "put the wet stuff on the red stuff," time is not taken to properly identify existing or potential problems and the possibility for bad things to happen is increased greatly. Coordination among companies can break down, resulting in ineffective use of resources and increased damage or spread of the incident.

Points to Remember

To help ease the pressure we place upon ourselves, there are a few points we should try to remember. When we roll out the door of the station, we are usually responding to someone else's mistake. Our job is to not compound their mistake by making mistakes of our own. If you tell yourself, "I didn't start it" and "It's not my house," it may help to place things in their proper perspective. We only get one chance to do it right so we need a logical process to follow to keep us proactive and in the leadership role.

GYST

Any decisionmaking process you may use to get into the proactive mode should start with first taking the time to gather your thoughts and getting the initial rush of adrenaline under control. A few seconds taken upon arrival to gain control of yourself before you attempt to control the fire can save hours in the history of the incident. Bad decisions made early can come back to haunt you and also result in unnecessary loss and risk to firefighter safety. So the first step in the decisionmaking process should start with GYST or Gather Yourself Together.

OVERVIEW OF THE COMMAND SEQUENCE

Incident Priorities--Mission of the Fire Service

When asked what the mission of the fire service is, the response we usually hear is "To protect life and property." That is the primary mission of every fire department and it is made clear to us from the time we first

pin on the badge until they place the flag over our coffin. Any decision-making process we use should center on our basic mission. The incident priorities clearly state our mission and our responsibility to our communities. Those priorities are:

1. Life safety.
2. Incident stabilization.
3. Property conservation.

The incident priorities serve as a reminder that our basic mission does not change and the actions we take at an incident should always reflect what those priorities are.

Life Safety

Our primary mission is to protect lives, both firefighter and civilian. The first responsibility any officer has is to safeguard the safety of the personnel under their direct supervision and to take all reasonable risk in protecting the lives of the public they serve. Life safety is always our first consideration. This priority is a key factor in the risk/benefit analysis, the most important decision in managing company operations.

Incident Stabilization

The second priority is incident stabilization. The goal of incident stabilization is to minimize the amount of damage or spread of the incident once the fire department intercedes. Fire behavior and construction type are key variables that affect your ability to stabilize an incident. To do so we must ensure the actions we take properly address the problem(s) and we use our resources in a coordinated, safe, and effective manner.

Property Conservation

The third incident priority is that of property conservation. Firefighters often think of this as the salvage and overhaul part of firefighting that takes place after the flames are knocked down and we are into cleaning up and checking for hot spots. Property conservation can start with the initial attack line that enters the building. By using effective stream management, performing aggressive ventilation, throwing salvage covers early in the incident, and committing necessary resources to protect the contents of the involved structure, property conservation can be something we consider from our initial actions to completing a thorough overhaul.

Effective property conservation measures can have a positive impact on the property owner and the community. Irreplaceable possessions can be saved, damage reduced, and the structure reoccupied within a minimum amount of time. If a commercial structure is involved, the community can benefit by jobs being saved, downtime for the business reduced, and tax dollars continuing to be generated.

The Command Sequence

Keeping the incident priorities and our mission in mind, we need to follow a logical decisionmaking process to establish and maintain a proactive mode. The command sequence offers a three-step decisionmaking model that leads the officer through the development and implementation of the incident action plan.

Step One--Size-Up

Too often we see fire companies pull up in front of an involved structure, fight over who gets the nozzle, and race to the front door to make entry. A few brief moments are not taken to GYST or make a determination as to the number or extent of the problems that may be facing the firefighters making the attack. In our business we identify this as the "moth to the flame" syndrome. By their very nature firefighters tend to be aggressive and the desire to spring into action is something that needs to be contained and controlled.

If the initial reaction is to "put the wet stuff on the red stuff," we are leaving out some key elements of any decisionmaking process. Before we ACT we first need to THINK. Size-up is the THINKING phase of the command sequence.

Definition of size-up: Size-up is an ongoing process of gathering and analyzing information critical to incident factors that lead to problem identification.

Before we take action we first need to assure our actions address the problems. Size-up is where we make our best determination as to what those problems are based on the information we have available.

Step Two--Strategy and Tactics

Operational responsibilities of Command include three levels:

- strategic level--determines overall direction of the incident;
- tactical level--assigns operational (tactical) objectives; and
- task level--completes specific tasks assigned to companies.

The strategic level is a function of the Incident Commander (IC). The IC sets the overall plan and strategic priorities.

The tactical level is a function of the Operations Section Chief. Operations selects the tactical objectives and prioritizes the accomplishment of the objectives. When an Operations Chief has not been designated, the IC must perform the tactical-level responsibilities.

When, and if, the Planning Section is established, the strategic and tactical levels of the operation should become part of the information given to the Planning Section Chief. This is vital information for Planning, since the primary function of this section is evaluating the incident and forecasting incident needs. The Planning Section also must develop alternative plans that include strategic- and tactical-level information.

The task level is a responsibility of the Company Officer (CO) and the firefighters who are performing the individual tasks that achieve the tactical objectives.

Once the problems have been identified we are ready to go on to the next step of the command sequence. The actions we take to address the problems resulting from our size-up should be based on a PLAN. The plan should first define WHAT has to be done to solve the problem. Firefighters refer to this as strategy.

Definition of strategy: Strategy consists of broad goals that constitute an overall plan to control the operation.

Having determined what has to be done, the plan should include HOW the strategy is to be met. We know this as tactics.

Definition of tactics: Tactics are specific, measurable objectives that are necessary for the achievement of the strategies.

When the strategy and tactics have been established, we have the PLANNING phase of the command sequence in place.

Step Three--Implementation

Having done our THINKING and our PLANNING we are now ready to ACT. Step three of the command sequence is the implementation of the action plan. Executing the plan will require clear, concise communications and coordinating the actions of the available resources responsible for the plan's success.

It is not until we have first completed the THINK and PLAN phases of the command sequence that we are ready to do the ACT phase that involves what firefighters like best. We can now force entry, squirt water, conduct our search, chop holes in the roof, and the other tasks that may be necessary to address the problems identified in size-up and successfully accomplish the action plan.

Results of the Command Sequence

Each step of the command sequence has a positive result.

STEP	RESULT
Size-up	Problem identification
Strategy and tactics	Action plan
Implementation	Tasks

By using the command sequence officers first THINK and PLAN before they ACT. It helps you to get into the proactive mode and assures that important considerations are not overlooked.

Must be Used at Every Incident

For a decisionmaking process to be effective it must become a matter of habit. Most of the incidents to which we respond are not of a complex nature, and by using the command sequence at the typical everyday incident we can develop good decisionmaking habits. An old axiom tells us that "under stress you will perform as you practice." If using the command sequence becomes a matter of everyday practice, decision-making becomes easier when faced with "the big one."

SUMMARY

The mission of the fire service is defined by the incident priorities, and how we function at the emergency should address that mission. The command sequence offers a logical three-step model decisionmakers can follow to help secure and keep the leadership role throughout the incident. In using this model, officers are compelled to THINK, PLAN, and ACT in that order. It gets us out of reacting in a knee-jerk manner of firefighting and into a proactive mode that makes the most effective use of available resources and protects the safety of our personnel.

Activity 1.1

Need For A Logical Thought Process

Purpose

The purpose of this activity is to place the following six steps in proper order of accomplishment.

Directions

Reorder the following activities in the order that you perform them:

Problem Identification _____

Action Planning _____

Implementation _____

Tasks _____

Size-up _____

Strategy and Tactics _____

RESOURCE LISTING SHEET

(consider regional resources, not just those in your own department)

Total Fire Service Resources

Number of engines: _____

Number of trucks (ladders, towers, etc.): _____

Number of water tenders/tankers: _____

Number of command officers (not assigned to a company): _____

Number of special resources (specify): _____

Total Emergency Medical Services Resources

Number of basic life support ambulances: _____

Number of advanced life support (paramedic) resources: _____

Number of special resources (specify): _____

Total Nonfire Agencies

Indicate if this type of resource is available (yes or no)

[] Law Enforcement Other Resources (specify):

[] Public Works [] _____

[] Water Department [] _____

Response Data

Initial response to a structure incident:

Eng. _____ Trks. _____ WT _____ EMS _____

Number of personnel on responding initial resources:

Eng. _____ Trks. _____ WT _____ EMS _____

MODULE 2: SIZE-UP

OBJECTIVES

The students will:

- 1. Describe the three phases of size-up and their relationship to problem identification.*
- 2. Describe the factors that affect size-up.*
- 3. Given a simulated structural fire incident, demonstrate the ability to conduct an effective size-up, identify the problems presented, and communicate critical information as a part of a concise size-up report.*

NOTE-TAKING GUIDE

THREE PHASES OF SIZE-UP

Phase One: Preincident Information.

What you know before the incident.

Phase Two: Initial Size-up.

What you see and hear from the time of dispatch and upon arrival at the incident.

Phase Three: Ongoing Size-up.

The gathering of information throughout the incident.

NOTE-TAKING GUIDE

PHASE ONE: PREINCIDENT INFORMATION

Size-up is more than what you see through the window when you arrive at the scene.

Value of preincident information to the IC.

It's hard to obtain preincident information when the flames are licking at the cases of dynamite.

Preplans.

Occupancy information.

Water supply.

Environmental conditions.

NOTE-TAKING GUIDE

Time of day.

Area knowledge.

Departmental resources.

Interagency/Private sector assistance.

PHASE TWO: INITIAL SIZE-UP

A rapid mental evaluation of various factors related to an emergency incident.

First objective is to identify problem(s).

NOTE-TAKING GUIDE

Use preincident information to help with initial size-up.

Dispatch information can give an indication of the extent of problems.

What should initial size-up include?

Size-up factors to consider.

RISK/BENEFIT EVALUATION

The IC needs to determine if risks taken are worth benefits gained. **See Incident Priority 1** (life safety).

If IC judges it is worth risk, for how long?

Selecting operational mode.

NOTE-TAKING GUIDE

Resource evaluation.

Committing resources.

COMMAND DECISIONS

The first-arriving officer has a critical command decision to make, his/her initial role:

Command.

Combat.

Combative commander.

NOTE-TAKING GUIDE

BRIEF INITIAL REPORT

First-arriving officer should paint a vivid word picture of conditions.

What do I have?

What am I doing?

What do I need?

Who is in command?

Good size-up report alerts others.

NOTE-TAKING GUIDE

PHASE THREE: ONGOING SIZE-UP

Size-up needs to be ongoing.

Situation status: Ongoing analysis of the progress of the incident.

Resource status: Analysis of effectiveness of current resources and identification of needed or anticipated resources.

Responsibility for ongoing flow of information.

Size-up and problem identification constitute the **thinking** phase of the command sequence.

NOTE-TAKING GUIDE

SUMMARY

Three phases of size-up.

Preincident information can help the IC.

Initial size-up answers the following:

Three important considerations that are part of an initial size-up.

Ongoing size-up is important to the IC because it:

Everyone is responsible for the ongoing flow of information throughout the incident.

THREE PHASES OF SIZE-UP

When asked to define size-up, most firefighters tend to think of what they observe upon arrival at the scene of an incident. To make the most of the information available in doing a size-up we should instead think of it in three distinct phases:

1. Preincident information: What you know before the incident.
2. Initial size-up: What you see and hear from the time of dispatch and upon arrival at the incident.
3. Ongoing size-up: The gathering of information throughout the incident.

PHASE ONE: PREINCIDENT INFORMATION

A wealth of information is available prior to the alarm sounding. It is known as preincident information, those factors known before the incident that may affect decisions or actions.

Preplans

One of the most valuable sources of information available is the use of **prefire plans**. Good prefire planning provides a thorough understanding of the building construction, occupancy, access points, water supply, probable fire behavior prediction, safety hazards to firefighters and occupants, resource needs, and is a training tool for companies.

Occupancy Information

If fire personnel are familiar with their response areas, they should have a basic understanding of a variety of factors that could affect the decisions that are made and the actions firefighters might need to take. Included in those factors would be typical **occupancy information** in an area. The address of the response should indicate whether the typical occupancy is in a residential neighborhood, commercial area, rural, or a target hazard. It should also give an indication as to the type of people who might be occupying the building at the time of alarm. Based on the neighborhood of the response, a judgment often can be made as to the type of construction found in the area. A residential area should cue the officer to expect human occupancy 24 hours per day, 365 days per year. The officer must expect people to be home and can conclude otherwise only after a primary search has been completed.

A commercial area should cue the officer to expect possible high-density populations during normal business hours, with limited population density after business hours. In addition, fire and emergency services personnel should expect a commercial occupancy to have various types of fire loads and occupancy uses (e.g., furniture refinishing, printing companies, etc.) with the resulting possibility of hazardous materials on the premises.

A rural area should cue the officer to expect to have to establish an effective water supply and to call the needed resources at the first indication of fire/smoke conditions. If life safety becomes a concern, early activation of EMS or rescue resources should be considered, e.g., ALS or a helicopter.

Dispatch to a previously identified target hazard should cue the officer to expect high-density populations, a high dollar value fire, or a complex operation. There may be a large and infirm population, so there may be a need to relocate a large number of occupants. The community may depend on the facility for its economic stability (e.g., a manufacturing plant), or the facility may pose unique problems, such as those created when dealing with hazardous materials.

Water Supply

The fire officer must understand the water system or static water sources in his/her response area. A reliable, adequate municipal water system indicates that there is sufficient water to control fires within the system's service area. This does not necessarily mean that there is an infinite quantity of water available, but rather that there is sufficient fire flow for prevailing conditions such as environmental, building density, building construction types, distances between structures, etc.

Where there is less-than-adequate supply available from a municipal system it is expected that there will be inadequate fire flow to control a fire above a given magnitude. For example, a building with a 25-percent involvement may require 800 gpm to be applied, yet the water system can only supply 500 gpm. This fact affects strategy, tactics, the action plan, and the amount of fire loss that probably is going to occur. Plans should be made beforehand to address areas where water supply is insufficient to handle expected fire flow.

Static water supplies are ponds, lakes, streams, rivers, bays, etc. The officer must understand the time involved in filling apparatus and making round trips to the incident scene from the water source. The officer also must have knowledge of the quantity of water available, the static source available in the extremes of summer and winter, and how accessible its location is to vehicles.

Environmental Conditions

The **environmental conditions** can have a significant impact on how effectively our resources operate. Extremes in weather can adversely affect how long and how fast personnel can operate. In hot weather firefighters will tire quickly and need relief sooner than under normal conditions. Snow, ice, and cold can have the same effect, and can slow operations considerably. Response time also can be slowed by snow and ice. Fire behavior can be affected by environmental conditions. Dry stuff burns faster than wet stuff.

Time of Day

Time of day may indicate high or low population probability in most occupancies based on typical occupancy times. For example, schools on school days from 7:00 a.m. to 3:30 p.m. are heavily populated. Stores in a mall at 1:00 a.m. tend to be uninhabited. The day of the week also affects population probabilities in certain occupancies, as does season of the year. Rush-hour traffic can delay or alter response routes. Also, the tendency for arsonists to set incendiary fires is greater late at night or in the early morning hours.

Area Knowledge

Each of us has knowledge and understanding of our individual response area or district. This specific **area knowledge** can include a wide range of information such as best response routes, natural barriers like rivers or unsafe bridges, access problems, unusual hazards such as a rattlesnake breeding farm, nuclear power plant, fireworks factory, or a host of other unique hazards. It is likely that much of this type of information is kept in the memory of fire officers. While some of the information may be on the preplan (access problems, rattlesnake breeding farm, nuclear power plant, etc.) such things as best response routes, natural barriers, or unsafe bridges probably do not make the prefire plan. Firefighters should think of their minds as computers and endeavor to load as much information as they can, both on and off duty. View your area with an eye toward how you would fight a fire in a particular building, or consider what problems it might present. Making a habit of this may be of immeasurable help if you are ever called to the real thing. In addition, it can be a fun and productive thing to do as a company.

Departmental Resources

In every department there needs to be a clear understanding of what **departmental resources** you can expect at the time of response, and what additional resources are available. Many departments have a set response of apparatus and personnel that will be dispatched to a typical type of emergency. Other departments, such as volunteer or combination departments, may have varied resources based on the time of day of the alarm. Larger departments may have fewer resources or delayed support if simultaneous emergencies are occurring. We also should consider mutual aid companies, specialized departmental equipment, and personnel with specialized skills or knowledge as available resources.

Interagency/Private Sector Assistance

Many of us tend to think of available resources in terms of fire apparatus and firefighters. Not all emergencies can be handled with just the apparatus, equipment, and people the fire department can provide. We also must be planning for those emergencies beyond the scope of the fire department, and require the resources available through **interagency or private sector assistance**. Private contractors, other emergency response agencies, State, county, and municipal agencies, utility companies, service agencies such as Red Cross and the Salvation Army, all are capable of providing assistance or support that will allow the fire department to concentrate on doing what it does best. The time to identify these resources is during area-wide emergency planning and not during the incident.

The more preincident information the first-arriving officer has available the better that officer will be able to do an on-scene size-up and determine what is happening and what problem(s) exist. It gives the officer a running start in developing an action plan and protecting the safety of personnel. Preincident information goes a long way towards reducing the amount of uncertainty you will have to face.

A point to remember: It's hard to obtain preincident information when the flames are licking at the cases of dynamite.

PHASE TWO: INITIAL SIZE-UP

The second phase of size-up starts with the initial dispatch information, additional information received en route, and what the first-arriving officer is able to observe upon arrival. We typically think of this as the initial size-up, a rapid mental evaluation of various factors related to an

emergency incident. Following is an example of information received during initial size-up.

- A first alarm assignment is dispatched to a structure fire:
 - Dispatch to all companies.
 - Attention Engines 1, 2, 3, Truck 1, Battalion Chief 1.
 - Respond to a building fire, Hein's Hardware Store, 101 Crain Highway.
 - Fire is reported in the basement.
- Enroute information:
 - Engine 1, Battalion 1 from dispatch.
 - Further reports from the structure fire at Hein's Hardware. Fire and smoke are seen coming from the attic.

Identify the Problem(s)

When the incident is of any magnitude, stress level is at its highest, information is limited, and the need to take quick action may be overpowering. What the first-arriving officer should understand is that the need to take quick action must be balanced with the higher priority of identifying the action problem or problems. As an example, initial reports may indicate that a strip shopping center with a common attic space above all the occupancies has a well-involved fire in a single occupancy. Taking the time to look for potential problems would likely help uncover the fact that this fire has probably reached the common attic space. Given this knowledge, the appropriate response would be to vertically ventilate the roof and complete horizontal ventilation, stop the fire from spreading into the adjacent occupancies on either side, and extinguish the fire in the involved occupancy.

An officer who takes action without recognizing the high probability of fire in the common attic space will simply attack the fire without checking for extension or vertically ventilating. This most often results in the fire gaining headway in the common attic and the loss of most of the strip shopping center building. Taking action may satisfy primal urges, but unless we do our best to identify the problem first we are not ready to offer a solution.

The first-arriving officer must take the time to assess conditions **calmly**, and to be **proactive** rather than **reactive**. Preplans and any other preincident information should be utilized. It is also the officer's first opportunity to identify any hazards present which may be a threat to the safety of firefighters or civilians.

Three Size-Up Questions

The officer should attempt to answer three questions in doing the size-up:

1. What do I have? (Problem identification.)
2. Where is it going? (Fire behavior prediction.)
3. How do I control it? (Resource identification and application.)

Answers to these questions are based on various items of information that are obtained either before the emergency occurs (preincident information) or at the incident scene. These items of information can take many different forms but usually are related to the following subjects:

1. Construction of the building.
2. Occupancy and contents.
3. Location of the building.
4. Location and extent of fire.
5. Time and weather impact.
6. Probable fire behavior.
7. Preplan considerations.
8. Resource evaluation.

The **construction of the building** will indicate the probable rate of burning, possible avenues of fire spread, and many of the problems, which will have a direct bearing on efforts to confine the fire. For example, consider a building of wood-frame, balloon construction with a fire that probably has penetrated the wall assembly. The fire will be able to spread through the combustible wall assembly vertically until it reaches a floor assembly or the attic space. If there are occupants on the second story in the probable path of the fire, the IC should recognize this critical cue regarding life safety issues.

The **occupancy and contents** of the building, along with the construction, will indicate the fire load involved and the potential amount of heat that will be given off. The type of occupancy will give definite clues as to the life hazards that may be present. Knowledge of the building contents can identify safety hazards to both occupants and fire-control personnel. For example, an educational occupancy, such as a school, normally will have a fire load described as "light." This means approximately five to ten pounds of material per square foot of floor space. In a modern, noncombustible school structure, the travel of fire from classroom to classroom should be relatively slow. However, one should be aware that school fires may be intentionally set (especially in late night or early morning hours) and that the rate of fire spread may be accelerated in this case.

An open storage occupancy, such as a furniture warehouse, normally will have a heavy fire load of more than 20 pounds per square foot of floor space. The wide-open nature of a warehouse coupled with the high fire load, will allow the fire to extend very rapidly through the structure.

The **location of the building** is important in relation to accessibility, water supply, exposure hazards, or other conditions that might hamper control operations. The location of the building will indicate the extent of the exterior exposure problem. The seriousness of this problem will depend on the volume of fire and the amount of heat generated. To a large degree, these are determined by the construction and contents of the building.

The **location of the fire** within the building, its present volume, and its extent are critical factors in determining what initial action should be taken to control the fire. They also give an indication of the interior exposure hazard and the most desirable direction from which an attack should be made. The extent of the fire and the amount of heat being given off will indicate whether heavy-stream appliance will be needed or whether handlines can do the job. This will dictate the location, number, and size of lines needed. As an example, a strip shopping center with a common attic space above all the occupancies has a well-involved fire in a single occupancy. Prediction would indicate that this fire has probably reached the common attic space. This fire would be threatening the horizontal exposed occupancies, with further extension down the common attic space. Since most strip shopping centers are well-locked at the rear, front entry and fire attack are most often done, even though this is against the "unburned to burned" rule of thumb. It often is necessary to attack such fire with portable master stream devices due to the amount of heat generated and the reach required.

Time of day and prevailing weather conditions are variables that can have a very critical effect on a size-up in certain situations. Depending on

the occupancy, time will indicate the extent of life hazard involved, and the problems that might be encountered in gaining access to the fire. For example, fires occurring in residential occupancies during the late night or early morning hours pose increased life-safety hazards. A fire in a commercial occupancy at these same times usually indicates a diminished life-safety concern, but can mean that forced entry is required to reach the fire. Weather can play an important part in the rate of fire development and the manner in which it spreads. Temperature and humidity will help determine how fast materials will burn and how smoke and fire gases will behave. Temperature can be not only a fire factor but also a fatigue factor which may indicate that the early need for relief personnel must be considered.

An estimate of the **probable behavior of the fire** is necessary to determine what strategy and tactics will be used as well as what resources will be required to control the situation. Information regarding the present size/extent of the fire, coupled with knowledge of other factors discussed to this point, allow a fire officer to make a logical estimate of how the fire will progress and to make appropriate decisions. The quantity of smoke, coupled with the speed at which the smoke is leaving the structure, may indicate the relative size and extent of the fire. For example, if fire/smoke is issuing from all windows including the basement in a single family dwelling, or is issuing from the chimney and the basement windows, it would indicate a basement fire. Observation or reports from other personnel may assist the officer in understanding how much of the structure is involved. In addition, knowledge of building construction and configuration, fire load, occupancy type, etc., assist the officer to make effective decisions regarding strategy, tactics, and resources needed. The number of fire companies needed as well as operations that might be performed are dictated by the anticipated size and extent of the fire when these resources will be in position to attack the fire.

Preplan considerations developed during prior firefighting inspections of the building should be included in the size-up. If this information has been recorded on some type of form at the scene, it can be reviewed quickly to determine relevant details about the building or operational procedures outlined on the form.

Following an assessment of what the fire situation is or will be, an **evaluation of resources** is in order. What companies are included in the first-alarm assignment? Will they be sufficient to handle the fire? Answering this question requires a knowledge of fire flow and resource capability so the officer can determine the amount of water in gallons per minute needed to extinguish the fire. With this knowledge the officer can determine the number of personnel required for aggressive interior fire attack, as long as that officer understands what gpm his department can flow per person on the fireground. For example, a fire requires 450 gpm to be extinguished. The responding fire department has the ability to

deliver 30 gpm per person on the fire ground (30 gpm is a rough rule of thumb). Divide 450 by 30 for the answer of 15 personnel. Call enough resources to provide the 15 personnel and the fire should be extinguished with sufficient personnel doing command, pump operations, hoseline application, and truck company work.

Other questions to consider include whether the first-alarm assignment includes all the equipment that might be needed. If you call for additional help, what will be the extent of the fire when the help arrives? The resource evaluation that is done as part of the size-up must match existing or probable problems to the amounts of personnel and equipment that will be needed to deal with these problems. This process allows assigning resources to problems on a priority basis. For example, first company to rescue, second company fire attack, third company ventilation, etc. If, during the size-up, it becomes apparent that the problems are too much for the first-alarm assignment to handle, additional help can be requested at that time, rather than waiting until the need becomes obvious.

WALLACE WAS HOT

An acronym used for training in the factors affecting size-up is **WALLACE WAS HOT**. The thirteen points of consideration Wallace outlines are:

Water
Apparatus/Personnel
Life
Location/Extent
Area
Construction
Exposures

Weather
Auxiliary appliances
Special hazards

Height
Occupancy
Time

Trying to remember all thirteen factors when the flames are turning water to steam can make your head hurt. They are better used for training purposes and for keying in on those factors which are present at the incident.

RISK/BENEFIT EVALUATION

Risks Taken are Worth Benefits Gained

While all of us recognize that firefighting can be dangerous and full of risk, one of the first decisions the initial IC needs to make is based on a risk/benefit evaluation. For firefighter safety, the risk/benefit decision for any task to be attempted is the most important decision the IC has to make. The IC must assess the current conditions and determine whether the potential benefits are worth risking firefighters by committing them to an aggressive interior attack. Too often firefighters' lives are jeopardized attempting to put out a fire in a building where there is danger of collapse or where damage is so extensive there is nothing worth saving. Other firefighters are asked to risk their safety to rescue victims with little or no chance of survival.

If it is Worth Risk, for How Long?

Should the IC decide the risk is worth the benefits, the next thing that must be determined is for how long. The IC must continually reassess structural conditions, especially when a fire continues to gain headway regardless of firefighters' actions. Risk/Benefit analysis is even more critical when the initial decision had a high-risk component to begin with. Lightweight construction can fail in as little as five minutes after flame involvement. For this reason, you may want to consider outside streams. Modern construction is not designed to maintain its integrity during fire conditions, and building collapse occurs earlier than in older, more substantial buildings. We do not always know how long or how intensely the fire has been burning prior to our arrival. The length of time firefighters can be expected to sustain an interior attack may therefore be limited. The available resources and needed fire flow should be a part of the IC's considerations. Not enough resources or available water may mean that the risk outweighs the benefits.

Although it may be the hardest decision an IC is ever asked to make, there are times when attempting to make a rescue or an interior attack may be too great a risk to the safety of the firefighters, and is not worth the benefits. Failure to do a risk/benefit evaluation is the ultimate example of not being proactive and failing to look after the safety of personnel.

Selecting Operational Mode

Based on the risk/benefit evaluation, the IC selects the operational mode. The IC has a choice of three modes of operation. They are:

1. Offensive.

2. Defensive.
3. Transitional.

Should the IC choose the **offensive mode**, it means that carrying on an aggressive interior attack is worth the risk to firefighter safety, and that sufficient resources and water are available to meet the incident demands.

Indicators for a **defensive** operation include danger of imminent collapse, the building already is lost, conditions indicate survival of any victims trapped inside is unlikely, or insufficient resources are available to deal with the problems effectively. Some rules of thumb for determining the likelihood of collapse include heavy fire involvement (over 50 percent); lightweight construction--especially parallel-chord wood truss assemblies; and, for noncombustible construction types, unprotected steel framing and steel bar-joists. Another example would be an ordinary (masonry, wood-joist) constructed building with major fire on two floors for 20 minutes. (Remember, the 20 minutes started at the time when the call came in, not when you arrived.) Understand that the fire load on these buildings can significantly reduce this timeframe.

When operating in the defensive mode the IC needs to keep close track of personnel to assure they understand the plan and do not freelance. Firefighters often believe one desperate act can save the day, and will take ill-advised actions to turn the tide of battle. This leads to unsafe acts and loss of personnel.

Defensive operations often end up with master streams protecting exposures and big water on the involved structure with little impact on the eventual outcome of the fire. A collapse zone should be established to keep firefighters out of danger at a time when there is no logical reason for the safety of personnel to be jeopardized.

During the **transitional mode** forces at the scene are switching from one mode to another. An example would be when the decision is made not to make entry (defensive) until additional resources are available and an interior attack can be mounted (offensive). Another is when efforts are directed at confining the fire until rescue can be accomplished (offensive), after which personnel are withdrawn to protect exposures (defensive).

Any time the decision is made to switch from one operational mode to another, particular attention should be given to make sure the switch is communicated to all personnel at the incident, and that confirmation of the change is received.

Resource Evaluation

Committing Resources

Once the IC makes the best judgment as to the problem(s) present at the incident, a quick evaluation can determine if the current or responding resources are sufficient to address those problems. If there is a question whether the IC has enough resources the answer is easy: **When in doubt, get more help!** It is much easier to turn resources around than it is to need them and not have them already available or on their way.

COMMAND DECISIONS

Another decision facing the first-arriving officer is what individual action to take. The first-in officer has three choices available:

1. Incident Commander.
2. Combat--Hands-on Incident Commander.
3. Tactically Involved Incident Commander.

COMMAND OPTIONS

The first-arriving unit or member to assume Command of the incident has several command options, depending on the situation. If a Chief Officer, member, or unit without tactical capabilities (i.e., staff vehicle, no equipment, etc.) initiates Command, the establishment of a Command Post (CP) should be a top priority. At most incidents, the initial Incident Commander (IC) will be a Company Officer (CO). The following Command options define the CO's direct involvement in tactical activities.

Nothing-Showing Mode: These situations generally require investigation by the initial arriving company while other units remain in a staged mode. The CO should go with the company to investigate while using a portable radio to command the incident.

Fast-Attack Mode: Situations that must be stabilized immediately require the CO's assistance and direct involvement in the attack. In these situations, the CO goes with the crew to provide the appropriate level of supervision. Examples of these situations include

- Offensive fire attacks (especially in marginal situations).
- Critical life safety situations (i.e., rescue) which must be achieved in a compressed timeframe.

- Any incident where the safety and welfare of firefighters are major concerns.
- Obvious working incidents that require further investigation by the CO.

Where fast intervention is critical, using a portable radio will permit the CO's involvement in the attack without neglecting Command responsibilities. The Fast-Attack mode should not last more than a few minutes and will end with one of the following:

- The situation is stabilized.
- The situation is not yet stabilized, and the CO may withdraw to the exterior and establish Command in a fixed location. At some time, the CO must decide whether or not to withdraw the remainder of the crew, based on the crew's capabilities and experience, safety issues, and the ability to communicate with the crew. No crew should remain in a hazardous area without radio communications capabilities.
- The situation is not yet stabilized, and the CO remains inside with the crew in a Combat/Command mode. This option is chosen when the officer can make a difference in the effectiveness of the crew.
- Command is transferred to another officer. When a Chief Officer is assuming Command, the Chief Officer may opt to return the CO to his/her crew, or assign him/her to a subordinate position.

Command Mode: Certain incidents, by virtue of their size, complexity, or potential for rapid expansion, require immediate strong, direct, overall Command. In such cases, the CO initially will assume an exterior, safe, and effective Command position and maintain that position until relieved by another officer. A tactical worksheet shall be initiated and used to assist in managing this type of incident.

If the CO selects the Command mode, the following options are available regarding the assignment of the remaining crew members.

- The CO may "move up" within the company, and place the company into action with the remaining members. One of the crew members will serve as the acting CO and should be provided with a portable radio. The collective and individual capabilities and experience of the crew will regulate this action.
- The CO may assign the crew members to work under the supervision of another CO. In such cases, the officer assuming Command must communicate with the officer of the other company and indicate the assignment of those personnel.
- The CO may elect to assign the crew members to perform staff functions to assist Command.

A CO assuming Command has a choice of modes and degrees of personal involvement in the tactical activities, but continues to be fully responsible for the Command functions. The initiative and judgment of the officer are of great importance. The modes identified are guidelines to assist the officer in planning appropriate actions. The actions initiated should conform with one of the previously mentioned modes of operations.

BRIEF INITIAL REPORT

The Brief Initial Report (BIR), often called the status report, is critical information that is transmitted by the first-arriving unit at an incident. This report is more than just an adrenaline increaser that gets the heart beating faster: it conveys important information to those units not yet on location. Simply stating "**working fire**" or "**fully involved**" is insufficient. It is important that the report be transmitted in clear text so that all the agencies involved in the incident receive the same information.

It is assumed that all of us know that the tactics for an attic fire are much different than those for a basement fire. By giving effective information in a standard format, we increase the ability of later-arriving companies and chiefs to be prepared mentally to assist the first-arriving unit quickly. We give the later-arriving units a moment or two to consider what tactical operations we do to handle a specific type of situation.

The recommended format is

Engine ____ arrived location Side ____ (state Side of the facility) of
(describe the facility briefly).

(Describe the situation specifically and the mode of operation.)

Engine ____ crew is (describe what your crew as been assigned to do and where).

Captain Engine ____ is Command on Side ____ (state Side).

Assign the other resources, as needed.

Example:

Engine 1 arrived location Side A of a two-story dwelling.

I have heavy smoke and fire showing from the second floor, Side C, offensive operation.

Engine 1's crew is making an interior attack and starting primary search on the second floor from Side A.

Also, be aware that the other responding units need to know your strategies to assist and operate at the scene effectively. Your strategies need to be conveyed to the other resources when you give them their tactical or task assignments.

What Do I Have?

When answering the question "What do I have?" the report should include the approximate size of the building, number of stories, construction type, occupancy, and an accurate description and location of the fire and/or smoke conditions present.

What Am I Doing?

Advise the other units what actions you are taking by giving them the answer to "What am I doing?" Let them know the initial tasks you are carrying out, your point of entry into the building, and your location in the involved structure if in an offensive mode.

What Do I Need?

If the initial plan calls for assignments for other responding units, let them know "What do I need?" Use the communications model to communicate the assignments and to get confirmation that assignments have been understood. Officers should not give assignments just to get other units into action. If the answer to "What do I have?" is "I don't know," take the time to find out before you take any action that could have an adverse

effect, and wait to assign the other units. The best answer to "What do I need?" may be "Nothing right now." If this is the answer you come up with, have the other units stage close enough to the structure to respond to all four sides of the building and wait until you determine what the problem is.

Who Is In Command?

Every report should include the answer to "Who is in command?" While it is assumed the first-arriving officer is in command until such time command is transferred, the initial report should make it clear whether that first officer is keeping command or if it is being transferred, and to whom. If there are simultaneous alarms, the initial indication should also designate a name for the incident such as "First Street Command." This will eliminate confusion among other units and dispatch as to whether a call is from "First Street Command" or another incident operating as "Main Street Command." It is one more step in reducing confusion and improving firefighter safety.

Good Size-up Report

A good size-up report alerts others and gives them a clear indication of conditions and the scope of the problem. Not all of us respond to a major fire every time we roll out of the door. The majority of our calls are often routine and of a minor nature. As we rumble down the street, our minds are idle assuming this is just another usual call. Our minds go from idle to warp 2 in a heartbeat if we hear an officer vividly describe a working fire. A good size-up report allows others to get their minds up to speed before they arrive on-scene.

A bad size-up report provides little new information, for example:

- Engine 1 arrived location, working fire. Engine 1 in charge.

A good size-up report gives appropriate information and paints a picture, for example:

- Engine 1 arrived location Side A of a two-story dwelling, 101 Third Avenue. Heavy fire and smoke showing from a second floor window on Side C. Engine 1's crew is making an interior attack from Side A. Lieutenant Engine 1 is Command.

PHASE THREE: ONGOING SIZE-UP

Size-up does not stop once the action plan is implemented and firefighters are taking action. Size-up needs to be ongoing throughout the entire incident. The initial information available to the IC upon arrival is often incomplete or wrong. The IC needs to increase his/her knowledge of the incident to have as good an understanding as possible of what the problems are, how the action plan is working, whether there are enough of the right resources, and if there are existing or potential safety hazards.

Situation Status

The Incident Command System (ICS) has two position descriptions which outline the types of information that needs to be developed. The first is Situation Status which is an ongoing analysis of the progress of the incident. Is the action plan working? Have the problems been correctly identified? What is the fire-behavior prediction? What is the likely outcome of our current actions? Simply stated, situation status can be described as "less building, more fire--situation bad," "fire going away, building staying--situation good." If you have more fire and less building, situation status should provide you with the answer as to why this is happening, and what can be done to turn things around.

Resource Status

Resource Status is an analysis of effectiveness of current resources and identification of needed or anticipated resources. Resources include apparatus, equipment, and personnel. Do you have enough resources? Can the IC make all the tactical assignments required to control the situation effectively? Are there sufficient reserves on hand to replace tired crews or crews that need air bottle changes? Does the IC need an aerial ladder, haz mat response company, light unit, air cascade unit, or other specialized apparatus? Does the IC need trained haz mat personnel, a chemist, a building engineer, an architect, etc.? If another alarm is required, a good rule to follow is: As soon as you determine that all units will be deployed, call for additional units.

Responsibility for Ongoing Flow of Information

In order for the IC to have a clear picture of the status of the situation and the resources available, there must be an ongoing flow of information between the IC and those who are carrying out the action plan. The IC is responsible for developing, implementing, and modifying the action plan and has the responsibility of protecting the safety of personnel. To do this

effectively the IC must be making decisions based on as much information as it is practical to gather. This requires those inside the building where the action is to keep the IC informed if they are meeting their assignment, and if not, why not; additional resource needs; whether resources are available to be released or reassigned; if conditions have changed significantly since the initial assignment; and if there are any unusual conditions or safety hazards.

The responsibility for the flow of this information belongs to everyone. Personnel operating at the incident must understand the IC's need to know and provide periodic updates. If the updates are not forthcoming, the IC should understand it is easy for those inside where it is hot, smoky, and dangerous to have other things on their minds. This may require the IC to ask regularly for updates if they don't come voluntarily. However it happens, the flow of information **must** take place.

SUMMARY

Size-up is more than what you see through the windshield upon arrival. It is a wealth of preincident information available prior to the incident which can help the first-arriving officer make sound decisions.

The initial size-up must be done in a calm, objective manner assuring that the officer first identifies the problem(s) before applying the solution. If action is the first step in the process, the safety of personnel is jeopardized, and resources may not be utilized to their maximum effectiveness.

An important part of the initial size-up is the brief initial report, which paints a vivid word picture of conditions. This gives the other responding units a clear understanding of the extent of the incident and gets them up to speed.

Size-up is ongoing throughout the incident and requires that the IC have as much information as possible in order to make sound decisions and to protect the safety of personnel.

To do a complete size-up officers should understand the three phases of:

1. Preincident information.
2. Initial size-up.
3. Ongoing size-up.

Activity 2.3

Brief Initial Report--"What Do I Have?"

Purpose

Develop the ability to paint a vivid word picture of conditions during a brief initial arrival report.

Directions

1. Your group will be assigned a scenario. As a group, you will be given 5 minutes to write your group's answer to the question, "What Do I Have?" on an easel pad. Your instructor will show a slide indicating what you see when you arrive.
2. Your group shall select a spokesperson to give your group's report when called upon.

Example Scenario

- two-story, 40' x 18', townhouse;
- fire and smoke showing from Side A, first floor; and
- smoke showing second floor, Side A.

Scenario 1--Two-story Apartment House

Scenario 2--Small Shopping Center

Scenario 3--Community Bar

Scenario 4--Townhouse

Scenario 5--Apartments Under Construction

MODULE 3: DEVELOPING AN INCIDENT ACTION PLAN

OBJECTIVES

The students will:

- 1. Given a structural fire scenario, demonstrate the ability to develop a strategy using the command sequence.*
 - 2. Using the command sequence, demonstrate the ability to select tactics that will achieve a well-defined strategy.*
-

ACTION PLAN

An Incident Action Plan (IAP) is an organized course of events that addresses all phases of incident control within a specified time. An IAP is necessary to effect successful outcomes in any situation, especially emergency operations, in a timely manner. Furthermore, the IAP must be completed in a timeframe that allows the least amount of negative action to continue.

Incident Action Planning starts with identifying the strategy to achieve a solution to the confronted problems. The strategy should be broad in nature and define what has to be done.

Once the strategy has been defined, the Incident Commander (IC) or the Operations Section Chief needs to select the tactics. Tactics are the operations that need to be completed in order to accomplish the strategy. If the strategy defines where you want to go, then tactics are the signposts along the path to get you there. They provide the answers to the "how" and "where" of the IAP. Tactics are measurable in both time and performance.

The IAP also includes whatever support actions may be necessary to make the plan operable, e.g., water supply, utility control, self-contained breathing apparatus (SCBA) cylinder filling, etc.

Once the IAP is developed, the IC may start issuing directives and committing resources. These directives define objectives that must be completed in order to achieve the IAP goals. IAP's are not necessarily fully complete before orders are given, but sufficient information must be in place for the resources to achieve positive results effectively.

Once the plan is established and resources are committed, it is necessary to assess the effectiveness of the plan. Information must be gathered and analyzed so that necessary modification and updating may be done to improve the effectiveness of the plan, if necessary. This step is part of the continuing size-up process. Ongoing progress reporting by operational or management units allows the IAP to be modified based on current conditions. (A copy of a completed IAP--ICS 201 is included in the Appendix.)

IAP's generally are not written for day-to-day operations. However, on large-scale incidents, such as wildland fires, natural disasters, haz mat spills, etc., there should be a written plan for each operational period that is developed during a Planning meeting.

When only a few units are engaged actively in a simple incident, the IAP is developed in the mind of the IC. The IAP includes the strategy and tactics for the incident as well as the supporting operations that must occur. The IC must ensure that operating resources and managers know the overall strategy. This information normally is conveyed when orders are issued to arriving companies and other officers.

On large, complex incidents of long duration, the IAP must be written down. Naturally, the initial IAP is in the mind of the IC until sufficient staff arrives to create an overall plan and commit it to writing. It is highly advantageous on these types of incidents to have a Planning Meeting headed by the Planning Section Chief. All of the Command Staff and General Staff, as well as others designated by the IC, should attend the Planning Meeting. The plan is developed for the next operational period with input from attendees, and is placed in writing. All the attendees leave the meeting with an understanding of the goals and objectives to be accomplished.

Additional Planning Meetings are scheduled on a frequency dictated by the needs of the incident. Modifications to the plan then are made and distributed.

NOTE-TAKING GUIDE

WHAT IS AN INCIDENT ACTION PLAN?

Definition: An organized course of action that addresses all phases of incident control within a specified time.

Based on problems identified in size-up.

The action plan is the IC's solution to those problems.

When fully developed and implemented, the action plan will address:

Strategy and tactics comprise the plan.

Personnel safety should be an integral part of the plan.

NOTE-TAKING GUIDE

Plan should include organizational structure.

IDENTIFYING A STRATEGY

Definition: Broad goals. Overall plan used to control the incident.

Strategy gives direction to get you from where you are to where you want to be.

Strategy may have multiple components in order to gain control of an incident.

NOTE-TAKING GUIDE

Lloyd Layman's seven factors may be used to assist in the development of a strategy.

Lloyd Layman's seven factors (RECEO VS):

R escue	V entilation
E xposures	S alvage
C onfinement	
E xtinguishment	
O verhaul	

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

Example: Components of strategy.

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

Initially, the strategy provides a broad plan of what the IC needs to do at an incident.

NOTE-TAKING GUIDE

Having a strategy indicates that:

SELECTING TACTICS

Definition: Specific measurable objectives that are necessary for the achievement of the strategies.

Tactics are measurable and can be completed within a reasonable timeframe.

Example: Selecting tactics.

THE ACTION PLAN

Having developed the strategy and tactics that address the problems identified, the major components of the **plan** are in place.

NOTE-TAKING GUIDE

Completes the second step in the command sequence.

SUMMARY

Developing strategy and tactics is the **plan** phase of the command sequence.

Strategy and tactics need to be constantly evaluated to determine their effectiveness.

WHAT IS AN ACTION PLAN?

"Damn the torpedoes, full speed ahead!" Too often we go charging full speed into a burning building with the sole purpose of putting the "wet stuff on the red stuff." Custer went rushing in at Little Big Horn with the solution before first making an effort to properly identify the extent of the problem and thus created a number of promotional openings within his organization. After we have done an initial size-up and identified the problem, we need to offer a solution in the form of an **action plan** that addresses the problem.

An action plan is defined as an organized course of action that addresses all phases of incident control within a specified time.

The definition emphasizes some key points that go into making up an action plan. The first is an **organized** course of action. There are times when an engine is pulling up to a structure with flames shooting out the windows and it looks as though someone called in a bomb threat. The engine slows to about 5 mph and the crew bails off fighting for control of the nozzle to see who gets to be the first through the front door. This phenomenon is known as the "moth to the flame syndrome." Firefighters see the flame, the eyes glaze over, and the rush is on to squirt the wet stuff, with little thought given to an organized plan of action. The tasks firefighters perform must be organized in order to be effective and to protect personnel safety.

Another point the definition stresses is that the action plan should cover all phases of the emergency. Action planning doesn't stop until the last firefighter leaves the scene. The plan needs to cover the **entire** incident not just the initial assignments.

The third key point in the definition deals with accomplishing the plan **within a specified time**. When firefighters gather to exchange war stories, we hear tales of fires that took thousands of gallons of water and hours to put out. In reality what most probably occurred is the fire ran out of things to burn and went out on its own accord. We always win. The reason we always win is that nothing burns forever. What's important is gaining success before the fire gets tired and goes away. To do this requires a knowledge of how long it takes for firefighters to accomplish their assigned tasks and coordinating those efforts so that they are attained in a specified length of time. When this happens we have a realistic chance of claiming victory while there is still something to save rather than just wearing out the fire to its point of exhaustion.

Other components of an action plan should include an organizational structure that matches the complexity of the incident. Understanding and applying the Incident Command System (ICS) will provide the officer with an organizational framework which will maintain span of control, unity of command, channels of communications, and help protect personnel safety.

When fully developed and implemented, the action plan will have identified the strategy and tactics that address:

What needs to be done.
How it is to be accomplished.

IDENTIFYING A STRATEGY

Action planning starts with first identifying a strategy. Strategy is defined as the overall plan that will be used to control the incident.

Strategy is broad in nature and defines "what" must be done to provide a solution to the problems identified by the IC. The strategy developed by the IC gives direction to the personnel operating at the incident and lets them know where the IC is heading. In the 1950's, Lloyd Layman listed the seven factors that are still used by officers today to determine priorities and basic strategy. Those factors are:

RECEO VS

Rescue	Ventilation
Exposures	Salvage
Confinement	
Extinguishment	
Overhaul	

The problems presented by the situation often require that more than one factor be addressed to accomplish the IC's initial strategy.

Example:

Conditions: Alarm at 0245 hrs., fire on floor 1 of a 2-story, single-family dwelling of wood frame construction. Victim reported on second floor.

Problems: Rescue of possible victim(s), fire on first floor, and spread of heat, smoke, and fire to second floor, additional damage to structure.

Initial strategy:

Rescue victim on second floor and conduct primary search.

Perform ventilation - (ventilation/rescue/confinement/salvage).

Confine fire to area of origin.

As incident operations progress and the initial strategy is met, the IC adjusts the plan to meet a new set of problems.

Example:

Conduct secondary search (rescue).

Extinguish the fire (extinguishment).

Reduce further property damage (salvage).

Prevent rekindle (overhaul).

In developing the initial strategy, if the IC has identified more problems than there are resources to handle them, the IC must prioritize the order in which those problems are dealt with. An evaluation of available resources needs to be made and a judgment made as to how best to apply them to have the maximum impact. Additional resources should be called for to deal with pressing and anticipated problems identified by the IC.

Having a well-defined strategy gives personnel an understanding of what the IC is trying to accomplish and helps them to understand how they fit into the plan. A poorly defined strategy is one that takes into account only the most obvious reasons a fire department is called to an incident--to put out the fire. The IC must not get tunnel vision and focus solely on the act of "putting the fire out." There are other priorities, including rescue, exposure protection, confinement, ventilation, and salvage. It is easier to coordinate the fireground operations when personnel understand where they are heading and how their efforts will help in getting there.

SELECTING TACTICS

Once the strategy has been defined, then the IC needs to select the tactics. Tactics are defined as the operations that need to be completed in order to accomplish the strategy defined by the IC.

If strategy defines where you want to end up, then tactics are the signposts along the path you follow to get there. They provide the answers to the "how" and "where" of the action plan. They must be measurable so that the IC and those responsible to carry them out can evaluate their operations to determine if the action plan is working or whether modifications need to be made. Based on input the IC receives from those assigned the tactics, decisions will be made on how best to coordinate crews, whether additional resources are needed or others can be released or reassigned, or modifications need to be made to the action plan.

Example of tactics:

Conditions: Alarm at 0245 hrs., fire on floor 1 of a 2-story, single-family dwelling of wood frame construction. Victim reported on second floor.

Problems: Rescue of possible victim(s), fire on first floor, and spread of heat, smoke and fire to second floor. Additional damage to structure.

Strategy: Rescue, confinement/extinguishment, ventilation.

Tactics: Confine fire to room of origin, protect stairway for rescuers and possible removal of victims, conduct primary search starting with sleeping areas and means of exit, horizontal ventilation, check for extension to second floor.

The tactics in this example address "how" the strategy is to be addressed and "where" they occur. As these tactics are accomplished, additional tactics can be assigned such as conducting secondary search and performing property conservation measures.

THE ACTION PLAN

Having developed the strategy and tactics that address the problems identified, the major components of the plan are in place. The what and how questions have been answered, priorities have been established, planning has been done prior to actions taken, and the IC is operating in a proactive mode. This completes the second step in the command sequence.

SUMMARY

By developing the strategy and tactics based on the problems identified in the size-up phase of the command sequence, the IC has the major components of an **action plan** in place. The "what", "how", and "where" questions have been answered and the IC has stayed in the **proactive** mode by identifying the problems, evaluating available resources, establishing priorities, and providing a solution to the problems that set the direction for the firefighters to work toward.

When the IC established the strategy and tactics the initial **plan** phase of the command sequence has been completed.

Activity 3.1

Identifying a Strategy

Purpose

The purpose of this activity is to demonstrate the ability to develop an initial strategy using the command sequence.

Directions

Your group will be assigned a scenario. As a group, you will be given 20 minutes to:

1. Read the information provided for your assigned scenario.
2. Do a mental size-up.
3. Place on an easel pad the problems that are identified.
4. Determine the applicable initial strategies.

Place each strategy at the top of a separate easel pad page.

5. Tape the easel pad to the wall in the RECEO VS priority order.

Scenarios have a Quick Access Prefire Plan and a plot plan.

Save the easel pad sheets used for your group's solution. They will be used for the activities in the following units in this course.

Your group will select a spokesperson to give your group's report when called upon. Group reports are allotted 5 minutes.

Activity 3.1 (cont'd)

Identifying a Strategy

The problems identified and strategies on the suggested answers are those that are pertinent to the first 2-3 crews that arrive.

Scenario 1 - Two-Story Apartment House

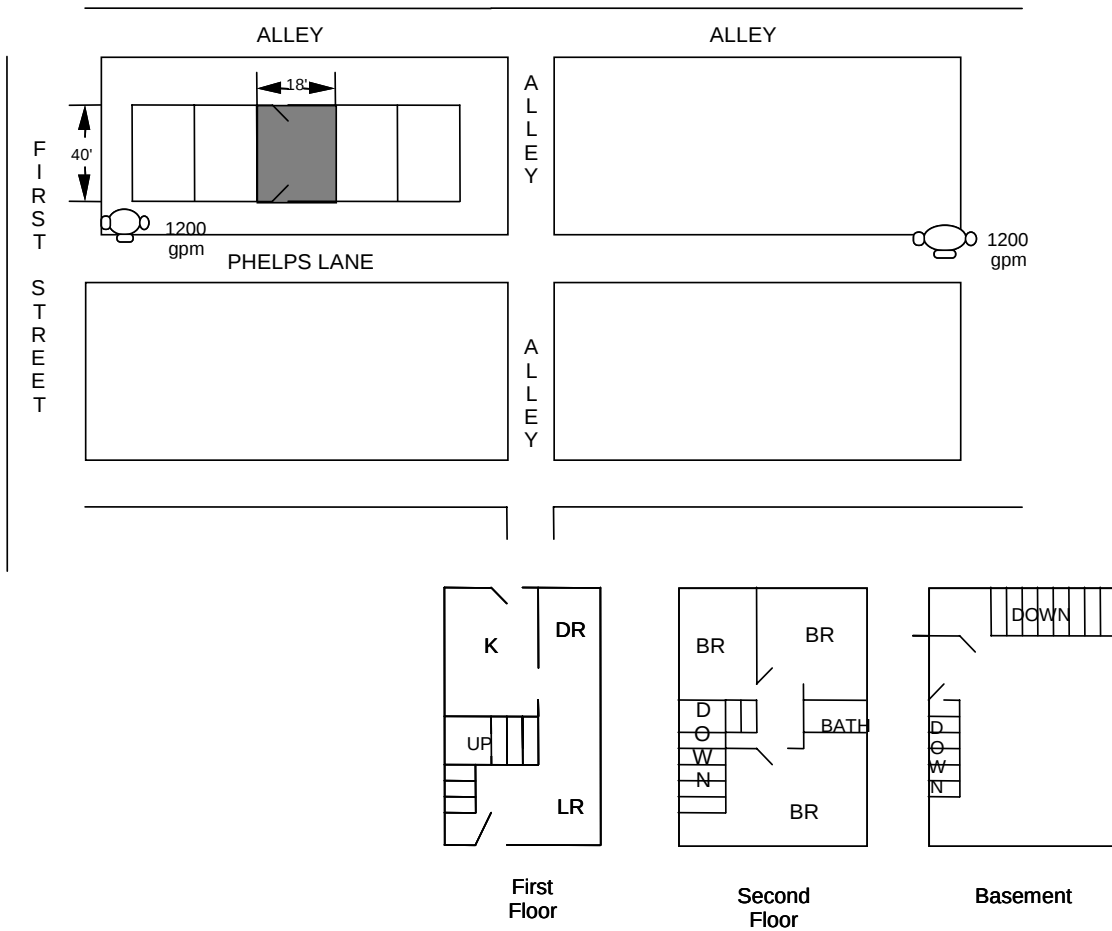
Scenario 2 - Small Shopping Center

Scenario 3 - Community Bar

Scenario 4 - Townhouse

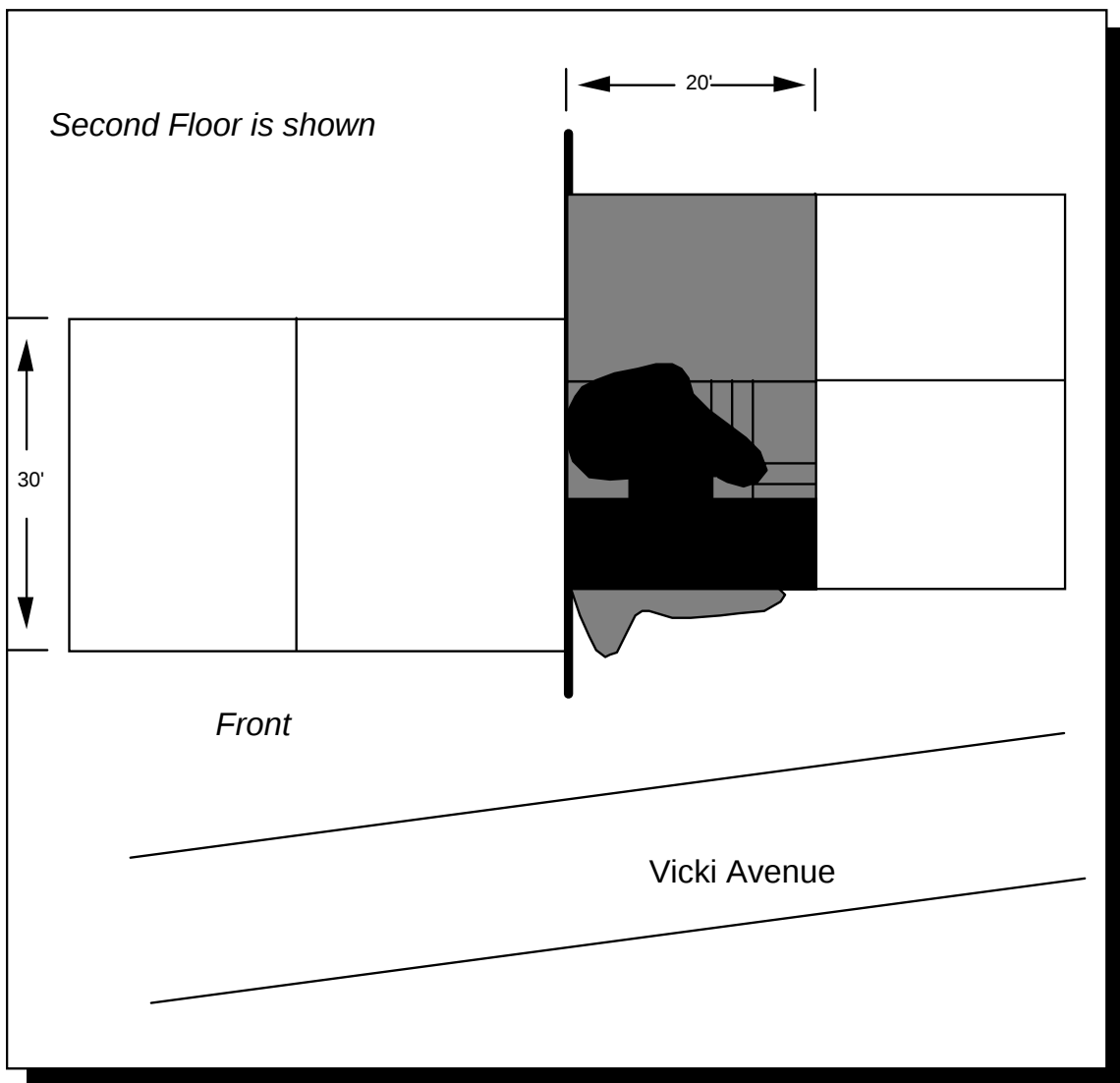
Scenario 5 - Apartments Under Construction

Activity 3.1 (cont'd) Example Scenario Plot Plan/Floor Plan



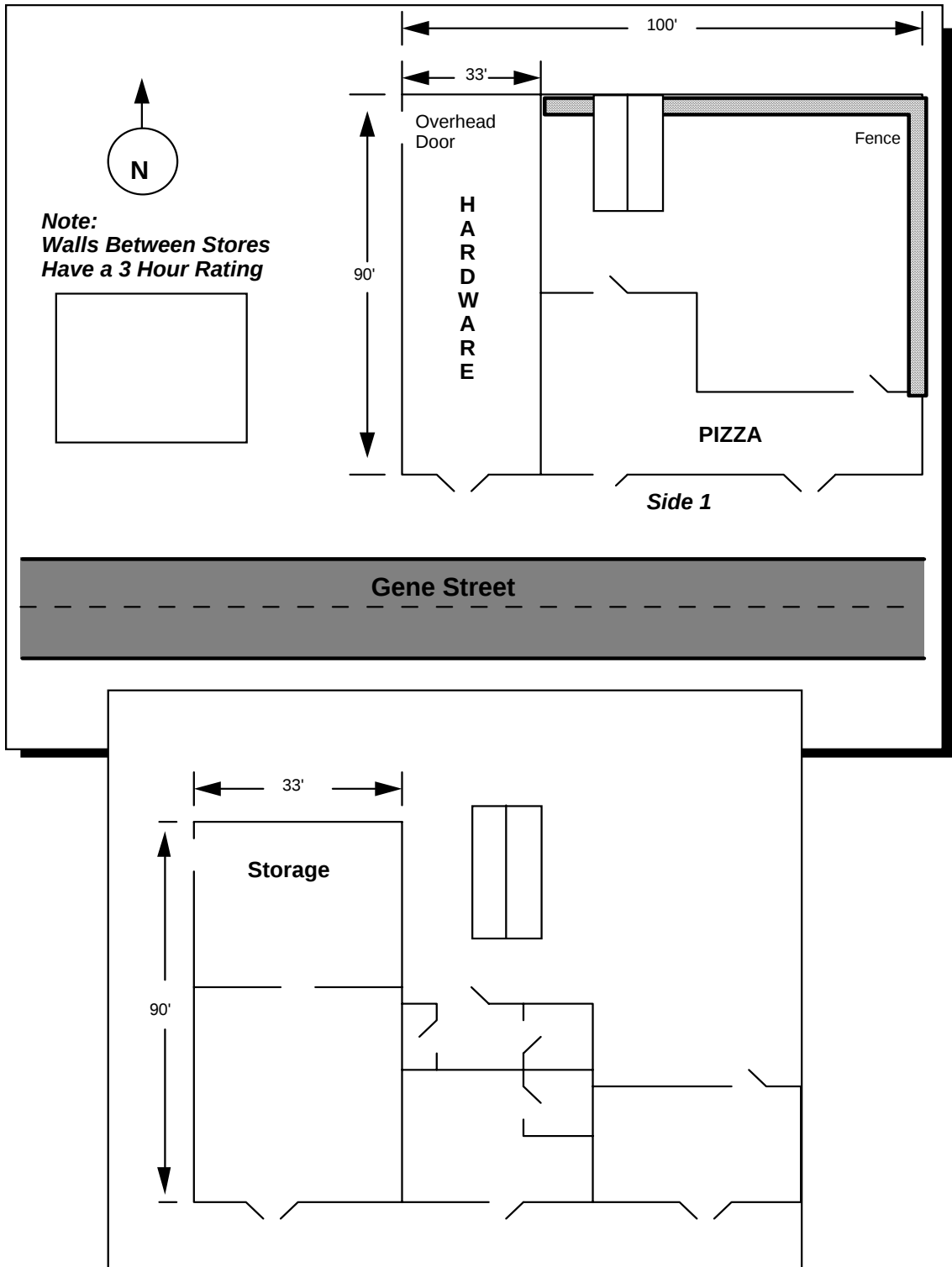
Activity 3.1 (cont'd) Example Scenario Quick Access Prefire Plan																	
Building Address: <i>100-108 Phelps Lane</i>																	
Building Description: <i>40' x 18', 2-story, ordinary (masonry wood-joist), common attic</i> Roof Construction: <i>Ridge pole and rafter, 1" x 6" sheathing</i> Floor Construction: <i>Beam and rafter, sheathing, hardwood floor</i>																	
Occupancy Type: <i>Townhouse</i>	Initial Resources Required: <i>2E, 1T, 1C 13 personnel</i>																
Hazards to Personnel: <i>None out of ordinary</i>																	
Location of Water Supply: <i>Phelps Lane & 1st Street</i>	Available Flow: <i>1,200 gpm</i>																
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <td colspan="4">Estimated Fire Flow</td> </tr> <tr> <td>Level of Involvement</td> <td><i>25%</i></td> <td><i>50%</i></td> <td><i>75%</i></td> <td><i>100%</i></td> </tr> <tr> <td>Estimated Fire Flow</td> <td><i>100</i></td> <td><i>200</i></td> <td><i>300</i></td> <td><i>420</i></td> </tr> </table> <i>Fire flow based on 1st floor of home with 2 exterior and 1 interior exposures</i>				Estimated Fire Flow				Level of Involvement	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>	Estimated Fire Flow	<i>100</i>	<i>200</i>	<i>300</i>	<i>420</i>
	Estimated Fire Flow																
Level of Involvement	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>													
Estimated Fire Flow	<i>100</i>	<i>200</i>	<i>300</i>	<i>420</i>													
Fire Behavior Prediction: <i>Rapid horizontal and vertical spread</i>																	
Predicted Strategies: <i>Rescue, ventilation, exposures, confinement, extinguishment</i>																	
Problems Anticipated: <i>No more than usual for a dwelling</i>																	
Standpipe: <i>None</i>	Sprinklers: <i>None</i>	Fire Detection: <i>None</i>															

Activity 3.1 (cont'd) Plot Plan/Floor Plan Scenario 1



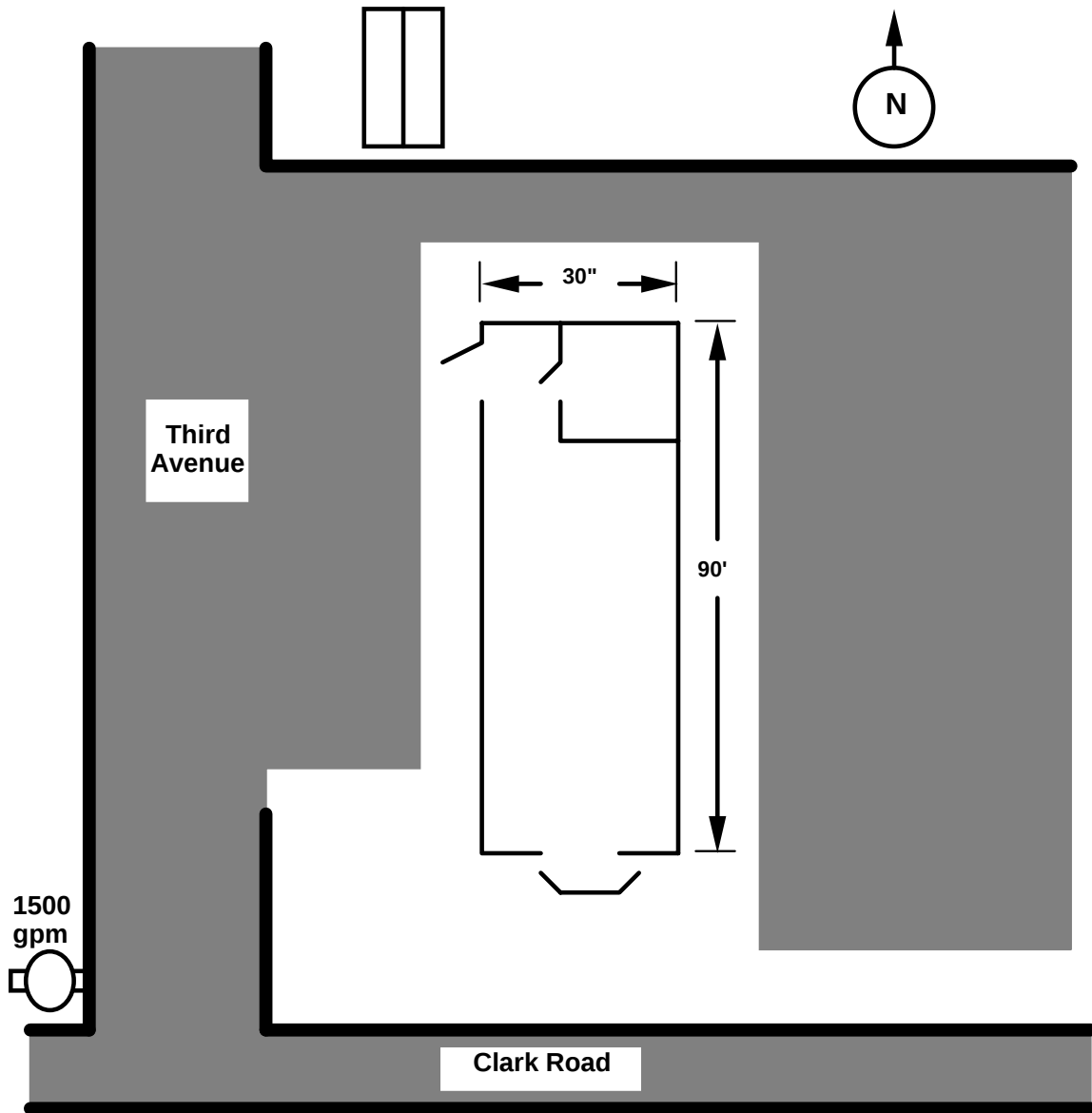
Activity 3.1 (cont'd) Scenario 1 Quick Access Prefire Plan																			
Building Address: <i>475 Vicki Avenue</i>																			
Building Description: <i>20' x 30', 2-story, wood frame</i> Roof Construction: <i>Wood truss, gusset plate assembly</i> Floor Construction: <i>Parallel chord wood truss covered with plywood</i>																			
Occupancy Type: <i>Apartment</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>None more than usual for a dwelling</i>																			
Location of Water Supply: <i>Determined by class</i>		Available Flow: <i>Determined by class</i>																	
<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td></td> <th colspan="4">Estimated Fire Flow</th> </tr> <tr> <th>Level of Involvement</th> <td style="text-align: center;">25%</td> <td style="text-align: center;">50%</td> <td style="text-align: center;">75%</td> <td style="text-align: center;">100%</td> </tr> <tr> <th>Estimated Fire Flow</th> <td style="text-align: center;">150</td> <td style="text-align: center;">300</td> <td style="text-align: center;">450</td> <td style="text-align: center;">600</td> </tr> </table> <i>Fire flow based on 2 floors and 2 exterior exposures</i>						Estimated Fire Flow				Level of Involvement	25%	50%	75%	100%	Estimated Fire Flow	150	300	450	600
	Estimated Fire Flow																		
Level of Involvement	25%	50%	75%	100%															
Estimated Fire Flow	150	300	450	600															
Fire Behavior Prediction: <i>Fast horizontal and vertical spread</i>																			
Predicted Strategies: <i>Rescue, ventilation, confinement, extinguishment</i>																			
Problems Anticipated: <i>Early collapse of floor and roof assemblies</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 3.1 (cont'd)
Scenario 2
Plot Plan/Floor Plan



Activity 3.1 (cont'd) Scenario 2 Quick Access Prefire Plan																			
Building Address: <i>1020 Gene Street</i>																			
Building Description: <i>2, 1-story, ordinary construction; largest fire area 33' x 90' firewall between occupancies</i>																			
Roof Construction: <i>Wooden 2" x 10" rafters, plywood, composition roof covering</i>																			
Floor Construction: <i>Concrete slab</i>																			
Occupancy Type: <i>Retail stores</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>Pesticides, flammable/combustible liquids</i>																			
Location of Water Supply: <i>Determined by class</i>		Available Flow: <i>Determined by class</i>																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <th colspan="4">Estimated Fire Flow</th> </tr> <tr> <th>Level of Involvement</th> <td>25%</td> <td>50%</td> <td>75%</td> <td>100%</td> </tr> <tr> <th>Estimated Fire Flow</th> <td>375</td> <td>750</td> <td>1,125</td> <td>1,500</td> </tr> </table> <i>Fire flow of largest fire area--hardware store and 2 exposures</i>						Estimated Fire Flow				Level of Involvement	25%	50%	75%	100%	Estimated Fire Flow	375	750	1,125	1,500
	Estimated Fire Flow																		
Level of Involvement	25%	50%	75%	100%															
Estimated Fire Flow	375	750	1,125	1,500															
Fire Behavior Prediction: <i>Rapid horizontal spread within one occupancy</i>																			
Predicted Strategies: <i>Confinement, ventilation, extinguishment</i>																			
Problems Anticipated: <i>Poor rear access, limited horizontal ventilation</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 3.1 (cont'd)
Scenario 3
Plot Plan/Floor Plan



Activity 3.1 (cont'd)
Scenario 3
Quick Access Prefire Plan

Building Address: *1590 Clark Road*

Building Description: *30' x 90', 1-story, ordinary construction with basement*

Roof Construction: *2" x 10" rafters, plywood, composition covering*

Floor Construction: *2" x 10" rafters, sheathing and hardwood flooring*

Occupancy Type:
Bar and Lounge

Initial Resources Required:
Determined by class

Hazards to Personnel:
None more than usual

Location of Water Supply:
Corner of Clark Road and Third Ave.

Available Flow:
1,500 gpm

	Estimated Fire Flow			
Level of Involvement	25%	50%	75%	100%
Estimated Fire Flow	225	450	675	900

Fire Behavior Prediction:
Rapid horizontal fire spread

Predicted Strategies:
Confinement, ventilation, extinguishment

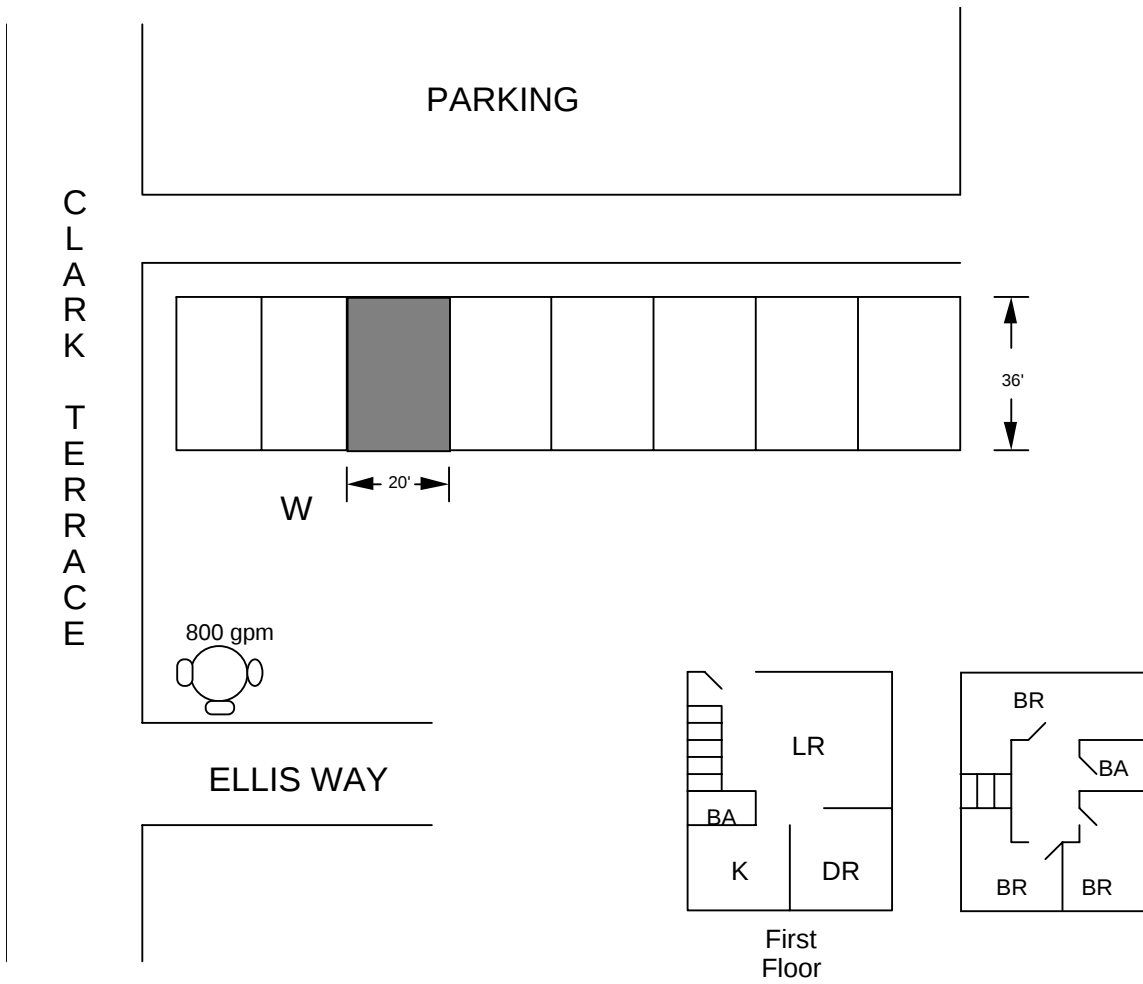
Problems Anticipated:
Interference by patrons

Standpipe:
None

Sprinklers:
None

Fire Detection:
None

Activity 3.1 (cont'd)
Scenario 4
Plot Plan/Floor Plan



Activity 3.1 (cont'd)
Scenario 4
Quick Access Prefire Plan

Building Address: *600-614 Clark Terrace*

Building Description: *20' x 36', 2-story, wood frame*

Roof Construction: *2" x 4", nailed, wood truss, common attic*

Floor Construction: *1st floor--concrete slab, 2nd floor--platform, 2" x 8" rafters, plywood sheathing*

Occupancy Type:
Townhouse

Initial Resources Required:
Determined by class

Hazards to Personnel:
None more than normal for a dwelling

Location of Water Supply:
Clark Terrace and Ellis Way

Available Flow:
800 gpm

	Estimated Fire Flow			
Level of Involvement	25%	50%	75%	100%
Estimated Fire Flow	100	200	300	420

Fire flow based on 1st floor of 1 house with 2 exterior and 1 interior exposures

Fire Behavior Prediction:
Rapid horizontal and vertical spread

Predicted Strategies:
Rescue, exposures, ventilation, confinement, extinguishment

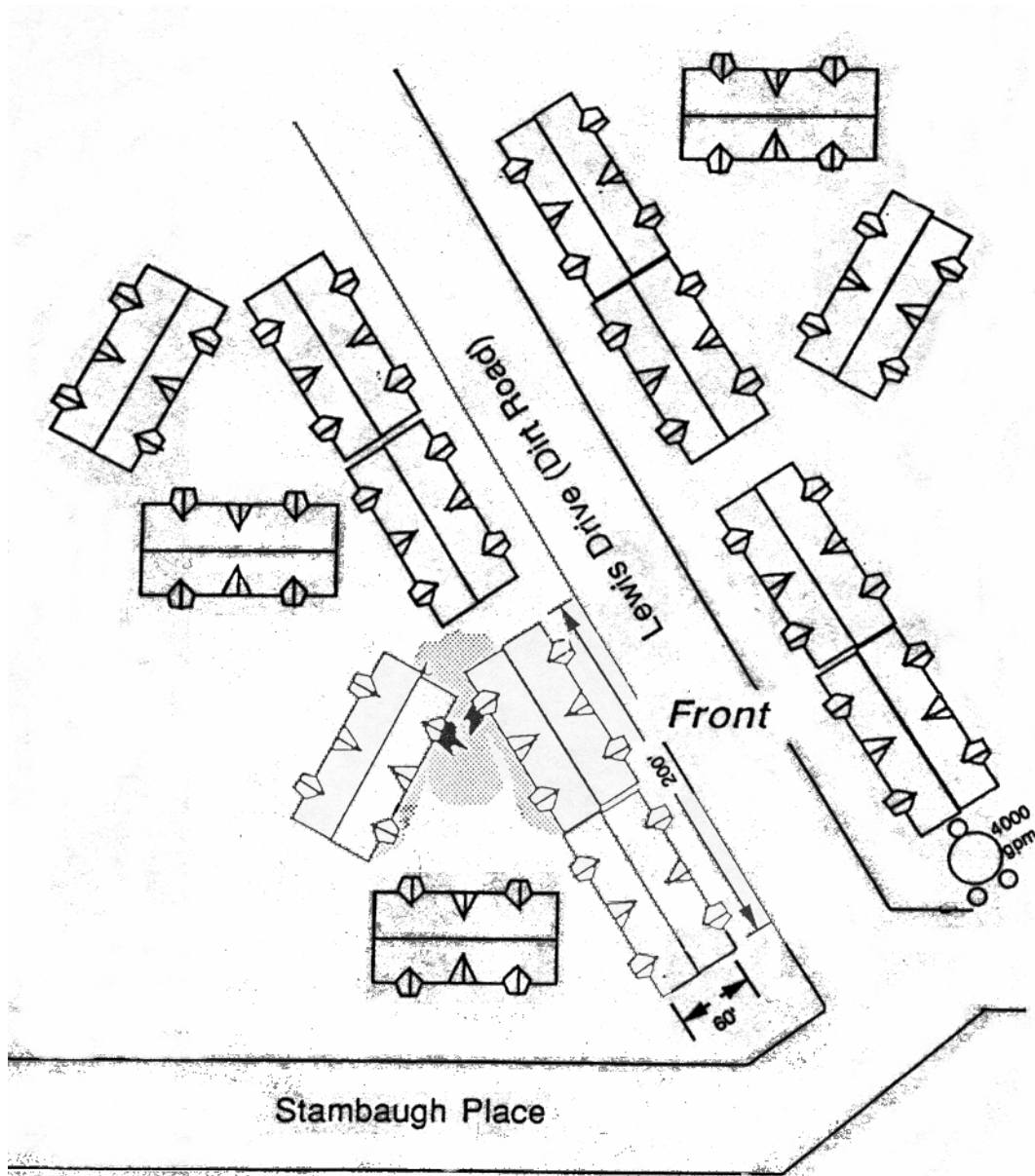
Problems Anticipated:
Limited access, limited egress, common attic

Standpipe:
None

Sprinklers:
None

Fire Detection:
None

Activity 3.1 (cont'd)
Scenario 5
Plot Plan/Floor Plan



Activity 3.1 (cont'd) Scenario 5 Quick Access Prefire Plan																			
Building Address: <i>Lewis Drive and Stambaugh Place</i>																			
Building Description: <i>60' x 200', 3-story, wood frame (under construction)</i> Roof Construction: <i>2" x 4" gusset plate wood truss, plywood sheathing</i> Floor Construction: <i>1st floor--concrete slab, 2nd/3rd floor--parallel chord wood truss, plywood sheathing</i>																			
Occupancy Type: <i>Unoccupied apartments</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>Radiant heat, early collapse, rapid fire spread--no drywall on walls</i>																			
Location of Water Supply: <i>Lewis Drive and Stambaugh Place</i>		Available Flow: <i>4,000 gpm</i>																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <th colspan="4">Estimated Fire Flow</th> </tr> <tr> <th>Level of Involvement</th> <td>5%</td> <td>10%</td> <td>25%</td> <td>100%</td> </tr> <tr> <th>Estimated Fire Flow</th> <td>750</td> <td>1,500</td> <td>3,750</td> <td>15,000</td> </tr> </table> <i>Fire flow on entire open 3-story building with exposure</i>						Estimated Fire Flow				Level of Involvement	5%	10%	25%	100%	Estimated Fire Flow	750	1,500	3,750	15,000
	Estimated Fire Flow																		
Level of Involvement	5%	10%	25%	100%															
Estimated Fire Flow	750	1,500	3,750	15,000															
Fire Behavior Prediction: <i>Rapid horizontal and vertical spread</i>																			
Predicted Strategies: <i>Exposures, confinement, extinguishment</i>																			
Problems Anticipated: <i>Limited access, unfinished roads</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 3.2

Selecting Tactics

Purpose

The purpose of this activity is to use the command sequence and demonstrate the ability to select tactics that will achieve a well-defined strategy.

Directions

Your group will be assigned a scenario. As a group, you will be given 20 minutes to:

1. Come to a consensus on tactics for each strategy.
2. Write the tactics under the appropriate strategy.
3. Leave the easel pads on the wall.

Your group will select a spokesperson to give your group report. This will be a person who has not given a report on this unit.

Activity 3.2 (cont'd)

Selecting Tactics

Scenario 1 - Two-Story Apartment House

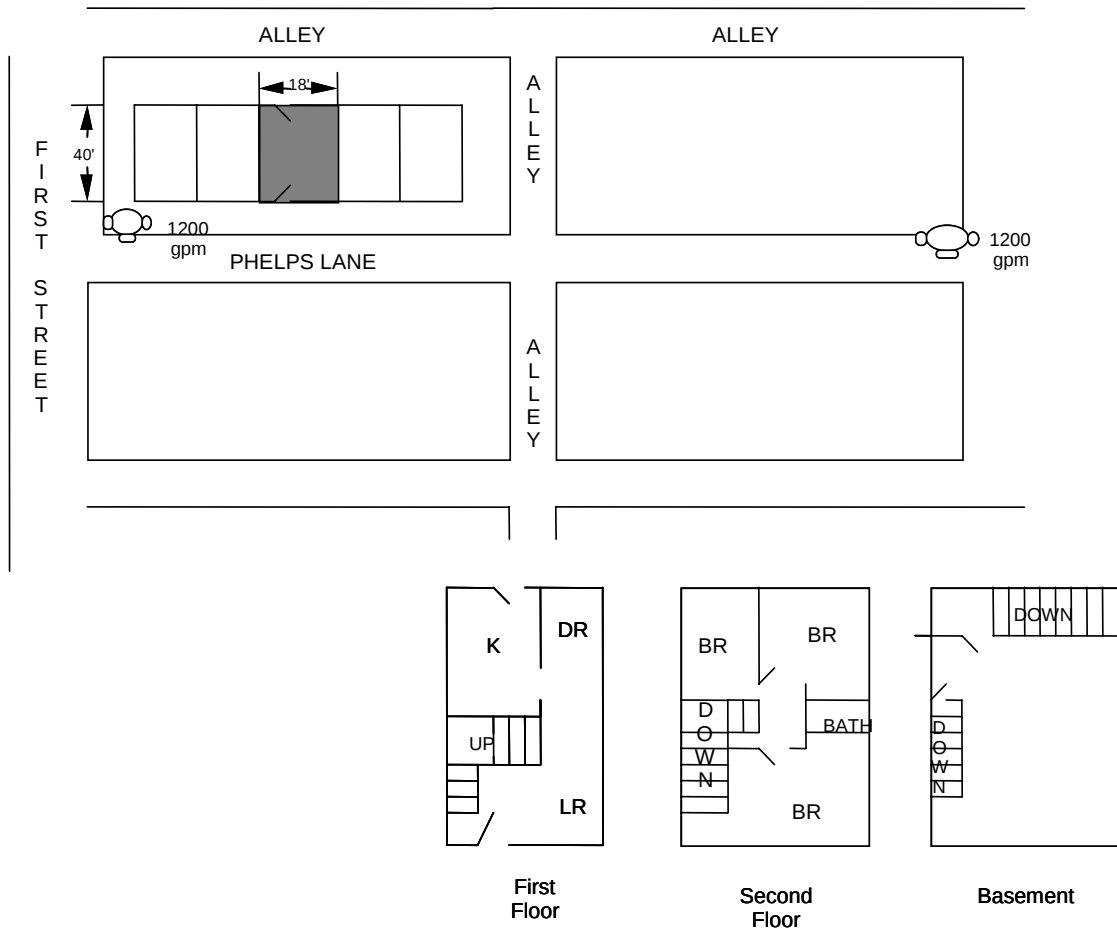
Scenario 2 - Small Shopping Center

Scenario 3 - Community Bar

Scenario 4 - Townhouse

Scenario 5 - Apartments Under Construction

Activity 3.2 (cont'd) Example Scenario Plot Plan/Floor Plan



Activity 3.2 (cont'd)
Example Scenario
Quick Access Prefire Plan

Building Address: *100-108 Phelps Lane*

Building Description: *40' x 18', 2-story, ordinary (masonry wood-joist), common attic*

Roof Construction: *Ridge pole and rafter, 1" x 6" sheathing*

Floor Construction: *Beam and rafter, sheathing, hardwood floor*

Occupancy Type:
Townhouse

Initial Resources Required:
2E, 1T, 1C 13 personnel

Hazards to Personnel:
None out of ordinary

Location of Water Supply:
Phelps Lane & 1st Street

Available Flow:
1,200 gpm

	Estimated Fire Flow			
Level of Involvement	25%	50%	75%	100%
Estimated Fire Flow	100	200	300	420

Fire flow based on 1st floor of home with 2 exterior and 1 interior exposures

Fire Behavior Prediction:
Rapid horizontal and vertical spread

Predicted Strategies:
Rescue, ventilation, exposures, confinement, extinguishment

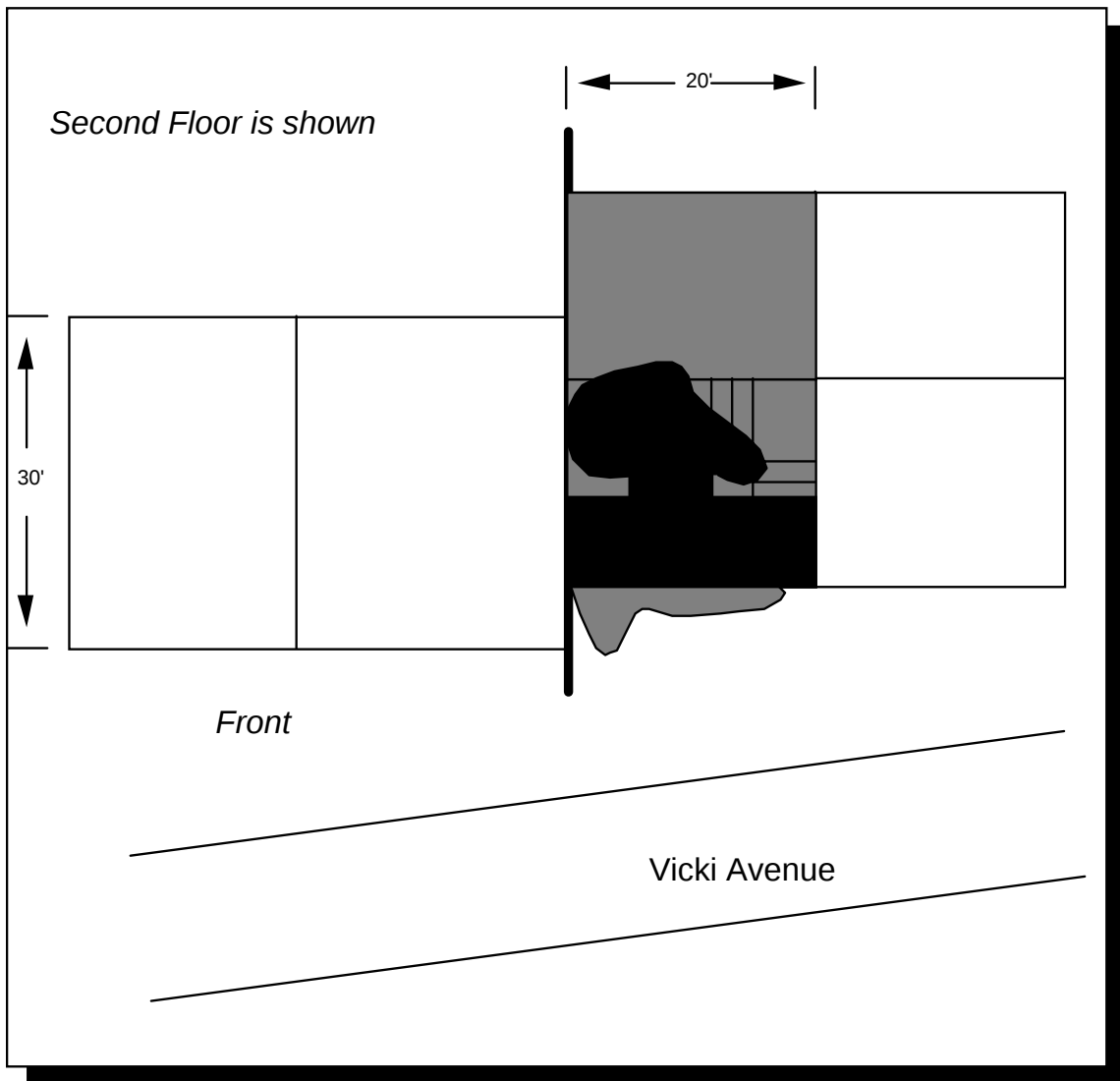
Problems Anticipated:
No more than usual for a dwelling

Standpipe:
None

Sprinklers:
None

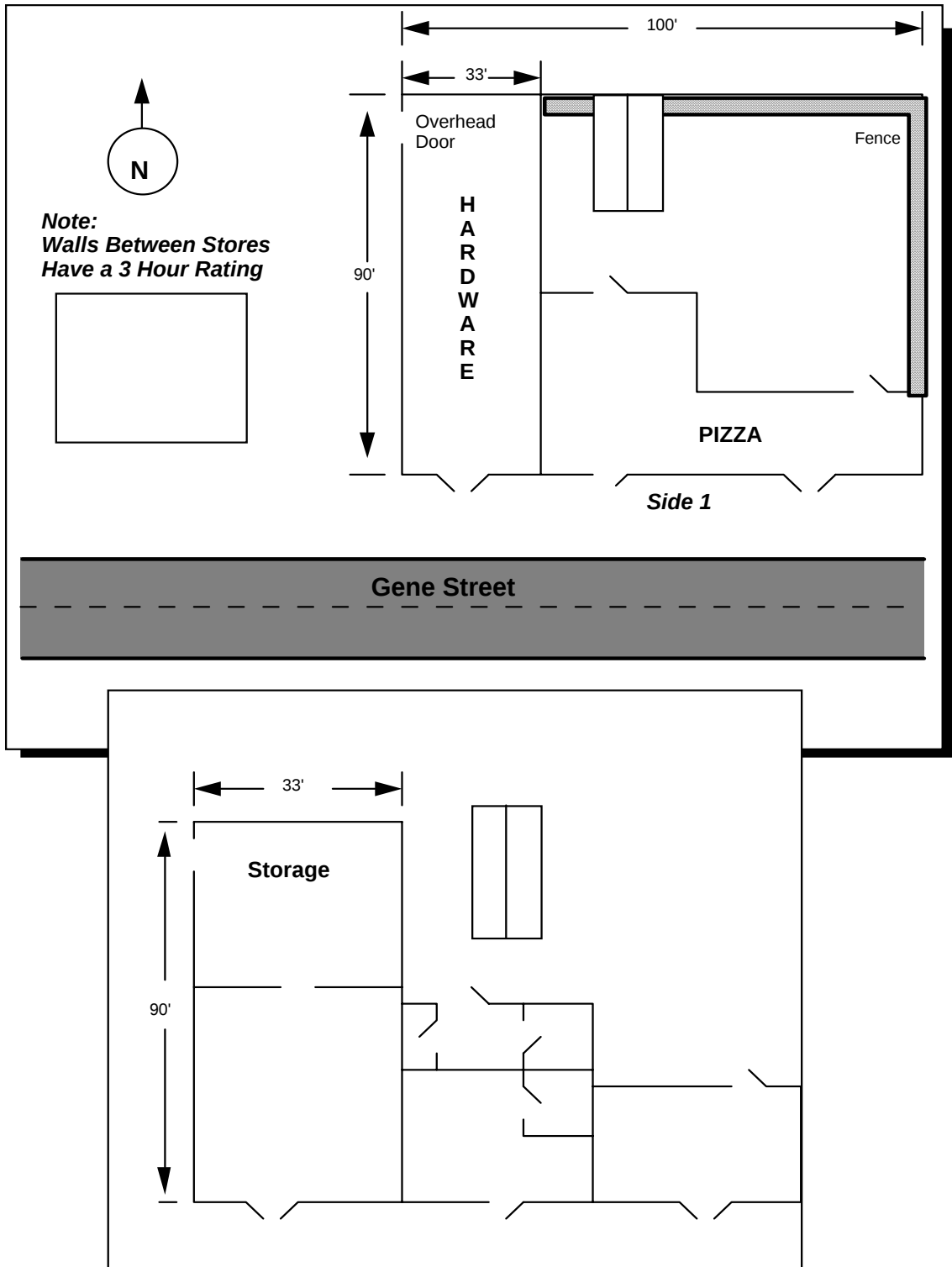
Fire Detection:
None

Activity 3.2 (cont'd)
Plot Plan/Floor Plan
Scenario 1



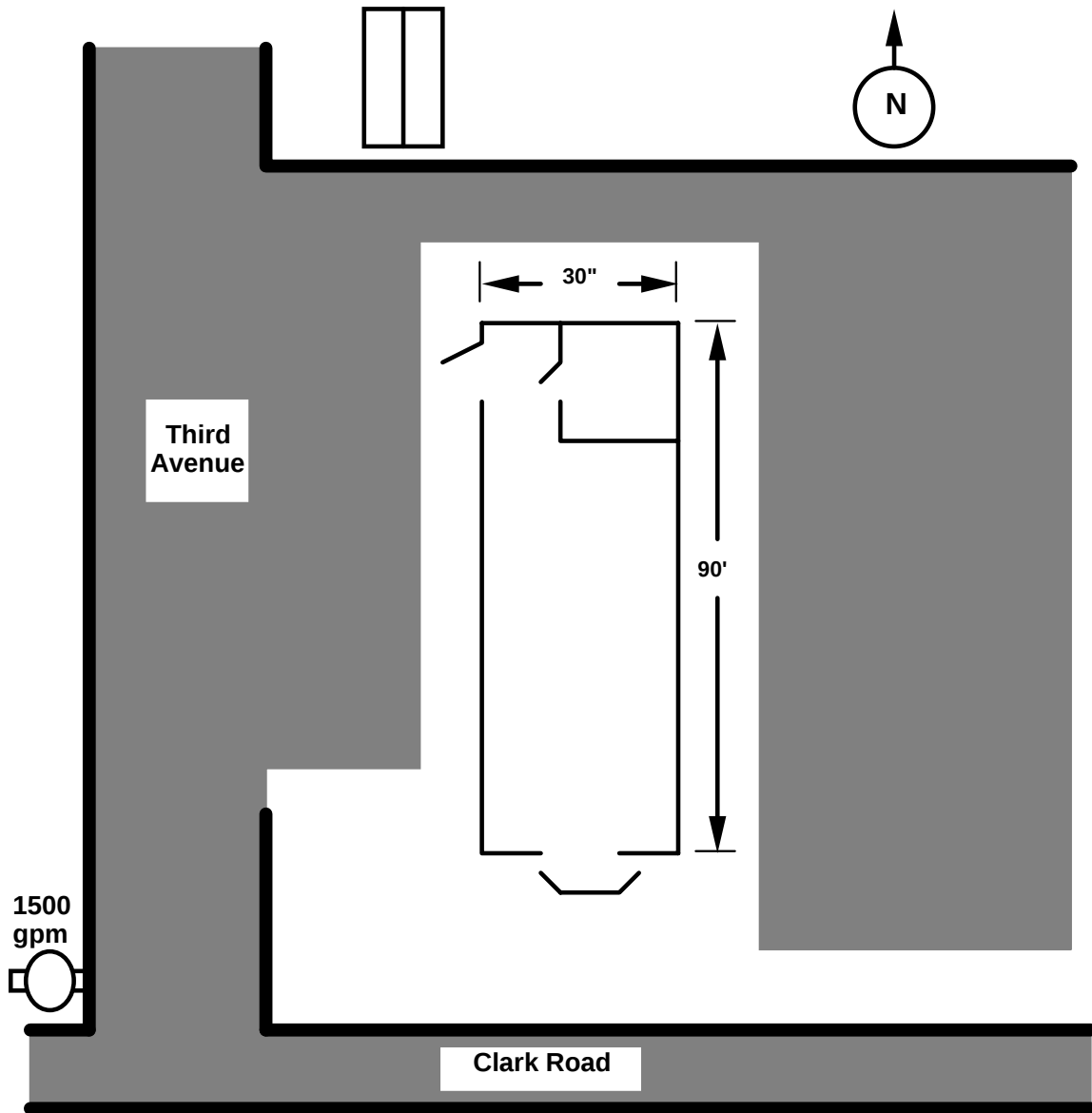
Activity 3.2 (cont'd) Scenario 1 Quick Access Prefire Plan																			
Building Address: <i>475 Vicki Avenue</i>																			
Building Description: <i>20' x 30', 2-story, wood frame</i> Roof Construction: <i>Wood truss, gusset plate assembly</i> Floor Construction: <i>Parallel chord wood truss covered with plywood</i>																			
Occupancy Type: <i>Apartment</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>None more than usual for a dwelling</i>																			
Location of Water Supply: <i>Determined by class</i>		Available Flow: <i>Determined by class</i>																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <td colspan="4">Estimated Fire Flow</td> </tr> <tr> <td>Level of Involvement</td> <td><i>25%</i></td> <td><i>50%</i></td> <td><i>75%</i></td> <td><i>100%</i></td> </tr> <tr> <td>Estimated Fire Flow</td> <td><i>150</i></td> <td><i>300</i></td> <td><i>450</i></td> <td><i>600</i></td> </tr> </table> <i>Fire flow based on 2 floors and 2 exterior exposures</i>						Estimated Fire Flow				Level of Involvement	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>	Estimated Fire Flow	<i>150</i>	<i>300</i>	<i>450</i>	<i>600</i>
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Fire Behavior Prediction: <i>Fast horizontal and vertical spread</i>																			
Predicted Strategies: <i>Rescue, ventilation, confinement, extinguishment</i>																			
Problems Anticipated: <i>Early collapse of floor and roof assemblies</i>																			
Standpipe: <i>None</i>	Sprinklers: <i>None</i>	Fire Detection: <i>None</i>																	

Activity 3.2 (cont'd)
Scenario 2
Plot Plan/Floor Plan



Activity 3.2 (cont'd) Scenario 2 Quick Access Prefire Plan																			
Building Address: <i>1020 Gene Street</i>																			
Building Description: <i>2, 1-story, ordinary construction; largest fire area 33' x 90' firewall between occupancies</i>																			
Roof Construction: <i>Wooden 2" x 10" rafters, plywood, composition roof covering</i>																			
Floor Construction: <i>Concrete slab</i>																			
Occupancy Type: <i>Retail stores</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>Pesticides, flammable/combustible liquids</i>																			
Location of Water Supply: <i>Determined by class</i>		Available Flow: <i>Determined by class</i>																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <th colspan="4">Estimated Fire Flow</th> </tr> <tr> <th>Level of Involvement</th> <td>25%</td> <td>50%</td> <td>75%</td> <td>100%</td> </tr> <tr> <th>Estimated Fire Flow</th> <td>375</td> <td>750</td> <td>1,125</td> <td>1,500</td> </tr> </table> <i>Fire flow of largest fire area--hardware store and 2 exposures</i>						Estimated Fire Flow				Level of Involvement	25%	50%	75%	100%	Estimated Fire Flow	375	750	1,125	1,500
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Level of Involvement	25%	50%	75%	100%															
Estimated Fire Flow	375	750	1,125	1,500															
Fire Behavior Prediction: <i>Rapid horizontal spread within one occupancy</i>																			
Predicted Strategies: <i>Confinement, ventilation, extinguishment</i>																			
Problems Anticipated: <i>Poor rear access, limited horizontal ventilation</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 3.2 (cont'd)
Scenario 3
Plot Plan/Floor Plan



Activity 3.2 (cont'd)
Scenario 3
Quick Access Prefire Plan

Building Address: *1590 Clark Road*

Building Description: *30' x 90', 1-story, ordinary construction with basement*

Roof Construction: *2" x 10" rafters, plywood, composition covering*

Floor Construction: *2" x 10" rafters, sheathing and hardwood flooring*

Occupancy Type:
Bar and Lounge

Initial Resources Required:
Determined by class

Hazards to Personnel:
None more than usual

Location of Water Supply:
Corner of Clark Road and Third Ave.

Available Flow:
1,500 gpm

	Estimated Fire Flow			
Level of Involvement	25%	50%	75%	100%
Estimated Fire Flow	225	450	675	900

Fire Behavior Prediction:
Rapid horizontal fire spread

Predicted Strategies:
Confinement, ventilation, extinguishment

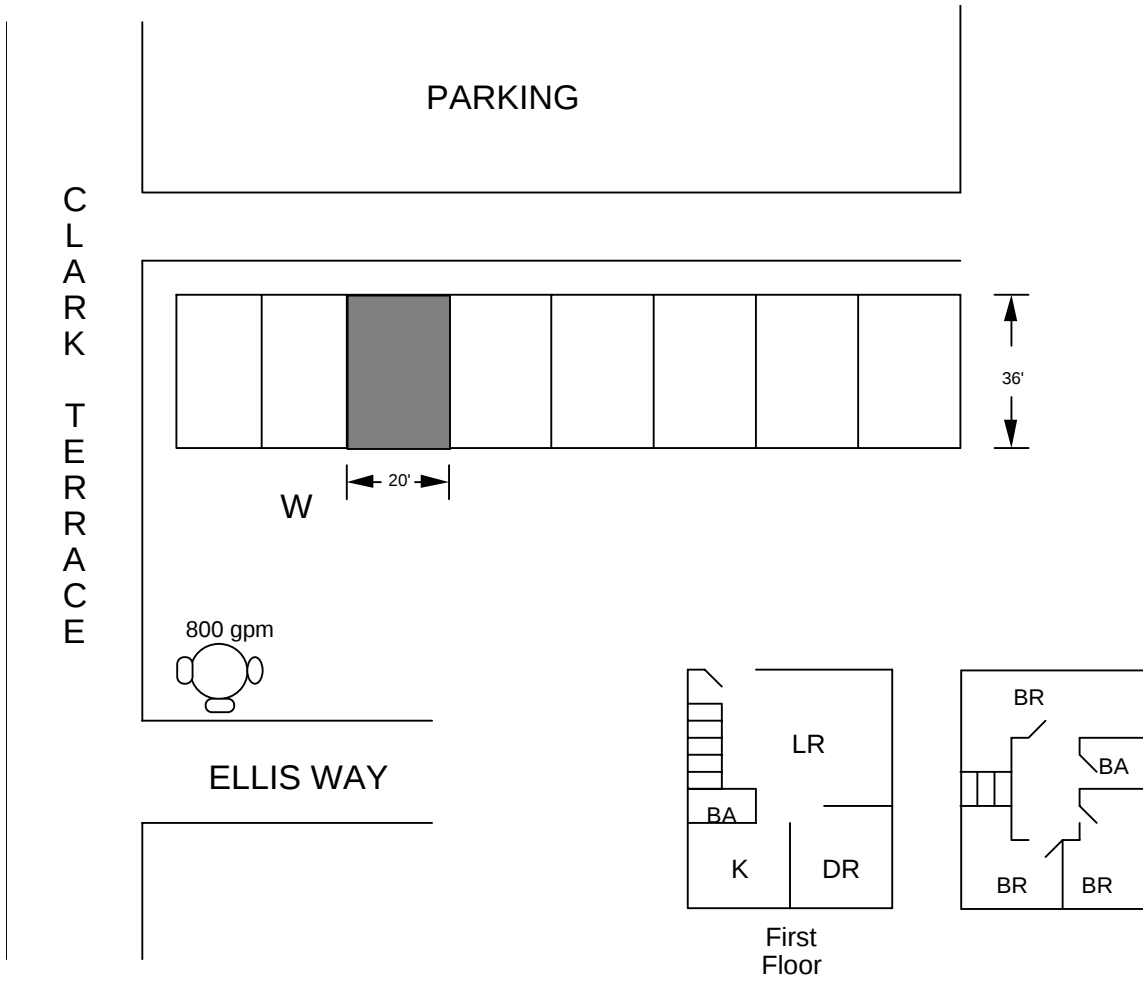
Problems Anticipated:
Interference by patrons

Standpipe:
None

Sprinklers:
None

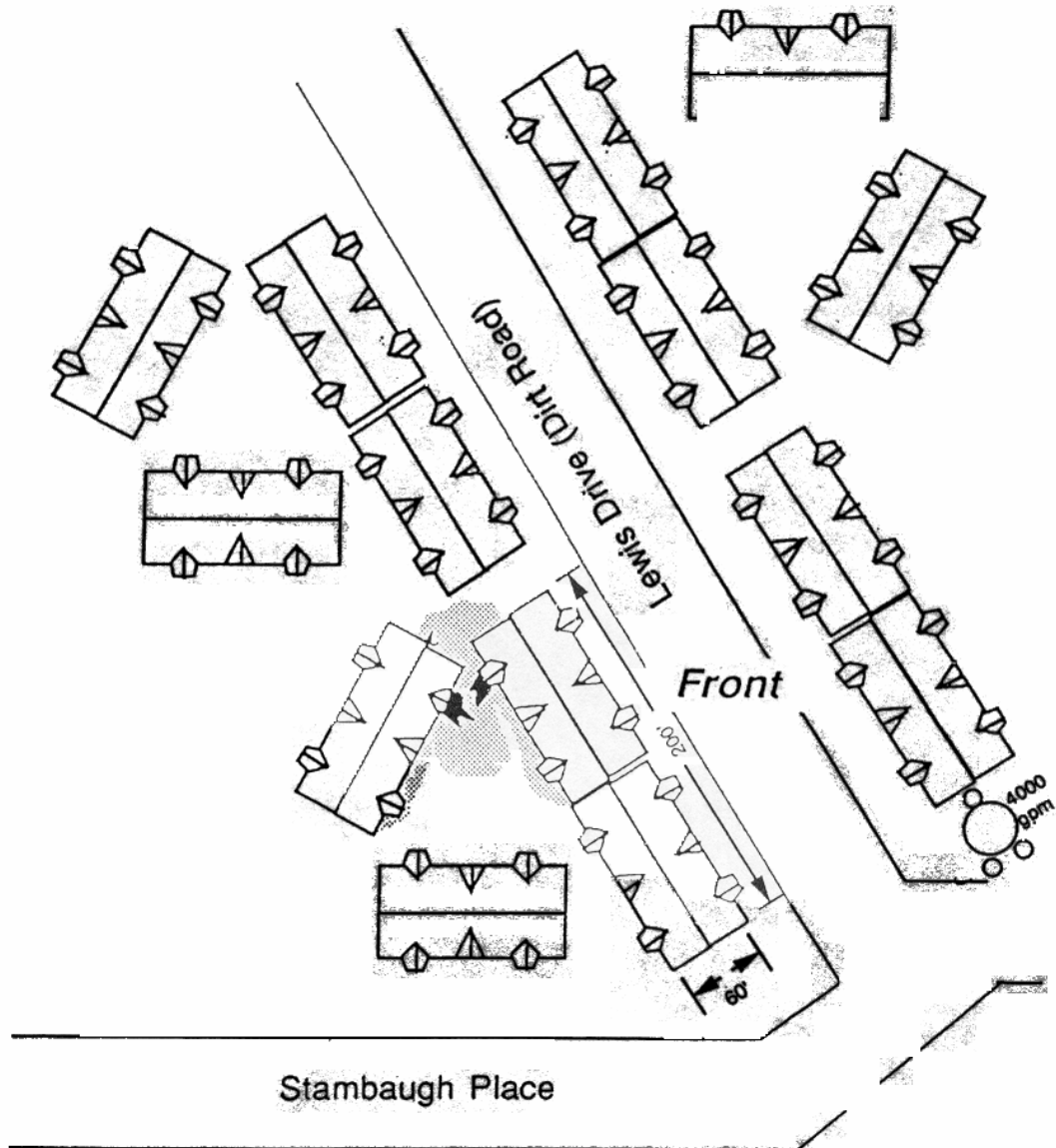
Fire Detection:
None

Activity 3.2 (cont'd)
Scenario 4
Plot Plan/Floor Plan



Activity 3.2 (cont'd) Scenario 4 Quick Access Prefire Plan																			
Building Address: <i>600-614 Clark Terrace</i>																			
Building Description: <i>20' x 36', 2-story, wood frame</i> Roof Construction: <i>2" x 4", nailed, wood truss, common attic</i> Floor Construction: <i>1st floor--concrete slab, 2nd floor--platform, 2" x 8" rafters, plywood sheathing</i>																			
Occupancy Type: <i>Townhouse</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>None more than normal for a dwelling</i>																			
Location of Water Supply: <i>Clark Terrace and Ellis Way</i>		Available Flow: <i>800 gpm</i>																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <th colspan="4">Estimated Fire Flow</th> </tr> <tr> <th>Level of Involvement</th> <td>25%</td> <td>50%</td> <td>75%</td> <td>100%</td> </tr> <tr> <th>Estimated Fire Flow</th> <td>100</td> <td>200</td> <td>300</td> <td>420</td> </tr> </table> <i>Fire flow based on 1st floor of 1 house with 2 exterior and 1 interior exposures</i>						Estimated Fire Flow				Level of Involvement	25%	50%	75%	100%	Estimated Fire Flow	100	200	300	420
	Estimated Fire Flow																		
Level of Involvement	25%	50%	75%	100%															
Estimated Fire Flow	100	200	300	420															
Fire Behavior Prediction: <i>Rapid horizontal and vertical spread</i>																			
Predicted Strategies: <i>Rescue, exposures, ventilation, confinement, extinguishment</i>																			
Problems Anticipated: <i>Limited access, limited egress, common attic</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 3.2 (cont'd)
Scenario 5
Plot Plan/Floor Plan



Activity 3.2 (cont'd)
Scenario 5
Quick Access Prefire Plan

Building Address: *Lewis Drive and Stambaugh Place*

Building Description: *60' x 200', 3-story, wood frame (under construction)*

Roof Construction: *2" x 4" gusset plate wood truss, plywood sheathing*

Floor Construction: *1st floor--concrete slab, 2nd/3rd floor--parallel chord wood truss, plywood sheathing*

Occupancy Type:
Unoccupied apartments

Initial Resources Required:
Determined by class

Hazards to Personnel:
Radiant heat, early collapse, rapid fire spread--no drywall on walls

Location of Water Supply:
Lewis Drive and Stambaugh Place

Available Flow:
4,000 gpm

	Estimated Fire Flow			
Level of Involvement	5%	10%	25%	100%
Estimated Fire Flow	750	1,500	3,750	15,000

Fire flow on entire open 3-story building with exposure

Fire Behavior Prediction:
Rapid horizontal and vertical spread

Predicted Strategies:
Exposures, confinement, extinguishment

Problems Anticipated:
Limited access, unfinished roads

Standpipe:
None

Sprinklers:
None

Fire Detection:
None

MODULE 4: IMPLEMENTING THE INCIDENT ACTION PLAN

OBJECTIVES

The students will:

- 1. Identify three methods of implementing an action plan.*
 - 2. Demonstrate the ability to use effective communications to assign tactical objectives.*
 - 3. Given a scenario with identified strategies and tactics, determine the acceptable assignments to implement the action plan.*
-

NOTE-TAKING GUIDE

IMPLEMENTING THE ACTION PLAN

Having completed the **think** (size-up) and **plan** (strategy and tactics) parts of the command sequence, the IC is now ready to **act**.

Last step prior to implementing the action plan is to evaluate available resources.

Tactical operations.

METHODS OF IMPLEMENTING THE ACTION PLAN

The IC has a choice as to how the plan is implemented.

Assigning tactics.

NOTE-TAKING GUIDE

Task definition: Tasks are those duties and activities performed by individuals, teams, crews, or companies which lead to the successful accomplishment of the designated tactic.

Assigning tasks.

Using SOP's.

COMMUNICATING THE ACTION PLAN

Best plan doesn't always work if you can't get others to understand what you are trying to do.

Communicate the plan in the order you want it accomplished.

Officers need to communicate task assignments to crews.

NOTE-TAKING GUIDE

SUMMARY

Implementation is the **act** part of the command sequence.

Three methods to communicate the action plan.

Communicating the action plan.

IMPLEMENTING THE ACTION PLAN

We have now reached the point in the command sequence where the fun starts. Having done a thorough size-up (Think) and formulated the strategy and tactics (Plan), we are ready to ACT and start putting the "wet stuff on the red stuff." The IC has determined the problems, has an action plan that addresses the problems, and has done a resource evaluation. Based on that resource evaluation the IC is now ready to carry out the plan.

Applying Resources

How well the action plan works will depend in large part on how well the IC applies the resources available or still responding. Several questions need to be addressed as part of the resource evaluation and the priorities the IC has established prior to crews being assigned. What resources can best accomplish which tactics? (Truck companies are usually better equipped to do ventilation and above-ground rescue than engine companies.) Are there enough resources to carry out the action plan? If not, call for more **now**. Is there a need for specialized equipment (heavy rescue squads, haz mat units, air trucks)? Is technical help needed (building engineers, specially trained fire personnel, product)? Will the current resources most likely need relief? (Have relief personnel there and ready, or get them on their way.)

As part of the initial size-up the IC would have identified existing or potential safety hazards. The hazards should be strongly considered when the IC determines the resource assignments in an effort to protect personnel safety.

Tactical Operations and Tasks

Tactical Operations are the specific tasks carried out by the assigned resources to accomplish the selected tactic.

IC's may talk about "their" fires and how "they" fought them, but we all know fires get put out by firefighters working in the worst of conditions and doing the things necessary to make IC's look good. We call these duties **tasks** and they are defined as those duties and activities performed by individuals, teams, crews, or companies that lead to the successful accomplishment of the designated tactic.

METHODS OF IMPLEMENTING THE ACTION PLAN

To implement the plan, the IC needs to communicate the assignments clearly so that all personnel have an understanding as to "who" is doing "what," and then coordinate "when" each assignment is to be initiated.

Assigning Tactics

The IC has a choice of available methods to implement the action plan. One choice is by assigning tactics. The tactics should be assigned in the order they need to be accomplished, which will aid in the coordination of the fireground activities. An example of assigning tactics is:

"Engine 1, confine the fire to room of origin and protect stairway for rescue on the second floor."

"Truck 1, conduct primary search on second floor."

By assigning tactics the IC allows companies the flexibility to determine the tasks that will best accomplish the tactics. Assigning tactics also limits the amount of radio traffic needed to implement the action plan, allows companies to react immediately to unforeseen or changing conditions, and reduces the demands placed on the IC.

When given its assigned tactic, the company has its job description, which will be the basis for feedback to the IC as to whether or not it is accomplishing its assignment. If all goes well and headway is being made, the IC needs to have the news that this portion of the action plan is working. If the company is unable to achieve its assignment the IC needs to be advised as soon as possible so that adjustments can be made in the action plan. To do this it is essential the IC be apprised as to why the company is not capable of attaining its assigned tactic. Not enough resources? Need specialized resources? Unanticipated conditions? Conditions have deteriorated since the original assignment? Whatever the bad news might be, let the IC know in time for the action plan to be modified so that the tactic can be successfully carried out. Whoever is assigned to accomplish the tactic has the responsibility to do what is necessary to get it done.

Assigning Tasks

Another method of implementing the action plan is for the IC to assign specific tasks rather than tactics which are broader in nature. An example of a task assignment would be:

"Engine 1, advance a 1-3/4" handline through the door on side B and attack the fire."

Tasks are those duties and activities performed by individuals, teams, crews, or companies that lead to the successful accomplishment of the designated tactics.

When assigning tasks rather than tactics, the IC retains the responsibility for the tasks being accomplished. This increases the amount of involvement on the part of the IC. Orders become more involved and take longer to convey, it increases the amount of radio traffic for the IC, and increases the number of decisions the IC must make.

While there are disadvantages to assigning tasks, there are times when it may be necessary or to the IC's advantage to do so. Some examples might be when the IC is assigning a company with little experience or training and is not comfortable giving the company the latitude to determine how the tactic should be met. Another could be when there are mutual-aid companies not involved in combined training and unfamiliar with what the IC expects when it is assigned a tactic to meet. A third would be when the assignment the IC has for a company is critical to the success of the action plan and there is even the slightest possibility of misunderstanding between the IC and the officer responsible for carrying out the assignment.

Using SOP's

A common method used by many departments to implement an action plan is the use of standard operating procedures (SOP's). SOP's are departmental policies that call for predetermined actions on the part of the responders to be taken under typical conditions.

SOP's require a minimal amount of communication to get the plan implemented. They limit the amount of time it takes to get companies into service when they are taking predesignated actions. When the SOP's are followed each company on the initial assignment knows what the other is doing and can coordinate its actions accordingly.

There are some inherent concerns officers should be aware of when using SOP's to implement the action plan. Among those is that SOP's do not fit

every emergency, and companies may take action before the problem is correctly identified. This may endanger personnel and result in a lack of coordination. Predetermined actions do not always work at an undetermined emergency.

Based on the IC's initial size-up, or because of safety considerations, the decision could be made to take exception to departmental SOP's. If this should occur it is important for the IC to inform the responding units that this is not a typical incident and to make sure they understand what the conditions are that warranted making a change in how they would usually approach an incident of this nature. If the IC doesn't let everyone know, firefighters will assume the worst and their actions will be tentative when the IC is expecting an aggressive attack. This is not the time for the IC to withhold information and keep secrets. Let responders know, so they can understand why this incident does not fit the typical mold.

COMMUNICATING THE ACTION PLAN

Having done everything to perfection up to this point you now have the perfect action plan and, therefore, can expect flawless results. Right? Wrong! The world's record action plan still can end up in the toilet if those responsible for carrying it out cannot understand what the IC is trying to do. How well you communicate the action plan will have a major impact on how well it is carried out.

Communicate the Plan

Good communication skills start with getting yourself calmed down to the point where you can convey the assignments to the companies in a calm, rational manner. This may require you to take a few seconds to **GYST** (Gather Yourself Together). Screaming, whimpering, and speaking at an octave level only dogs can hear does not instill confidence in those you are asking to make entry into a burning building. The IC needs to convey assignments in a clear, concise, and logical manner so that there is no misunderstanding and responders can have confidence in what he/she is asking them to do.

By communicating the plan in order of accomplishment the IC can give an initial indication of how the plan needs to be coordinated. The IC also should make it very clear to everyone if the operational mode is offensive, defensive, or transitional.

By using the communication model to transmit the action plan, the IC assures that assignments are understood by both the IC and those who received the assignment. A well-communicated action plan helps all to understand what the IC is trying to accomplish and how their part of the plan will help achieve the selected strategy.

Task Assignments

Not only does the IC need to communicate assignments effectively to the companies, the officers receiving the assignments need to communicate to their crews the tasks that need to be accomplished. The same requirements for effective communication apply to the officers as were applied to the IC. It is at the company or crew level where any misunderstanding can adversely affect the safety of personnel and turn a good action plan into a bad one.

SUMMARY

The command sequence offers an organized method of action planning that stresses following a logical process to identify the problems, developing a solution to address those problems, providing for firefighter safety, and keeping the IC in the proactive mode. For it to be effective officers need to use it at every incident so that it becomes a matter of habit. When used properly, it allows us to do a much more effective job of putting the "wet stuff on the red stuff."

Activity 4.1

Implementing The Action Plan

Purpose

The purpose of this activity is to make the appropriate assignments to effectively implement the action plan.

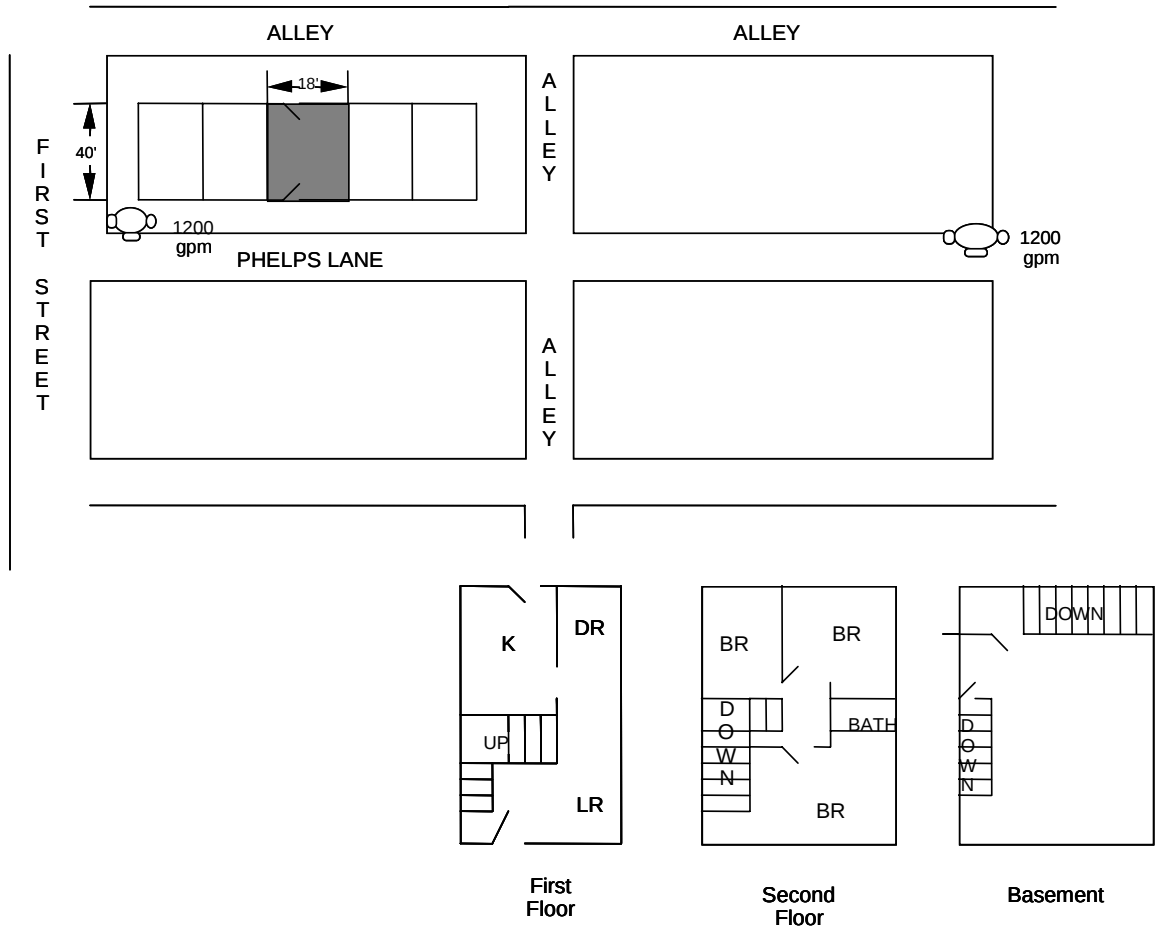
Directions

Your group will be assigned a scenario. As a group you will be given 20 minutes to:

1. Review the strategy and tactics identified in Activities 3.1 and 3.2.
2. Based on the strategy and tactics you have established, determine the assignments you would give the first-alarm responders to accomplish your action plan.
3. When listing your assignments on the easel pad, do not explain your assignments but state them in the same manner you would if transmitting them on the radio to the other responders.
4. Do not use SOP's as a method of implementing your action plan.
5. Apply the principles learned in the previous units to implementing your plan.

Your group will select a spokesperson to give your group report.

Activity 4.1 (cont'd) Example Scenario Plot Plan/Floor Plan



Activity 4.1 (cont'd)
Example Scenario
Quick Access Prefire Plan

Building Address: *100-108 Phelps Lane*

Building Description: *40' x 18', 2-story, ordinary (masonry wood-joist), common attic*

Roof Construction: *Ridge pole and rafter, 1" x 6" sheathing*

Floor Construction: *Beam and rafter, sheathing, hardwood floor*

Occupancy Type:
Townhouse

Initial Resources Required:
2E, 1T, 1C 13 personnel

Hazards to Personnel:
None out of ordinary

Location of Water Supply:
Phelps Lane & 1st Street

Available Flow:
1,200 gpm

	Estimated Fire Flow			
Level of Involvement	25%	50%	75%	100%
Estimated Fire Flow	100	200	300	420

Fire flow based on 1st floor of home with 2 exterior and 1 interior exposures

Fire Behavior Prediction:
Rapid horizontal and vertical spread

Predicted Strategies:
Rescue, ventilation, exposures, confinement, extinguishment

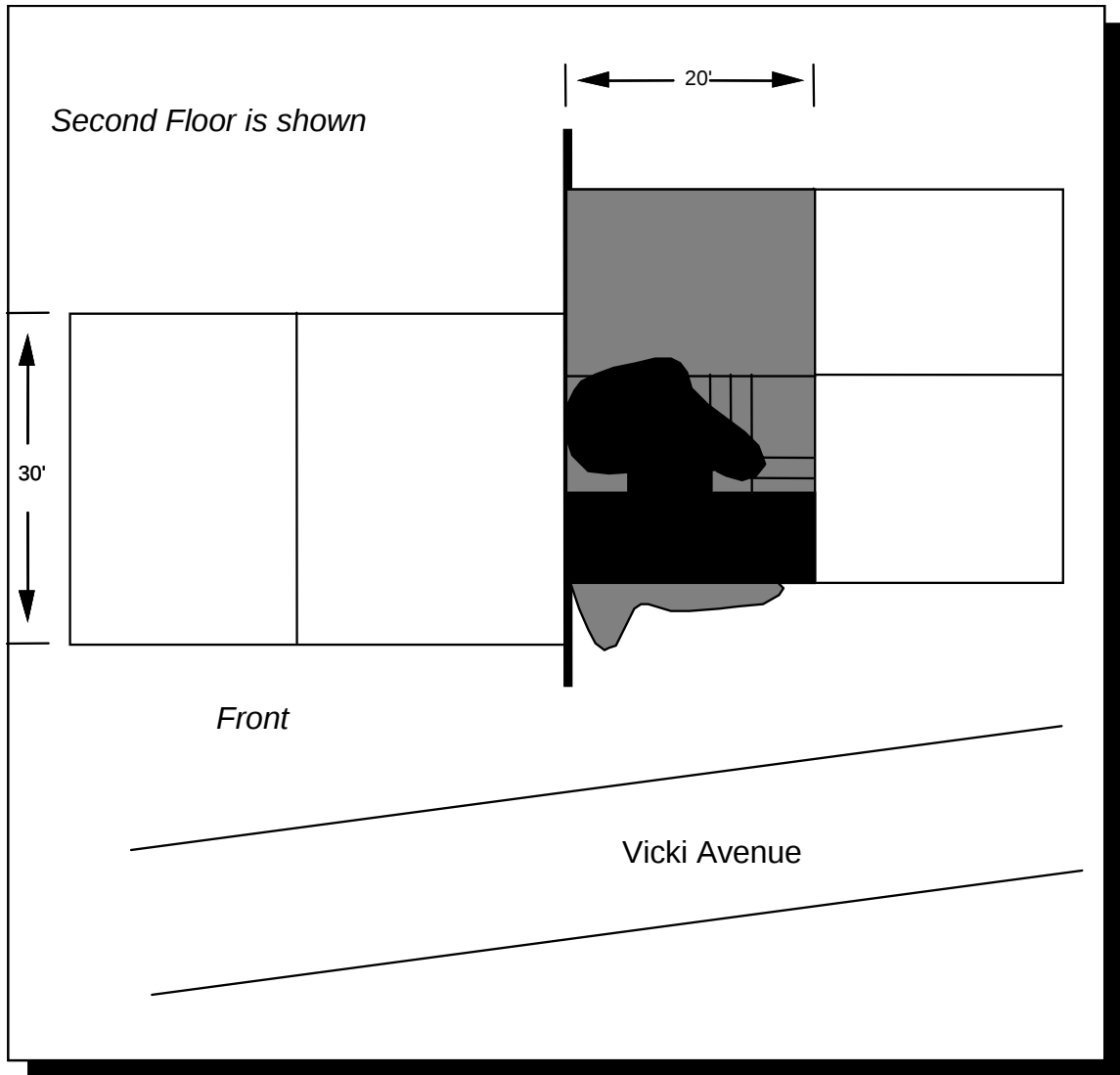
Problems Anticipated:
No more than usual for a dwelling

Standpipe:
None

Sprinklers:
None

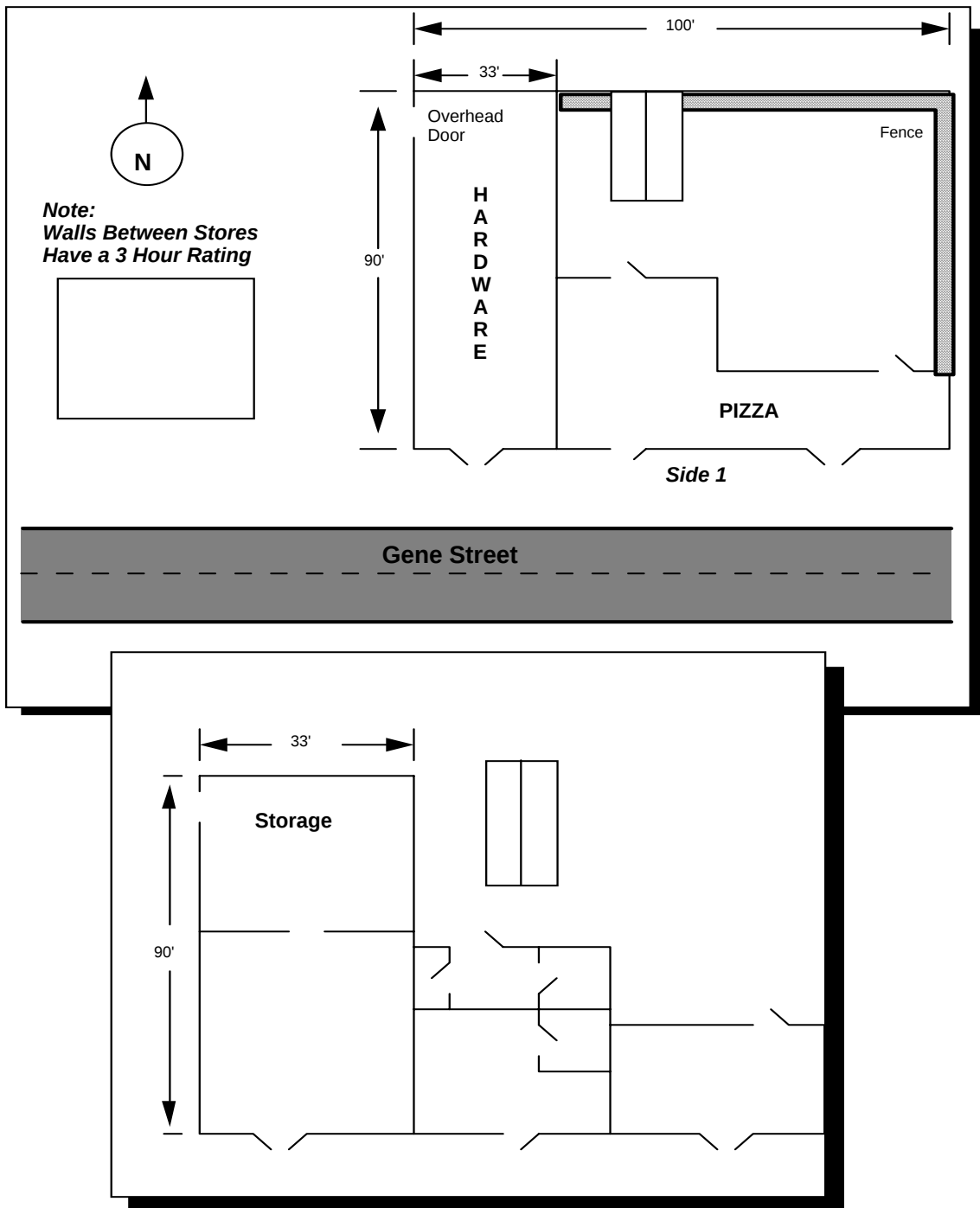
Fire Detection:
None

Activity 4.1 (cont'd)
Plot Plan/Floor Plan
Scenario 1



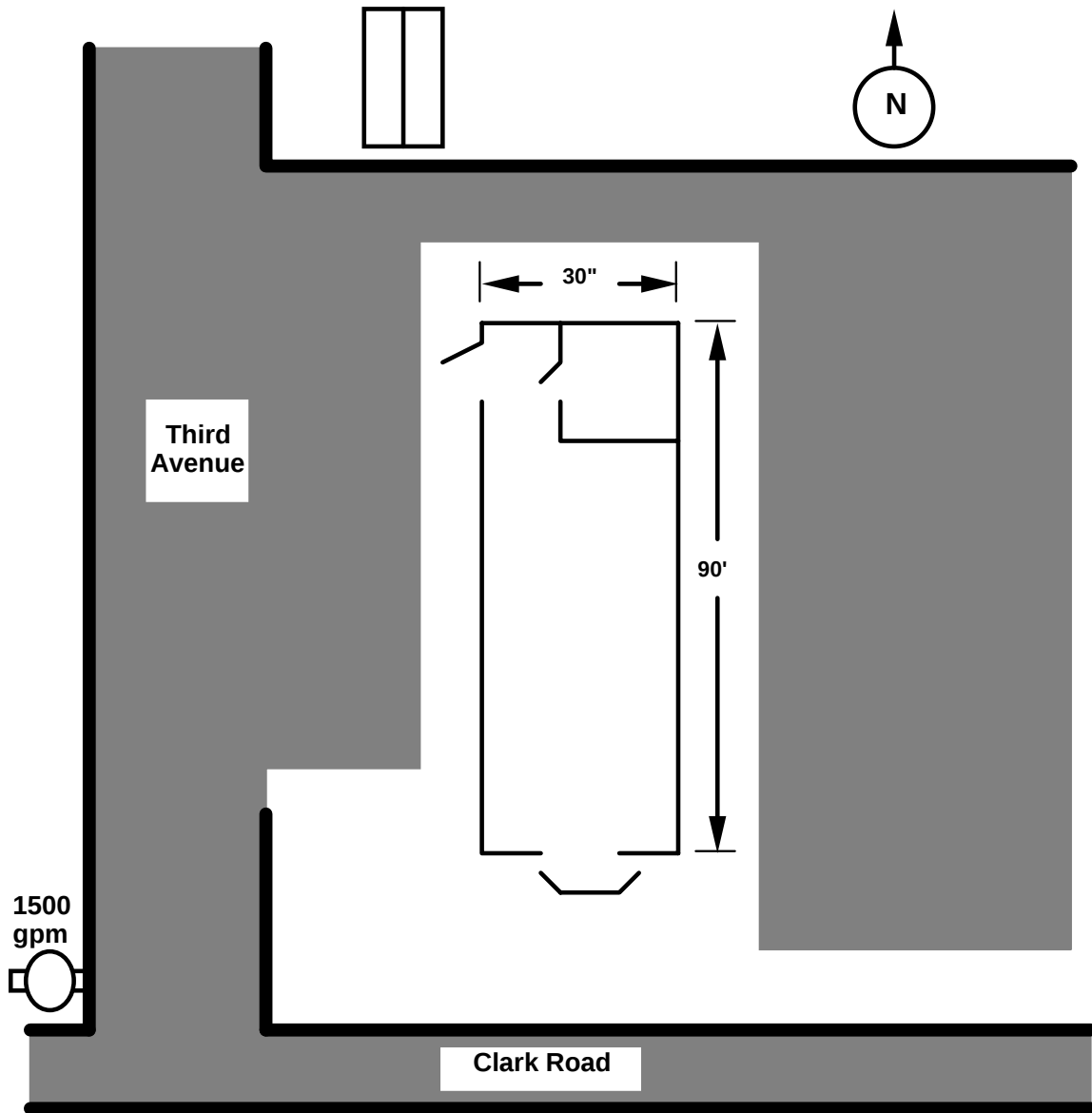
Activity 4.1 (cont'd) Scenario 1 Quick Access Prefire Plan																			
Building Address: <i>475 Vicki Avenue</i>																			
Building Description: <i>20' x 30', 2-story, wood frame</i> Roof Construction: <i>Wood truss, gusset plate assembly</i> Floor Construction: <i>Parallel chord wood truss covered with plywood</i>																			
Occupancy Type: <i>Apartment</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>None more than usual for a dwelling</i>																			
Location of Water Supply: <i>Determined by class</i>		Available Flow: <i>Determined by class</i>																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <td colspan="4">Estimated Fire Flow</td> </tr> <tr> <td>Level of Involvement</td> <td><i>25%</i></td> <td><i>50%</i></td> <td><i>75%</i></td> <td><i>100%</i></td> </tr> <tr> <td>Estimated Fire Flow</td> <td><i>150</i></td> <td><i>300</i></td> <td><i>450</i></td> <td><i>600</i></td> </tr> </table> <i>Fire flow based on 2 floors and 2 exterior exposures</i>						Estimated Fire Flow				Level of Involvement	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>	Estimated Fire Flow	<i>150</i>	<i>300</i>	<i>450</i>	<i>600</i>
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Fire Behavior Prediction: <i>Fast horizontal and vertical spread</i>																			
Predicted Strategies: <i>Rescue, ventilation, confinement, extinguishment</i>																			
Problems Anticipated: <i>Early collapse of floor and roof assemblies</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 4.1 (cont'd)
Scenario 2
Plot Plan/Floor Plan



Activity 4.1 (cont'd) Scenario 2 Quick Access Prefire Plan																			
Building Address: <i>1020 Gene Street</i>																			
Building Description: <i>2, 1-story, ordinary construction; largest fire area 33' x 90' firewall between occupancies</i>																			
Roof Construction: <i>Wooden 2" x 10" rafters, plywood, composition roof covering</i>																			
Floor Construction: <i>Concrete slab</i>																			
Occupancy Type: <i>Retail stores</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>Pesticides, flammable/combustible liquids</i>																			
Location of Water Supply: <i>Determined by class</i>		Available Flow: <i>Determined by class</i>																	
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	Estimated Fire Flow																		
Level of Involvement	25%	50%	75%	100%															
Estimated Fire Flow	375	750	1,125	1,500															
<i>Fire flow of largest fire area--hardware store and 2 exposures</i>																			
Fire Behavior Prediction: <i>Rapid horizontal spread within one occupancy</i>																			
Predicted Strategies: <i>Confinement, ventilation, extinguishment</i>																			
Problems Anticipated: <i>Poor rear access, limited horizontal ventilation</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 4.1 (cont'd)
Scenario 3
Plot Plan/Floor Plan



Activity 4.1 (cont'd)
Scenario 3
Quick Access Prefire Plan

Building Address: *1590 Clark Road*

Building Description: *30' x 90', 1-story, ordinary construction with basement*

Roof Construction: *2" x 10" rafters, plywood, composition covering*

Floor Construction: *2" x 10" rafters, sheathing and hardwood flooring*

Occupancy Type:
Bar and Lounge

Initial Resources Required:
Determined by class

Hazards to Personnel:
None more than usual

Location of Water Supply:
*Corner of Clark Road
 and Third Ave.*

Available Flow:
1,500 gpm

	Estimated Fire Flow			
Level of Involvement	25%	50%	75%	100%
Estimated Fire Flow	225	450	675	900

Fire Behavior Prediction:
Rapid horizontal fire spread

Predicted Strategies:
Confinement, ventilation, extinguishment

Problems Anticipated:
Interference by patrons

Standpipe:
None

Sprinklers:
None

Fire Detection:
None

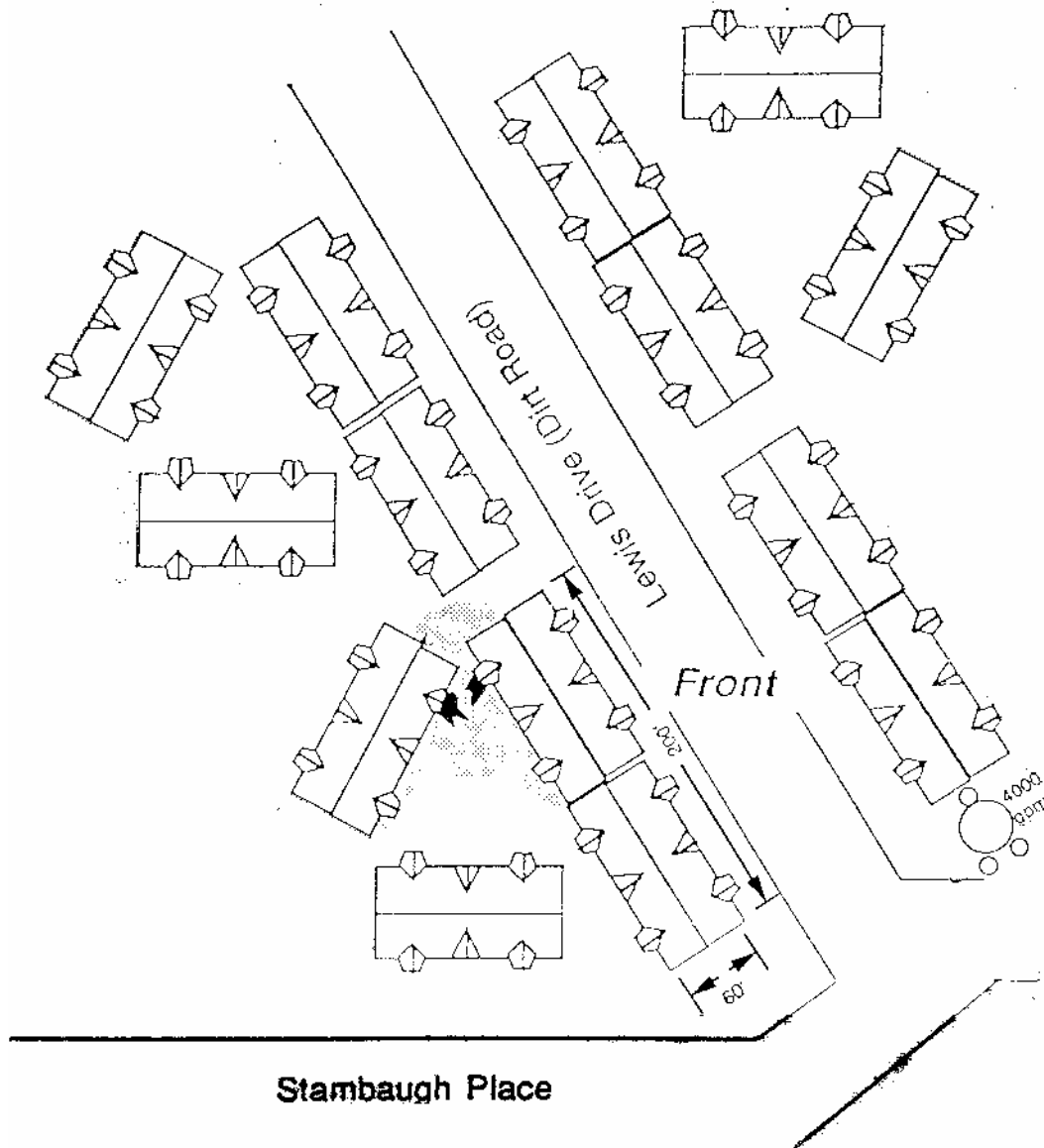
The site plan shows a rectangular building footprint with a central shaded section. The building is oriented with its long side parallel to CLARK TERRACE. The width of the building is indicated as 36'. The distance from the building to CLARK TERRACE is 20'. The building is situated between PARKING to the north and ELLIS WAY to the south. A fire hydrant is located on ELLIS WAY, 800 gpm. The building footprint is divided into eight equal rectangular sections. The central section is shaded gray.

The First Floor plan shows a layout with a central corridor. The rooms are labeled: LR (Living Room), DR (Dining Room), K (Kitchen), BA (Bathroom), and BR (Bedroom). The layout includes a staircase and a set of double doors.

The Second Floor plan shows a layout with a central corridor. The rooms are labeled: BR (Bedroom), BA (Bathroom), and BR (Bedroom). The layout includes a staircase and a set of double doors.

Activity 4.1 (cont'd) Scenario 4 Quick Access Prefire Plan																			
Building Address: <i>600-614 Clark Terrace</i>																			
Building Description: <i>20' x 36', 2-story, wood frame</i> Roof Construction: <i>2" x 4", nailed, wood truss, common attic</i> Floor Construction: <i>1st floor--concrete slab, 2nd floor--platform, 2" x 8" rafters, plywood sheathing</i>																			
Occupancy Type: <i>Townhouse</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>None more than normal for a dwelling</i>																			
Location of Water Supply: <i>Clark Terrace and Ellis Way</i>		Available Flow: <i>800 gpm</i>																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <td colspan="4">Estimated Fire Flow</td> </tr> <tr> <td>Level of Involvement</td> <td><i>25%</i></td> <td><i>50%</i></td> <td><i>75%</i></td> <td><i>100%</i></td> </tr> <tr> <td>Estimated Fire Flow</td> <td><i>100</i></td> <td><i>200</i></td> <td><i>300</i></td> <td><i>420</i></td> </tr> </table> <i>Fire flow based on 1st floor of 1 house with 2 exterior and 1 interior exposures</i>						Estimated Fire Flow				Level of Involvement	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>	Estimated Fire Flow	<i>100</i>	<i>200</i>	<i>300</i>	<i>420</i>
	Estimated Fire Flow																		
Level of Involvement	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>															
Estimated Fire Flow	<i>100</i>	<i>200</i>	<i>300</i>	<i>420</i>															
Fire Behavior Prediction: <i>Rapid horizontal and vertical spread</i>																			
Predicted Strategies: <i>Rescue, exposures, ventilation, confinement, extinguishment</i>																			
Problems Anticipated: <i>Limited access, limited egress, common attic</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 4.1 (cont'd)
Scenario 5
Plot Plan/Floor Plan



Activity 4.1 (cont'd)
Scenario 5
Quick Access Prefire Plan

Building Address: *Lewis Drive and Stambaugh Place*

Building Description: *60' x 200', 3-story, wood frame (under construction)*

Roof Construction: *2" x 4" gusset plate wood truss, plywood sheathing*

Floor Construction: *1st floor--concrete slab, 2nd/3rd floor--parallel chord wood truss, plywood sheathing*

Occupancy Type:
Unoccupied apartments

Initial Resources Required:
Determined by class

Hazards to Personnel:
Radiant heat, early collapse, rapid fire spread--no drywall on walls

Location of Water Supply:
Lewis Drive and Stambaugh Place

Available Flow:
4,000 gpm

	Estimated Fire Flow			
Level of Involvement	5%	10%	25%	100%
Estimated Fire Flow	750	1,500	3,750	15,000

Fire flow on entire open 3-story building with exposure

Fire Behavior Prediction:
Rapid horizontal and vertical spread

Predicted Strategies:
Exposures, confinement, extinguishment

Problems Anticipated:
Limited access, unfinished roads

Standpipe:
None

Sprinklers:
None

Fire Detection:
None

MODULE 5: INTRODUCTION TO THE INCIDENT COMMAND SYSTEM

OBJECTIVES

The students will:

- 1. Define the need for a management system to be used at emergency incidents and demonstrate how ICS can be applied as an effective emergency management system.*
 - 2. Define the five ICS functions, Command Staff positions, and Staging.*
 - 3. Define the role of the Incident Commander (IC) and the importance of the CO as initial IC.*
 - 4. Given a scenario, establish an effective ICS organization to manage the initial phase of the incident.*
-

NOTE-TAKING GUIDE

NEED FOR A MANAGEMENT SYSTEM

Successful organizations are managed in a professional manner.

Elements of an effective incident management system.

ICS as a management system.

HISTORY OF ICS

Originated as a result of major wildland fires in Southern California during the 1970's.

Fireground Command (FGC).

NOTE-TAKING GUIDE

National Fire Academy (NFA) model system.

Each emergency management system based on sound management principles.

DEVELOPMENT OF REGULATIONS AND STANDARDS

Success of ICS has led to its inclusion in a variety of regulations and standards.

Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) require use of ICS for hazardous materials incidents.

NFPA Standard 1500: Fire Department Occupational Safety and Health Program.

NOTE-TAKING GUIDE

NFPA Standard 1561: Fire Department Emergency Management Systems.

USING ICS EFFECTIVELY

Understanding how to use the system.

Think of ICS organization as a toolbox.

Importance of first-in officer as initial IC.

The CO's role when not the IC.

NOTE-TAKING GUIDE

THE FIVE ICS FUNCTIONAL AREAS

Total ICS organization includes five functional sections.

Command.

Operations.

Planning.

Logistics.

Finance/Administration.

NOTE-TAKING GUIDE

Command, Operations, Planning, Logistics, and Finance/Administration comprise the General Staff positions.

COMMAND STAFF POSITIONS

Command Staff positions are designed to provide aid and assistance to help the IC fulfill incident responsibilities.

Command Staff positions:

Safety Officer: Responsible for monitoring and assessing safety hazards or unsafe situations and developing measures for ensuring personnel safety.

Liaison Officer: Responsible for providing the point of contact and coordination for assisting agencies not involved in command functions.

NOTE-TAKING GUIDE

Information Officer: Responsible for the development of accurate and complete information regarding the incident and to serve as the point of contact for the media and other appropriate agencies requiring information direct from the incident scene.

STAGING

Definition: Staging is the location to which resources report until given an assignment.

Increases accountability.

Staging Area Manager: Responsible for managing all activities within the Staging area.

NOTE-TAKING GUIDE

THE INCIDENT COMMANDER'S ROLE

Safe and effective incident operations require that someone be in command.

The CO's responsibility as initial IC.

DIVISIONS AND GROUPS

Establishing Divisions or Groups.

Relationship between Divisions and Groups.

Managing Divisions and Groups.

NOTE-TAKING GUIDE

Responsibilities of Division and Group Supervisors.

SUMMARY

The Incident Command System is a **management** system that uses proven management principles.

It provides the IC with the tools he/she may need if the incident demands and there is a need to maintain span of control.

ICS is a system designed to be used at any type incident and by all responders.

It is suitable for "everyday" use and can expand in a modular fashion to larger incidents.

Company officers **must** understand the system and their role if they are to be effective and make the system work.

NEED FOR A MANAGEMENT SYSTEM

Successful organizations do not happen by chance or blind luck. Success requires dedication and professional management on the part of those responsible for the organization's achievements. Lack of good management can have disastrous results. This is true in any organization whether it be business, military, team sports, or the fire service. Some examples are:

Business success: Any Japanese car maker
Notable business failure: Edsel

Military success: Operation Desert Storm
Notable military failure: Iraqi Army/Navy/Air Force

Sports success: Vince Lombardi as coach of the Green Bay Packers
Notable sports failure: 1961 New York Mets

Firefighting success: Your last fire
Notable firefighting failure: First-in company to Mrs. O'Leary's cow, Chicago 1871.

Successful incident management is not totally unlike a team sport such as football. In football the coach puts together the game plan the players are to follow rather than each player deciding on his own where to run and whom to block. Managing emergencies requires that an IC determine the plan that others will follow. Not all football players have the same skills. Running backs, linemen, and wide receivers each have different skills. The same can be said for those who function at an emergency. Law enforcement, fire, EMS, public works, and social agencies all may be required at the same incident and each needs to concentrate on its area of expertise if it is to be effective. If a team or a fire department is to perform to its highest level, it must be well trained, well conditioned, and well managed.

The consequences of a football team not having good leadership and not playing together in a coordinated manner may result in losing a game. Should an emergency incident suffer from lack of leadership and coordination of efforts, the results could be loss of life or injury to civilians and firefighters, additional damage to the property, and failure of those responsible to provide their communities with the level of service they deserve and expect.

Unlike other organizations, emergency response agencies must fulfill their responsibilities under conditions that are hazardous and often confusing.

While other organizations can take the time to form a committee to study a problem, decisions at the emergency scene must be made based on limited information and under severe time restrictions. Just because an emergency exists does not relieve those responsible for managing the emergency from doing so in a professional manner. Because of the risks and dangers involved, the need for effective incident management is greater than in other organizations.

Elements of an Effective Incident Management System (IMS)

For an IMS to be effective, it should share some common elements. Those elements include:

1. Suitability for use regardless of jurisdiction or agency involved.
2. Ability of the organizational structure to adapt to an incident regardless of type of complexity.
3. Applicability and acceptability to users throughout the community and region.
4. Readily adaptable to new technology such as computers or improved communication capabilities.
5. Expandable in a logical manner from initial response to a major emergency so as not to have one plan for "everyday" use and a separate plan for "the big one."
6. Basic common elements in organization, terminology, and procedures.
7. Cause the least possible disruption to the existing system during implementation.
8. Fulfill the above requirements effectively and simply to ensure low operation and maintenance costs.

ICS as a Management System

ICS meets the requirements of an effective incident management system in a manner that makes its use practical to all emergency response agencies. In doing so ICS:

1. Provides for manageable span of control.

Definition: Span of control is the number of subordinates one supervisor can manage effectively.

A basic management axiom states that for managers to be effective they must limit the number of subordinates they supervise to a manageable level. Experience has shown that a workable span of control is somewhere between three and seven, with an optimum of five. ICS provides an organizational structure that allows managers to delegate responsibility when they are approaching or have reached the limits of their span of control.

2. Ensures unity of command so that all personnel are managed and accounted for.

Unity of command means that each individual participating in the operation reports to only one supervisor. This eliminates the potential for individuals to receive conflicting orders from a variety of supervisors, thus increasing accountability, preventing freelancing, improving the flow of information, helping with the coordination of operational efforts, and enhancing firefighter safety.

3. Provides a standard set of terms for communicating designation of resources and facilities.

ICS uses plain English rather than 10-codes to communicate. Called clear text, it uses a standard set of words and phrases in lieu of the sometimes confusing and conflicting 10-codes. ICS also offers a set of standard resource designators to identify the range of resources and facilities that may be needed at an incident.

Examples of clear text and standard resource designators can be found in the materials of the ICS classes offered by the National Fire Academy, the National Interagency Incident Management System (NIIMS), manuals offered by Fire Service Publications at Oklahoma State University, as well as other sources.

4. Lines of authority provide for lines of communication.

Based on the simple principle that communications follow the same lines as the organization, the amount of communication is minimized and also limits the number of individuals needing to talk to each other. This improved flow of communications prevents messages from being missed by those for whom they should be intended.

5. Has all-risk design.

ICS can be adapted to any type of emergency whether it be fire, mass casualty, hostage situation, natural disaster, or any other type of emergency. Because it can be used by all agencies involved in the incident, coordination and communications are improved and the amount of confusion reduced.

6. Is suitable for "everyday" use.

Many departments, agencies, and jurisdictions have disaster plans that are used only when a major incident occurs. These plans are often out of date, inappropriate to the emergency, and not understood or trained on by those not involved with drawing up the plan.

ICS can be used every day at every incident and eliminates the need to have different management systems for different sizes or types of emergencies.

7. Provides for safety of personnel.

Span of control and unity of command assure that personnel are accounted for and their efforts are coordinated in a manner that provides for firefighter safety. Improved communications and reduced confusion also facilitate protecting their safety.

8. Provides for modular expansion.

As the incident grows or additional resources become available, the ICS organization can expand in a modular fashion to meet the demands of the emergency and still allow for maintaining effective span of control.

9. Improved resource utilization.

With a clear organizational structure, each resource can concentrate on its assignment and eliminate duplication of effort. This maximizes the effectiveness of each resource.

HISTORY OF THE INCIDENT COMMAND SYSTEM

In the early 1970's, Southern California experienced several devastating wildland fires. The overall cost and loss associated with these fires totaled \$18 million per day. This multijurisdictional disaster was the impetus for

the development of an improved interagency incident management system known as the Incident Command System (ICS). ICS is one of the beneficial results of a federally funded project called FIREScope that was convened after these fires, and whose charter was to examine various aspects of interagency response to incidents.

FIREScope derives its name from: **F**ire **R**ESources of **C**alifornia **O**rganized for **P**otential **E**mergencies. The FIREScope ICS is primarily a command and control system delineating job responsibilities and organizational structure for the purpose of managing day-to-day fire and rescue operations. It also is flexible enough to manage catastrophic incidents involving thousands of emergency response and management personnel.

The National Inter-Agency Incident Management System (NIIMS) is another system using ICS that was developed by the wildland community in order to provide a common system for wildland fire protection agencies at the local, State, and Federal levels. The NIIMS organization includes the Bureau of Land Management, the Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, the U.S. Forest Service, representatives of State Foresters, and the National Park Service. NIIMS consists of five major subsystems that collectively provide a total systems approach to risk management:

- The ICS which includes operating requirements, eight interactive components, and procedures for organizing and operating an onscene management structure.
- Training that is standardized and supports the effective operations of NIIMS.
- A qualification and certification system that provides personnel across the Nation with standard training, experience, and physical requirements to fill specific positions in the ICS.
- Publications management that includes development, publication, and distribution of NIIMS materials.
- Supporting technologies such as orthophoto mapping, infrared photography, and a multiagency coordination system that supports NIIMS operations.

Since the development of the ICS, the fire service has experienced several challenges in understanding its application. As a result, inconsistencies in the system began to develop; other hybrid systems came into existence, further distancing a common approach to incident command. A single

incident management system is critical for effective command and control of major incidents. At these incidents, a single department may interface with other agencies on the local, State, and Federal level. In order to reduce the inherent confusion that may be associated with larger scale incidents, using a common command system is a must.

Recognizing the challenges that were occurring in the fire service in applying a common approach to incident command, the National Fire Service Incident Management System Consortium was created. Developed in 1990, its purpose is to evaluate an approach to developing a single Command system. The Consortium consists of many individual fire service leaders, representatives of most major fire service organizations, and representatives of Federal agencies including FIRESCOPE. One of the significant outcomes of the work done by the Consortium was the identification of the need to develop operational protocols within ICS, so that fire and rescue personnel would be able to apply the ICS as one common system. In 1993, as a result of this, the IMS Consortium completed its first document: *Model Procedures Guide for Structural Firefighting*. FIRESCOPE adopted this in principle as an application to the Model FIRESCOPE ICS. The basic premise is that the organizational structure found in the FIRESCOPE ICS now is enhanced with operational protocols that allow the Nation's fire and rescue personnel to apply the ICS effectively regardless of what area in the country they are assigned. The National Fire Academy (NFA), having adopted the FIRESCOPE ICS in 1980, has incorporated this material in its training curriculum and will continue to reach the thousands of fire service personnel with one common incident command and control system.

It is important to note that the FIRESCOPE Model ICS has had other applications or modules similar to the structural firefighting applications that have been in place for some time. These create a framework for other activities to operate in and further enhance the use of ICS. As an example, there are the Multi-Casualty, Hazardous Material, and the Urban Search and Rescue applications.

The Federal Emergency Management Agency (FEMA) formally adopted FIRESCOPE ICS as the incident management system for any Federal response required by the agency. Since then, several other Federal agencies have adopted FIRESCOPE ICS.

DEVELOPMENT OF REGULATIONS AND STANDARDS

The success and acceptance of ICS nationally have led to its inclusion in a number of regulations and standards. The primary reason for this is ICS's ability to be adopted and utilized by jurisdictions and agencies needing

one common emergency management system capable of dealing with all types of emergencies and suitable for use when multiple jurisdictions or agencies are involved.

Occupational Safety and Health Administration (OSHA)

As a result of the Superfund Amendments and Reauthorization Act (SARA) of 1986, OSHA has implemented regulations that require departments in states that have adopted OSHA standards to use an ICS at all hazardous materials incidents.

Environmental Protection Agency (EPA)

For those departments in states that do not require following OSHA standards, the EPA has adopted regulations that impose the same requirements in non-OSHA states.

The regulation states, "The incident command system shall be established by those employers ("employers" includes fire departments) for the incidents that will be under their control and shall be interfaced with the other organizations or agencies who may respond to such an incident."

NFPA 1500

The NFPA Standard 1500: Fire Department Occupational Health and Safety Program states that all departments shall establish written procedures for ICS, and that all departmental members shall be trained in and familiar with the system. It fixes responsibility for firefighter safety at all supervisory levels at an incident and requires a method of tracking and accounting for personnel. It places strong emphasis on scene safety and the role of the incident safety officer.

NFPA 1561

The NFPA Standard 1561: Fire Department Emergency Management Systems provides broad guidelines for what should be included in any emergency management system; the appendix gives examples of successful systems currently in use. It does not provide a new emergency management system or impose rigid rules for adoption.

USING ICS EFFECTIVELY

ICS offers ample opportunity to delegate responsibility and create subordinate positions to maintain span of control. Emergency managers can develop an extensive incident organization, but the cold hard fact is that organizational charts do not put out fires. That is done through the efforts of hard-working, well-managed firefighters. The positions within ICS are there to be utilized **if** they are needed and will assist in better organizing and managing the incident.

ICS can be looked at as being similar to a toolbox. Just as a toolbox may be loaded with different tools, ICS has a number of positions in its arsenal. If you were to change the spark plugs in your car, you would not need to use every tool in the box but would only use those necessary to do the job. The remainder of the tools would remain in the box until there was a job for which they were needed. The same is true of ICS. Only those positions that are needed to help get the job done should be implemented. The others remain available for an incident in which they may be required.

Just as failure to delegate can cause a manager to exceed a reasonable span of control and produce disastrous results, so can falling into the trap of a manager creating a magnificent organizational chart with a variety of subordinate positions and having no one left to fight the fire. Understanding the system will let you know what positions can best aid in managing the incident and how they can be used to your best advantage.

Although the first-arriving officer may act as the initial Incident Commander until command can be passed, there is a strong likelihood he/she may be reassigned to another subordinate position in the ICS organization. Other officers who are not first-in may be assigned to a subordinate position upon their arrival. Whether the CO must function as the initial IC or is delegated to function in another ICS position, it is imperative that COs understand the system. Failure to do so can jeopardize firefighter safety and lead to a breakdown in coordination.

THE FIVE ICS FUNCTIONAL AREAS

ICS uses the five major components that make up most successful organizations. ICS is broken down into the functional areas of:

1. Command.
2. Operations.
3. Planning.

4. Logistics.
5. Finance/Administration.

Functions of Command

The functions of Command include

- assume and announce Command, and establish an effective operating position (Command Post (CP));
- rapidly evaluate the situation (sizeup); and
- initiate, maintain, and control the communications process.

Identify the overall strategy, develop an Incident Action Plan (IAP), and assign companies and personnel consistent with plans and Standard Operating Procedures (SOP's).

- develop an effective incident command organization;
- provide tactical objectives;
- review, evaluate, and revise (as needed) the IAP;
- provide for the continuity, transfer, and termination of Command; and
- provide for safety and personnel accountability.

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

Staffing Operations

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

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

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

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

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

Planning

The **Planning** function is to collect and evaluate information that is needed for preparation of the action plan. Planning forecasts the probable course of events the incident may take and prepares alternative strategies for changes in or modifications to the action plan.

Logistics

Logistics can be described as filling the "Supply Sergeant" role for the incident. Logistics provides services and supplies in support of the tactical operations. Included in Logistics' responsibilities are providing for facilities, transportation, supplies, equipment maintenance and fueling, and feeding and medical services for response personnel.

Responder Rehabilitation

Responder rehab should be considered by the Incident Commander (IC) during the initial planning stages of an emergency response. However, the climatic or environmental conditions of the emergency scene should not be the sole justification for establishing responder rehab. Any activity/incident that is large in size, long in duration, and/or labor intensive will deplete the energy and strength of personnel rapidly, and therefore merits consideration for responder rehab.

A critical factor in the prevention of heat injury is the maintenance of water and electrolytes. Water must be replaced during exercise periods and at emergency incidents. During heat stress, the member should consume at least 1 quart of water per hour. The rehydration solution

should be a 50/50 mixture of water and a commercially prepared activity beverage, administered at about 40°F (4.4°C). Alcohol, caffeine, and carbonated beverages should be avoided, as they interfere with the body's water conservation mechanisms.

Food should be provided at the scene of an extended incident of 3 or more hours' duration. A cup of stew, soup, or broth is highly recommended because it is digested much faster than sandwiches and fast food products. Fatty and/or salty foods should be avoided.

The "two air bottle rule," or 45 minutes of work time, is recommended as an acceptable level prior to mandatory rehabilitation. Members shall rehydrate (at least 8 ounces) while self-contained breathing apparatus (SCBA) cylinders are being changed. Firefighters, having worked for two full 30-minute-rated bottles, or 45 minutes, shall be placed immediately in responder rehab for rest and evaluation. Rest shall not be less than 10 minutes and may exceed an hour as determined by the responder rehab manager. Crews released from Rehab shall be available in Staging to ensure that fatigued members are not required to return to duty before they are rested, evaluated, and released by the responder rehab manager.

Members in the rehab area should maintain a high level of hydration. Members should not be moved from a hot environment directly into an air-conditioned area, because the body's cooling system can shut down in response to the external cooling.

Emergency Medical Services (EMS) should be provided and staffed by the most highly trained and qualified EMS personnel on the scene (at a minimum of basic life support (BLS) level). The heart rate should be measured for 30 seconds as early as possible in the rest period. If the member's heart rate exceeds 110 beats per minute, an oral temperature should be taken. If the member's temperature exceeds 100.6°F (38°C), he/she should not be permitted to wear protective equipment. If it is below 100.6°F, and the heart rate remains above 110 beats per minute, **rehabilitation time should be increased.** All medical evaluations shall be recorded on standard forms along with the member's name and complaints; they must be signed, dated, and timed by the responder rehab manager or his/her designee.

Members assigned to responder rehab shall enter and exit as a crew. The crew designation, number of crew members, and the times of entry and exit from the responder rehab area shall be documented on the company's check-in/checkout sheet. Crews shall not leave the responder rehab area until authorized by the responder rehab manager.

HEAT STRESS INDEX

	Relative Humidity								
	10%	20%	30%	40%	50%	60%	70%	80%	90%
Temperature °F	104	98	104	110	102	132			
	102	97	101	108	117	125			
	100	95	99	105	110	120	132		
	98	93	97	101	106	110	125		
	96	91	95	98	104	108	120	128	
	94	89	93	95	100	105	111	122	
	92	87	90	92	96	100	106	115	122
	90	85	88	90	92	96	100	106	114
	88	82	86	87	89	93	95	100	106
	86	80	84	85	87	90	92	96	100
	84	78	81	83	85	86	89	91	95
	82	77	79	80	81	84	86	89	91
	80	75	77	78	79	81	83	85	86
	78	72	75	77	78	79	80	81	83
	76	70	72	75	76	77	77	77	78
	74	68	70	73	74	75	75	75	76

NOTE: Add 10°F when protective clothing is worn, and all 10°F when in direct sunlight.

Humiture °F	Danger Category	Injury Threat
Below 60°	None	Little or no danger under normal circumstances.
80° to 90°	Caution	Fatigue possible if exposure is prolonged and there is physical activity.
90° to 105°	Extreme Caution	Heat cramps and heat exhaustion possible if exposure is prolonged and there is physical activity
105° to 130°	Danger	Heat cramps or exhaustion likely, heat stroke possible if exposure is prolonged and there is physical activity.
Above 130°	Extreme Danger	Heat stroke imminent!

WIND CHILL INDEX

		Temperature °F												
Wind Speed (MPH)		45	40	35	30	25	20	15	10	5	0	-5	-10	-15
	5	43	37	32	27	22	16	11	6	0	-5	-10	-15	-21
	10	34	28	22	16	10	3	-3	-9	-15	-22	-27	-34	-40
	15	29	23	16	9	2	-5	-11	-18	-25	-31	-38	-45	-51
	20	26	19	12	4	-3	-10	-17	-24	-31	-39	-46	-53	-60
	25	23	16	8	1	-7	-15	-22	-29	-36	-44	-51	-59	-66
	30	21	13	6	-2	-10	-18	-25	-33	-41	-49	-56	-64	-71
	35	20	12	4	-4	-12	-20	-27	-35	-43	-52	-58	-67	-75
	40	19	11	3	-5	-13	-21	-29	-37	-45	-53	-60	-69	-76
	45	18	10	2	-6	-14	-22	-30	-38	-46	-54	-62	-70	-78

Wind Chill Temperature °F		Danger
A	Above -25°F	Little danger for properly clothed person
B	-25°F/-75°F	Increasing danger, flesh may freeze
C	Below -75°F	Great danger, flesh may freeze in 30 seconds

Finance/Administration

Usually formally implemented during large-scale incidents, **Finance/Administration** is responsible for the required fiscal documentation needed and produced as a result of the emergency. Finance/Administration also provides financial planning and advice to the IC to aid in meeting any fiscal statutory requirements.

The functions of Command, Operations, Planning, Logistics, and Finance/Administration are referred to in ICS as the General Staff positions. When assigned, Operations, Planning, Logistics, and Finance/Administration report directly to Command. More detailed descriptions of the General Staff positions can be found in the NFA ICS classes and the NIMS manuals.

COMMAND STAFF POSITIONS

The Command Staff positions are designed to provide aid and assistance in helping the IC fulfill the responsibilities associated with managing the emergency. They handle key incident activities that enable the IC to concentrate on **managing** the incident. Command Staff are not part of the line organization and do **not** count when determining the number of positions under the IC's span of control.

The Command Staff positions are:

- Safety Officer.
- Liaison Officer.
- Information Officer.

Safety Officer

The **Safety Officer** is responsible for monitoring and assessing safety hazards or unsafe situations and developing measures for ensuring personnel safety. After identifying the hazards, the information is conveyed to the IC, and any necessary adjustments are made to the action plan. The Safety Officer should be appointed when the IC cannot adequately monitor hazards or unsafe conditions due to the size, complexity, or numbers of resources involved in the incident.

The Safety Officer can take **immediate** action to correct an unsafe act or practice or to remove personnel from the threat of imminent danger.

Whenever this is done, the Safety Officer needs to advise the IC and affected supervisors of the action and why it was taken. If there is not a threat of imminent danger, the Safety Officer should follow the normal chain of command to get the corrective action accomplished.

Anyone serving as the incident Safety Officer must have the requisite knowledge of the factors that could affect firefighter safety. If appointed at a structure fire, the Safety Officer needs to have a thorough understanding of fire behavior, building construction, and a clear perception of how the tactical operations are affecting the structure. At a haz mat incident, knowledge of the product(s) involved, how to deal with it/them, and the capabilities of the responders is necessary. Whatever the nature of the emergency may be, anyone given the responsibility of Safety Officer should have the background knowledge and a clear understanding of what dangers the incident can present to personnel.

Liaison Officer

An incident where multiple agencies are involved may require a **Liaison Officer** whose responsibilities are to provide the point of contact and coordination for assisting agencies not involved in the Command function. The Liaison Officer aids in coordinating the efforts of the other agencies and reduces the risk of their operating independently. Thus, each agency can do what it does best and can maximize the effectiveness of available resources.

Each agency should have an Agency Representative with whom the Liaison Officer can work. The Liaison Officer needs to make sure those representing the various agencies have decisionmaking authority. If they must contact someone else to get a decision for their agency, the delays that are caused can have an adverse effect on the incident.

Information Officer

The **Information Officer** is responsible for the development and release of accurate and complete information regarding the incident and to serve as the point of contact for the media and other appropriate agencies requiring information directly from the incident scene.

After getting an incident briefing from the IC, the Information Officer establishes an area for the media away from the Command Post and a safe distance from the incident. There the Information Officer will provide news releases, answer questions the media may have, arrange for tours or

photo opportunities of the incident from safe areas, and arrange for the media to speak with the IC if incident conditions allow.

STAGING

Without having clear procedures to direct them otherwise, some departments end up having all the responding vehicles massed in front of the involved structure. Access for other vehicles is often blocked, and the ability to move equipment to another location can be hampered, if not impossible. To prevent this from occurring, a Staging Area can be designated. **Staging is the location where resources report until given an assignment.** It should be located close enough to the incident that resources can respond immediately if given an assignment.

Companies often request assignments while en route to the incident and at a time when the IC may still be trying to determine the extent of the emergency. Radio traffic is usually at its peak and the IC still is trying to put the action plan together. If pressed for an assignment by incoming units, the IC may make a hasty decision not based on the incident needs, but rather yielding to the pressure to give the companies something to do. By establishing a Staging Area, responding companies have a location where they can report while awaiting an assignment and the IC gains time to determine how those companies can best be utilized.

Staging Increases Accountability

By reporting first to Staging, responders are prevented from taking a look at the conditions at the scene and picking a task that looks like the most fun or one they feel needs to be addressed. Should this "freelancing" be allowed to occur, coordination is lost and firefighter safety is put in jeopardy. The IC no longer has control of the action plan or the resources that are responsible for its implementation.

When resources report to Staging they are logged in and, when they receive their assignment, where they will be operating and who will be supervising them also are recorded. This greatly facilitates knowing where the resources are and what they are doing. This is of particular importance in departments where personnel respond in private vehicles. Volunteers, paid on-call, call-back personnel, or staff personnel often respond in private vehicles and present the additional problem of abandoning their vehicles near the scene and blocking access to emergency apparatus. An additional problem is that these individuals may go directly to the scene and into action without anyone knowing their

whereabouts. Personnel accountability is lost, and the ability to protect the safety of these individuals is greatly reduced.

Staging offers the opportunity to form crews that can be placed into service in an organized manner if the IC needs to provide relief or meet the incident goals.

Similar to the Command Staff positions, in that it serves a support role to Command, Staging does **not** count when determining the IC's span of control.

Staging Area Manager

Staging is under the direction of the Staging Area Manager whose responsibility is to manage all of the activities within the Staging Area. In a number of departments the first-arriving officer in Staging is designated as the Staging Area Manager until relieved or assigned.

The responsibilities of the Staging Area Manager include:

1. Keeping track of all resources coming into and out of the Staging Area.
2. Updating the IC as to the level of resources in Staging.
3. Maintaining a minimum level of resources if one has been determined by the IC.
4. Responding to requests for personnel and equipment at the incident.

If the incident is of a size or complexity such that the IC has appointed an Operations Chief, the Staging Area Manager no longer reports to the IC but works directly for the Operations Chief.

THE INCIDENT COMMANDER'S ROLE

When things are going badly and the flames are getting higher and the building smaller, a question that often comes up is "Who the hell is in charge here?" Too often the answer either is no one or multiple choice. Every incident requires that someone be in command to manage and provide for safe and effective operations. Something we all need to remember--if one of us does not assume command--the incident will.

The IC's role is to establish the strategy and tactics needed to control the incident and implement and manage the action plan that will allow the available resources to be successful. The IC has the ultimate responsibility for success or failure and for protecting the safety of the personnel.

As an incentive to delegating responsibility to maintain span of control, **whatever responsibilities the IC does not delegate, the IC retains.** Without delegating responsibilities and creating subordinate positions, the IC can quickly exceed an effective span of control.

The CO's Responsibility as Initial IC

In the previous modules the emphasis has been on developing and implementing an action plan. The importance of the first-in CO's responsibility to make good decisions upon arrival and with the initial assignments also has been stressed. A review of those responsibilities as the initial IC include:

1. Do a thorough size-up.
2. Identify strategy and select tactics.
3. Develop initial action plan.
4. Implement the action plan.
5. Coordinate incident resources.
6. Modify the action plan as necessary.
7. Call for additional resources if needed.
8. Maintain Command until it can be passed or transferred.
9. Be prepared to fill a subordinate position within the incident organization.

COMMAND OPTIONS

The first-arriving unit or member to assume Command of the incident has several command options, depending on the situation. If a Chief Officer, member, or unit without tactical capabilities (i.e., staff vehicle, no equipment, etc.) initiates Command, the establishment of a Command Post

(CP) should be a top priority. At most incidents, the initial Incident Commander (IC) will be a Company Officer (CO). The following Command options define the CO's direct involvement in tactical activities.

Nothing-Showing Mode: These situations generally require investigation by the initial arriving company while other units remain in a staged mode. The CO should go with the company to investigate while using a portable radio to command the incident.

Fast-Attack Mode: Situations that must be stabilized immediately require the CO's assistance and direct involvement in the attack. In these situations, the CO goes with the crew to provide the appropriate level of supervision. Examples of these situations include

- Offensive fire attacks (especially in marginal situations).
- Critical life safety situations (i.e., rescue) which must be achieved in a compressed timeframe.
- Any incident where the safety and welfare of firefighters are major concerns.
- Obvious working incidents that require further investigation by the CO.

Where fast intervention is critical, using a portable radio will permit the CO's involvement in the attack without neglecting Command responsibilities. The Fast-Attack mode should not last more than a few minutes and will end with one of the following:

- The situation is stabilized.
- The situation is not yet stabilized, and the CO may withdraw to the exterior and establish Command in a fixed location. At some time, the CO must decide whether or not to withdraw the remainder of the crew, based on the crew's capabilities and experience, safety issues, and the ability to communicate with the crew. No crew should remain in a hazardous area without radio communications capabilities.
- The situation is not yet stabilized, and the CO remains inside with the crew in a Combat/Command mode. This option is chosen when the officer can make a difference in the effectiveness of the crew.

- Command is transferred to another officer. When a Chief Officer is assuming Command, the Chief Officer may opt to return the CO to his/her crew, or assign him/her to a subordinate position.

Command Mode: Certain incidents, by virtue of their size, complexity, or potential for rapid expansion, require immediate strong, direct, overall Command. In such cases, the CO initially will assume an exterior, safe, and effective Command position and maintain that position until relieved by another officer. A tactical worksheet shall be initiated and used to assist in managing this type of incident.

If the CO selects the Command mode, the following options are available regarding the assignment of the remaining crew members.

- The CO may "move up" within the company, and place the company into action with the remaining members. One of the crew members will serve as the acting CO and should be provided with a portable radio. The collective and individual capabilities and experience of the crew will regulate this action.
- The CO may assign the crew members to work under the supervision of another CO. In such cases, the officer assuming Command must communicate with the officer of the other company and indicate the assignment of those personnel.
- The CO may elect to assign the crew members to perform staff functions to assist Command.

A CO assuming Command has a choice of modes and degrees of personal involvement in the tactical activities, but continues to be fully responsible for the Command functions. The initiative and judgment of the officer are of great importance. The modes identified are guidelines to assist the officer in planning appropriate actions. The actions initiated should conform with one of the previously mentioned modes of operations.

Transfer/Pass Command

Transfer of command: Command is transferred to improve the quality of the Command organization. The following information outlines a sample transfer of command process. The transfer of command procedures/guidelines must be predetermined by individual agencies for their use.

The fact that a higher ranking person has arrived on the scene does not necessarily mean that he/she is prepared to assume Command of the

incident. The person may or may not have knowledge of previous orders or a grasp of the current situation. Without a thorough briefing of the situation status (SITSTAT), the officer may compromise incident operations.

It is essential that a Standard Operating Guideline (SOG) for the transfer of command to a qualified person be developed and practiced within the organization. It is important to remember that Command is transferred in both directions: up as the incident escalates and down during the demobilization phase.

The best method of transferring Command is through a face-to-face meeting between the initial Incident Commander (IC) and the subsequent IC. In face-to-face conversation, the relieving IC is able to take full advantage of all communication media. Communication is more than just words; the pitch of the voice, facial expressions, hand gestures, and other body language assist greatly in conveying necessary information. The officer being relieved also can read the receiver's body language, helping him/her to see whether or not the message is understood.

The person being relieved of Command should review the tactical worksheet with the officer assuming Command. (A sample tactical worksheet is in the Appendix.) This sheet provides the most effective framework for transfer of command because, properly used, it outlines the location and status of personnel and resources. The person being relieved then should be reassigned to the best advantage of the officer assuming Command. Remember, as the relieving IC, you are at a disadvantage. You probably have not been on the scene long; some actions have taken place prior to your arrival, other actions have yet to take place, and you are in a catch-up mode. The information that you receive and retain is critical to your knowledge of the situation and the success of the next operational phase.

The second best method of transferring Command is by radio. However, because this is only spoken communication, radio transfer often leaves the relieving commander with information gaps and extends the time needed to "catch up" to the incident. Information gaps can lead to poor initial decisions and may affect firefighter safety.

The least desirable is a Command change without an information exchange. Use this method only when the other methods cannot be used. The new commander usually is at such an informational disadvantage that catch-up time is extended significantly.

As stated previously, it is critical that a briefing take place when Command is transferred. Such a briefing should include, as a minimum, the following information:

- Present incident status/conditions (rescue situations, injuries, hazards, etc.)
- An Incident Action Plan (IAP) (strategies and tactics being employed).
- Progress toward achieving incident objectives.
- Safety considerations, concerns, and conduct personnel accountability rollcall.
- Assignment/Deployment of companies and personnel operating on the incident.
- Projection of incident condition and additional resource needs.

Passing command: The initial IC has three options of personal involvement at the incident:

1. IC.
2. Combat--hands on.
3. Tactically involved commander.

Select the IC role when there are sufficient personnel to accomplish the initial high-priority tasks or when the initial officer's involvement will not resolve a critical incident priority. Two examples of the latter are a well-involved structure fire needing numerous hoselines to bring control, and no life hazards present, or a fire in a nursing home where 50 trapped persons may perish. In both of these examples, it is likely that the first-in officer's involvement in tactical operations will not affect the outcome significantly. Will the addition of the officer and a small amount of water extinguish the structure fire? Probably not. How many of the 50 lives can be saved by the addition of one additional person in the combat role? These types of incidents require immediate Command.

Choose the combat role when the first-in officer's involvement will resolve a critical incident priority. For example, a room-and-contents fire in a dwelling that can be extinguished with one hoseline. Only one firefighter is available to enter the structure with the hoseline. In this case, the first-in officer should assist the firefighter in advancing the hoseline into the dwelling and extinguishing the fire. When in the combat role, the first-in officer may pass Command to the officer on the next-arriving unit.

Passing Command is a process that alerts the next-arriving officer to be in the "order-giving" mode rather than the "order-receiving" mode immediately on arrival. This is an important alert. Instead of receiving an assignment and focusing on tasks, the focus changes to developing strategies and tactics, making assignments, coordinating tactical applications, scene safety, and a number of other mentally intensive tasks.

A unit not yet on the scene should be advised that it will assume Command on arrival. This allows the other unit leader time to change roles and get into the "order-giving" mode (a primary reason for passing Command in the first place). The new IC should not assume command until he/she is on the scene and declares so via radio and contacts the first-in officer who passed Command. This prevents a gap in the Command function which may create confusion and interrupt the continuity of Command. It also is recognized by most authorities that one cannot manage an incident until one is on the scene and should, therefore, not be accountable until then.

In addition, Command should be passed only one time (except under extraordinary conditions); otherwise free-enterprise firefighting may result as Command is passed from one unit to the next based on the arrival sequence. It is imperative that this, as well as the other parameters of passing/transfer of command, are stated clearly in a department policy, and that all personnel are familiar with that policy.

Strategic Level, Tactical Level, Task Level

Operational responsibilities of Command include three levels:

- strategic level--determines overall direction of the incident;
- tactical level--assigns operational (tactical) objectives; and
- task level--completes specific tasks assigned to companies.

The strategic level is a function of the Incident Commander (IC). The IC sets the overall plan and strategic priorities.

The tactical level is a function of the Operations Section Chief. Operations selects the tactical objectives and prioritizes the accomplishment of the objectives. When an Operations Chief has not been designated, the IC must perform the tactical-level responsibilities.

When, and if, the Planning Section is established, the strategic and tactical levels of the operation should become part of the information given to the Planning Section Chief. This is vital information for Planning, since the primary function of this section is evaluating the incident and forecasting incident needs. The Planning Section also must develop alternative plans that include strategic- and tactical-level information.

The task level is a responsibility of the Company Officer (CO) and the firefighters who are performing the individual tasks that achieve the tactical objectives.

Span-of-Control

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

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

- Training/Experience level of subordinates--Poorly trained or less experienced personnel require more direct supervision, thereby lessening the number of subordinates one can manage effectively.
- Complexity of the incident--A haz mat incident may require more mental concentration, thereby leaving less time available to supervise personnel.
- Type or timeframe of the incident--The speed of operations may influence span-of-control. A fast-moving incident may require a tighter span-of-control with fewer divisions/groups in place, whereas, in a slower moving operation such as overhaul, the supervisor is less pressed for time for decisionmaking and therefore can manage more personnel/divisions/groups.

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

DIVISIONS AND GROUPS

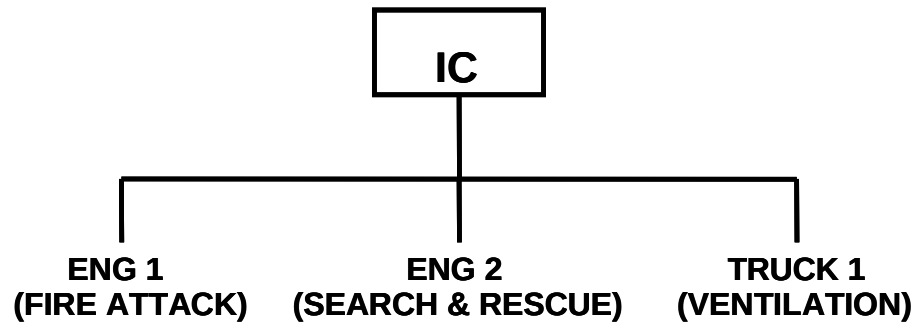
The terms division and group are common designators used by the U.S. fire service to define tactical-level management positions in the Command organization. Divisions represent geographic responsibilities such as Division C (the rear of the facility). Groups represent a functional (job) responsibility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

When initial assignments are ordered to incoming resources, the Incident Commander (IC) should begin assigning Company Officers (CO's) to

appropriate division and group responsibilities. By doing this at all small incidents, the department is preparing itself to manage effectively the resource-intensive incidents that occur much more sporadically.

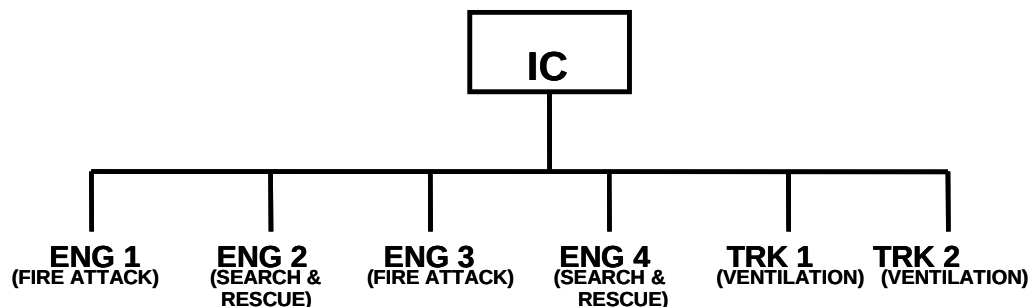
Note: The term sector is used by many departments in the United States. This term is generic and can be used to represent both geographic and functional responsibilities, such as Sector C and Ventilation Sector. The National Fire Academy (NFA), due to the need for consistency and application during activities and simulations and a prior agreement with FIREScope, will use the terms division and group in all its courses.

Most incidents fire departments respond to can be handled by the assignments given to the initial responding units. A typical room and contents fire in a single-family residence could well be organized in the following manner:



This organization allows the IC to maintain span of control and effectively deal with incident management.

Problems arise when the number of companies involved in the tactical operations exceed the IC's span of control. In an expanding emergency the IC can become overloaded:



The IC's span of control is stretched to the limit and needs to create subordinate positions to get back to a manageable level.

Creating Divisions and Groups

The first-line position created by the IC is most often that of a Division and/or Group.

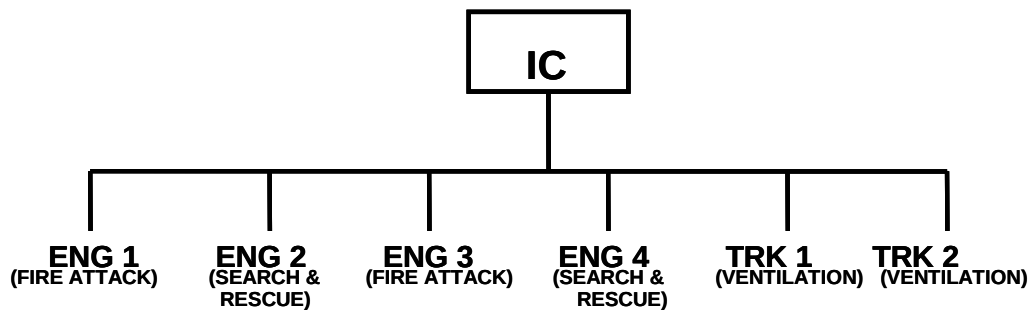
Divisions: An organizational level responsible for operations in a specified geographical area.

Example: A Division may be responsible for operations on a specified floor of a building or a specified side or area of a structure.

Groups: An organizational level responsible for a specified functional assignment.

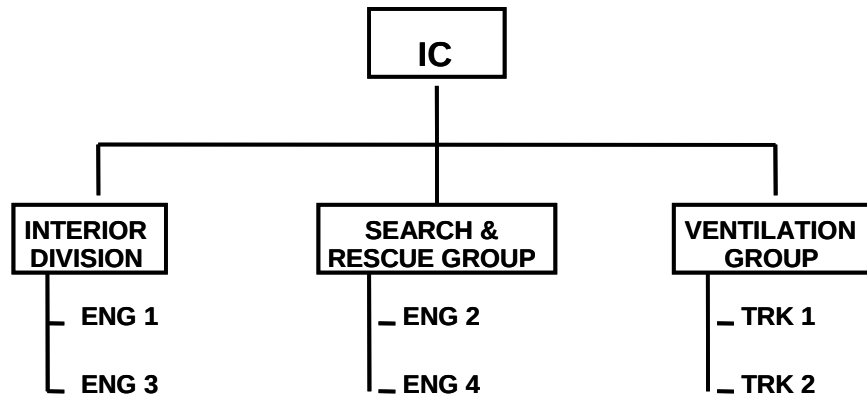
Example: A Group may be responsible for search and rescue or for ventilating in the entire structure.

Combining resources into Divisions or Groups allows the IC to reduce the number of individuals to be supervised and communicated with.



IC Exceeding Manageable Span of Control

Creating Divisions and Groups



IC Back to a Manageable Span of Control

Relationship Between Divisions and Groups

In the ICS organization Divisions and Groups function at the same organizational level. Divisions do **not** work for Groups and Groups do **not** work for Divisions.

Since Groups are responsible for a specified functional assignment in the entire structure, such as ventilation, their responsibilities may cross Divisional boundaries. When this occurs, the Division and Group Supervisors need to coordinate their efforts to assure they are not working at cross purposes and firefighter safety is being protected.

As Divisions are responsible for **all** tactical operations in their designated area not assigned to a Group, the Division Supervisor must be aware that if search and rescue needs to be accomplished, they are responsible for seeing it is performed.

Managing Divisions and Groups

Division and Group Supervisors are the ICS titles assigned to those who manage this key level of the organization. Division and Group Supervisors report directly to the IC unless the incident is of such a scale that an Operations Chief has been appointed. They would then work for and report to the Operations Chief.

The importance of CO's understanding the roles and responsibilities of Division and Group Supervisors cannot be overemphasized. Although the first-arriving officer may serve as the initial IC, there is a strong likelihood they could be reassigned to a Supervisor's role once Command has been passed or transferred. Those CO's who are not first in may well be

assigned to manage a Division or Group upon their arrival. For ICS to work as a management system, CO's **must** understand how important it is to the success of the tactical operations for the Divisions and Groups to be well coordinated and well managed. How well the CO's understand and utilize the system will have a dramatic impact on the chances for success.

When creating a Division or Group there is some important information the IC needs to pass on to the individuals who are assigned the supervisory positions. Three critical pieces of information are:

1. What area(s) they are responsible for and the tactics or objectives they need to accomplish.

By giving them their areas of responsibility and their assigned objectives, the IC has set the boundaries that will aid in coordinating the incident activities, and the objectives will provide a job description the Supervisors will be expected to meet.

2. What resources they are being assigned to meet their objectives.

When given their resources, the Supervisors will know whom they are to communicate with and the level of resources they will have available to complete their assignments.

3. Their radio designation.

Make sure you know who you are talking to.

Responsibilities of Division and Group Supervisors

The first responsibility any supervisor in the ICS organization has is to ensure the safety of his/her assigned personnel. Division and Group Supervisors need to keep track of their assigned resources and know where they are and what they are doing at all times if they are to protect the firefighters under their supervision.

The Supervisors are responsible for implementing their assigned portion of the action plan. Doing so involves conducting an ongoing size-up of how effective the tactical operations are in meeting the assigned objectives and making the necessary adjustments if needed. Part of that size-up should include an evaluation of how long the personnel currently assigned can operate before needing relief. The Supervisor should anticipate this need so that personnel do not start dropping from exhaustion before relief is requested. The risk of death or injury to firefighters is increased dramatically if they are worked beyond their capabilities.

Communications between the IC (or Operations Chief if one has been assigned) needs to be ongoing. The IC needs to receive periodic updates as to how effectively the action plan is working and whether the assigned objectives are being met. Without this information the IC may be operating in an information vacuum and at a loss as to knowing whether the action plan is working or if it needs to be modified. The Supervisor should advise the IC if additional resources are required to meet the assigned objectives or whether resources can be released or reassigned. Division and Group Supervisors also need to communicate with each other to assure their tactical operations are being coordinated and firefighter safety protected.

RAPID INTERVENTION CREW

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

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

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

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

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

The composition and placement of RIC's may be somewhat agency-specific, dictated by individual needs and resource availability. However, it is important that written procedures/guidelines be developed for the use of these crews, especially when they are performing exterior operations in support of interior crews. These written procedures also should include evacuation signals and guidelines for implementing evacuation and relocation of personnel from the area of danger. In addition, for agencies involved in auto/mutual-aid response, it is important to develop consistency among the participating agencies in the use of RIC's.

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

In a hazardous materials operation, the Entry Team Leader must ensure that there is an RIC of at least two personnel in the appropriate level of protection before the primary entry team accesses the hot zone. In a hazardous materials operation, this team is designated as the Backup

Team. The personnel of the Backup Team need to have the same level of required technical competency as the Entry Team. This includes the appropriate level of protection required for the material(s) involved.

While there is some flexibility in procedural issues regarding Rapid Intervention, it is paramount that whenever personnel are operating in positions or performing functions that would subject them to immediate danger in the event of equipment failure or other unexpected sudden event, at least one properly attired RIC must be available to provide assistance or rescue.

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

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

- The IC activates a signal and, by radio, orders all personnel out of the building.
- A Personnel Accountability Report (PAR) is taken, and it is found that one member is missing. That member was last seen working near the collapse area.

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

PROGRESS REPORTS

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

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

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

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

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

Vertical ventilation will be completed in about 5 minutes.
Horizontal ventilation of the fire floor is completed.
Ventilation of the floor above is just beginning.

Progress reports will occur with greater frequency in the early stages of an incident, typically every 5 to 15 minutes, or as major parts of the job are completed. An IC or Operations Section Chief must request progress reports from subordinate personnel on a periodic basis, when these reports are not given by those personnel. Some departments have the dispatch center announce time on location every 15 minutes to assist the IC with time tracking and to act as a mind-jogger for the progress reports. It is important to ensure that if time tracking is done that emergency communication procedures are not overridden by these reports.

In catastrophic events, using large numbers of resources and a large ICS organization, it is critical that the progress of operations be conveyed to all General Staff functions on a timely basis. Branch directors must query

their subordinate group and division supervisors frequently as to the state of their operations. This information must be transmitted to the Operations Section Chief and upward to the IC.

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

INCIDENT SCENE ACCOUNTABILITY

All officers holding positions within the Command organization are responsible for the welfare and accurate accountability of all assigned firefighters. Several fireground accountability systems have been developed by various fire departments around the country. While these may vary in overall design, there are common elements of personnel accountability that fire departments should apply at emergency incidents to fully account for their personnel. These common elements are

- required use;
- hardware--nametags/documentation;
- point-of-entry control of nametags;
- accountability officers;
- benchmarks for required rollcalls throughout operations;
- plans for describing the Command organization response to reports of lost firefighters; and
- use of Rapid Intervention Crews (RIC's).

Whatever the design, the system must be able to locate every firefighter within a small geographic work area within the hazard zone at any moment in time. Further, the system must be able to determine if a firefighter is delayed from an assignment, initiate an immediate rescue effort, if indicated, and fully integrate into the Incident Command System (ICS). **All fire departments are strongly encouraged to develop and implement a workable accountability system for their department.** The final product should be compatible with metro-area or regional accountability system.

SUMMARY

The Incident Command System is a **management** system that uses proven management principles. It has been proven effective by agencies and jurisdictions across the country as a system that can be used by all responders to any type of emergency. It provides the "tools" an IC needs

to be an effective manager and to protect personnel safety. Not only is ICS an emergency management system to be used at a major incident, but also one that is suitable for "everyday" use, which makes it even more valuable when you have "the big one."

The key to any system is how well those who are expected to use it understand it and how they can best employ it to their advantage. For ICS to be effective in your department and in your jurisdiction, **you** as the CO or prospective CO need to know how you can fulfill your responsibilities as a key player in the ICS organization.

Activity 5.1

Application of the ICS

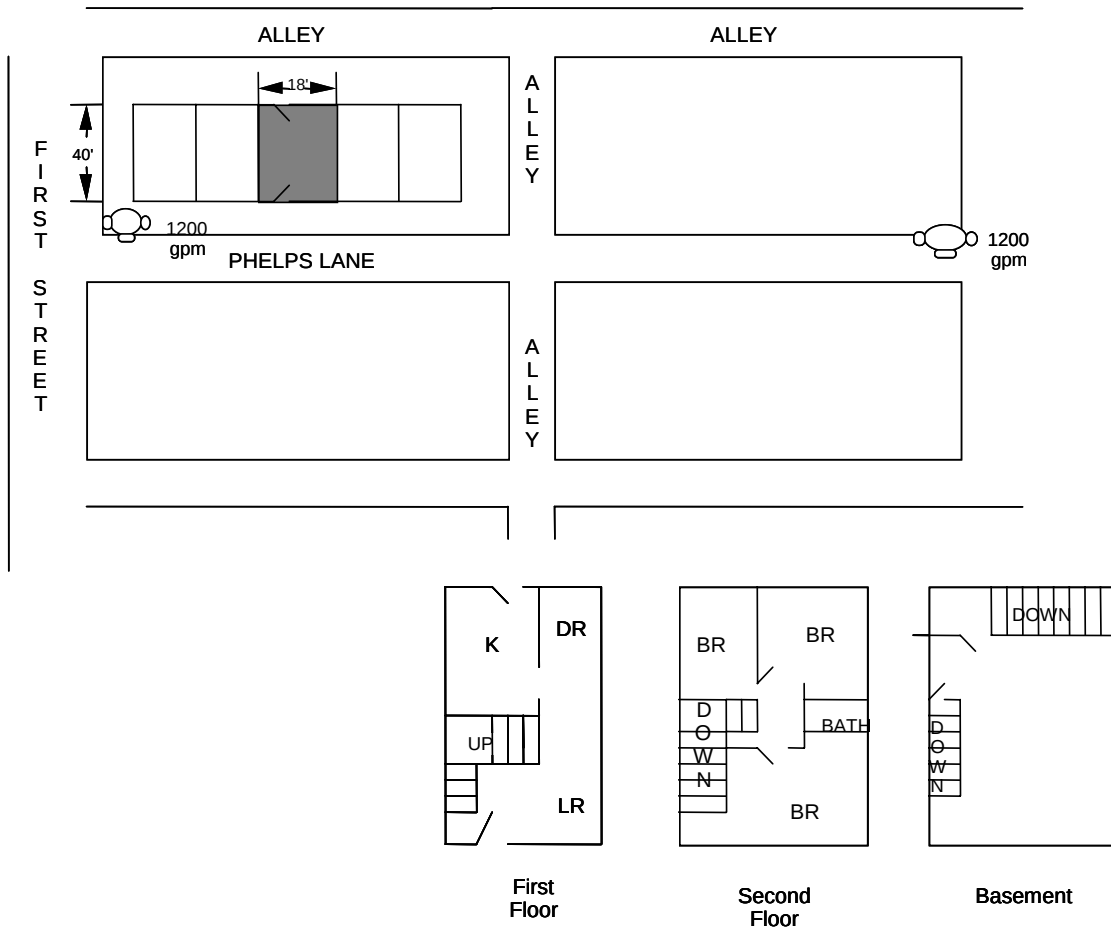
Purpose

The purpose of this activity is to apply ICS to a scenario for which you already have performed size-up, identified strategy and tactics, determined unit assignments, and developed an ICS organization appropriate to the incident and response level.

Directions

1. Refer to the easel pad sheets you have used in the previous modules to identify problems, develop your strategy and tactics, and determine assignments for your assigned scenario. Based on the problems you have identified and the action plan you developed, list on a separate easel pad sheet the ICS organization you would use to manage the incident.
2. Make sure your organization addresses the strategy and tactics you developed, span of control, unity of command, and firefighter safety.
3. If you have determined that additional resources are needed to handle the incident, identify what additional resources you would request and how you anticipate they would fit into your organization once they arrive at the scene.
4. If Divisions and/or Groups are created, make sure they are used properly as described in this module.
5. Select a spokesperson to act as IC and give the group's report.
6. The flames are spreading and you have five minutes to put your organization together. Each group will have five minutes to give its report.

Activity 5.1 (cont'd) Example Scenario Plot Plan/Floor Plan



Activity 5.1 (cont'd)
Example Scenario
Quick Access Prefire Plan

Building Address: *100-108 Phelps Lane*

Building Description: *40' x 18', 2-story, ordinary (masonry wood-joist), common attic*

Roof Construction: *Ridge pole and rafter, 1" x 6" sheathing*

Floor Construction: *Beam and rafter, sheathing, hardwood floor*

Occupancy Type:

Townhouse

Initial Resources Required:

2E, 1T, 1C 13 personnel

Hazards to Personnel:

None out of ordinary

Location of Water Supply:

Phelps Lane & 1st Street

Available Flow:

1,200 gpm

Estimated Fire Flow				
Level of Involvement	25%	50%	75%	100%
Estimated Fire Flow	100	200	300	420

Fire flow based on 1st floor of home with 2 exterior and 1 interior exposures

Fire Behavior Prediction:

Rapid horizontal and vertical spread

Predicted Strategies:

Rescue, ventilation, exposures, confinement, extinguishment

Problems Anticipated:

No more than usual for a dwelling

Standpipe:

None

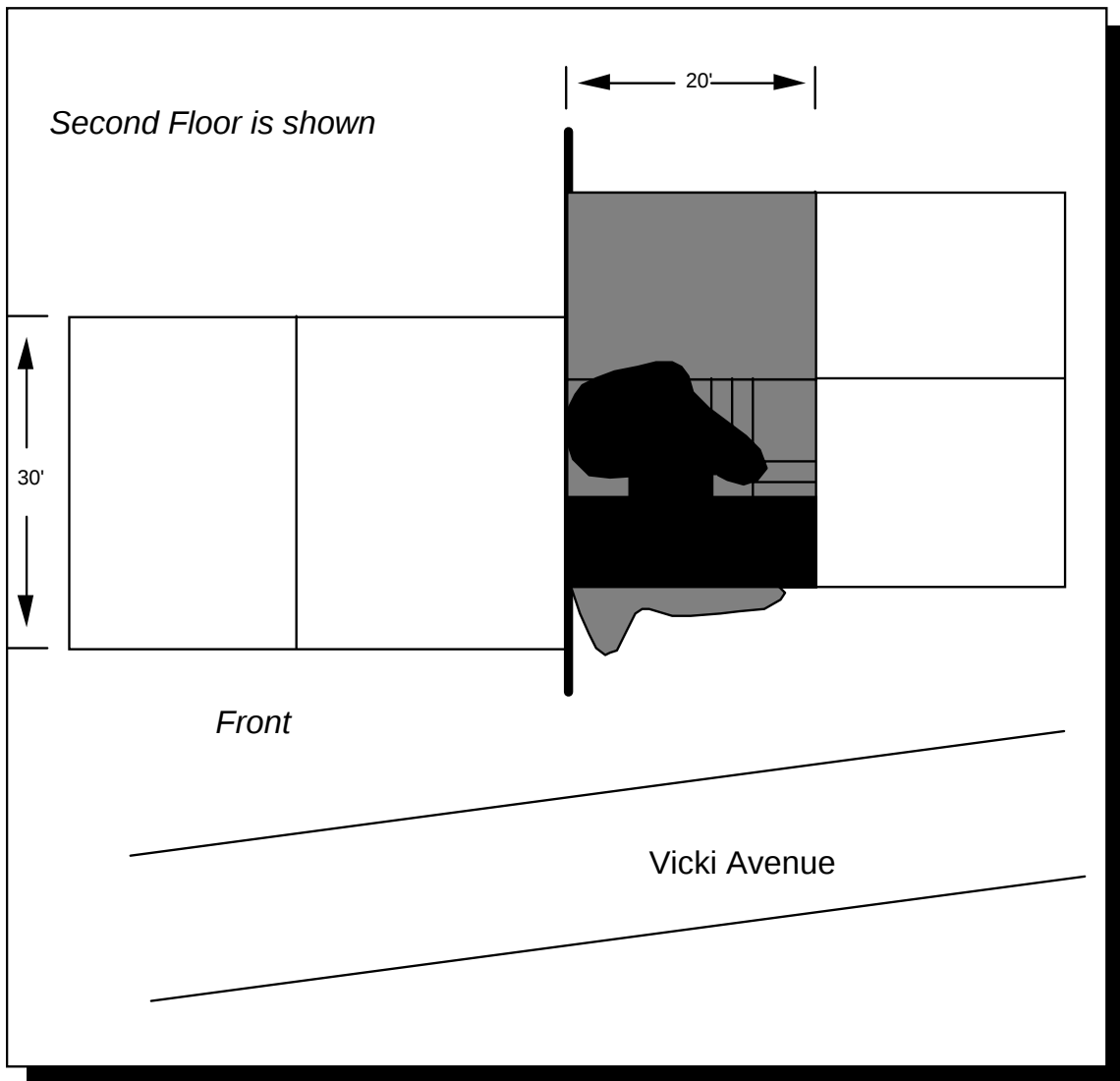
Sprinklers:

None

Fire Detection:

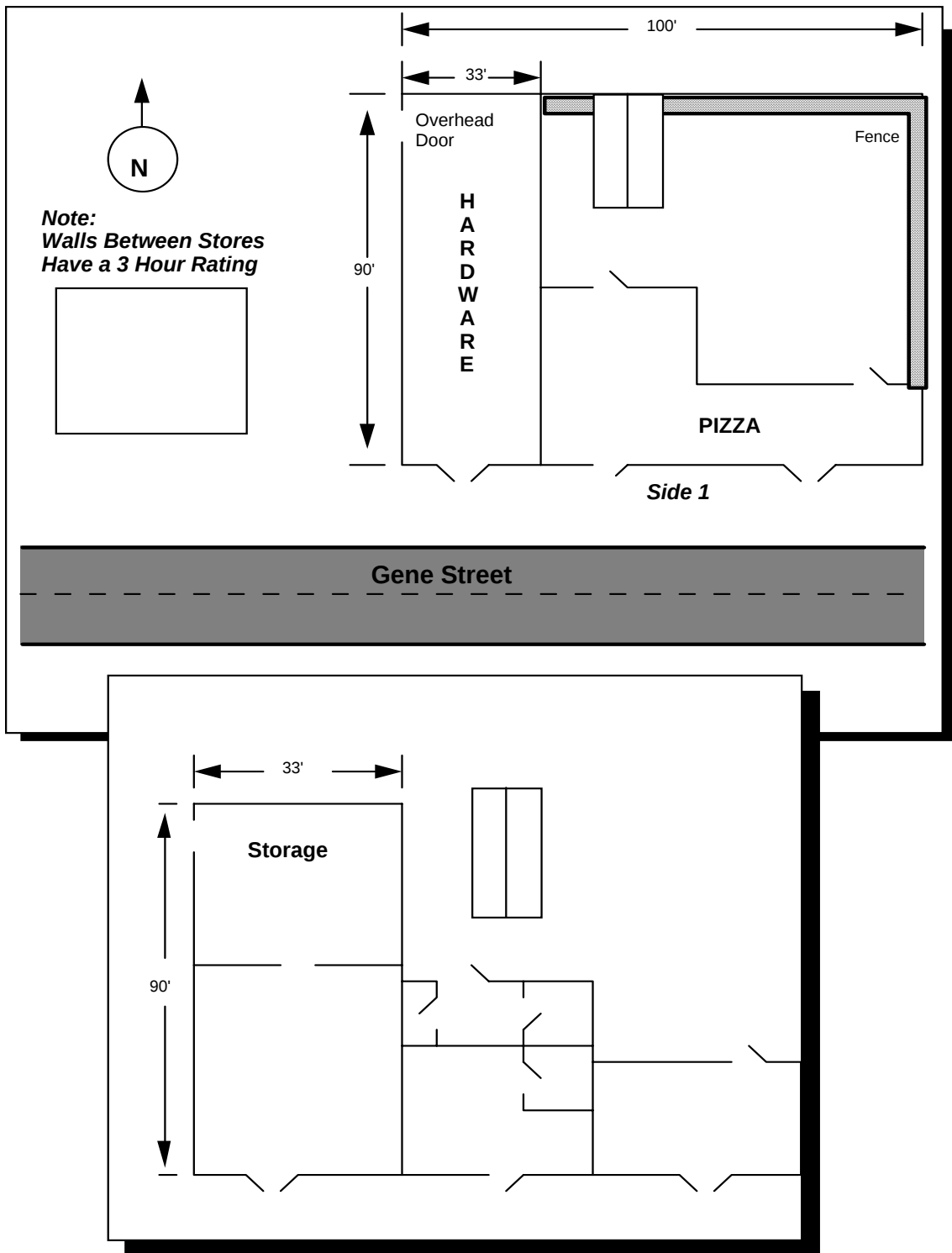
None

Activity 5.1 (cont'd)
Plot Plan/Floor Plan
Scenario 1



Activity 5.1 (cont'd) Scenario 1 Quick Access Prefire Plan																			
Building Address: <i>475 Vicki Avenue</i>																			
Building Description: <i>20' x 30', 2-story, wood frame</i> Roof Construction: <i>Wood truss, gusset plate assembly</i> Floor Construction: <i>Parallel chord wood truss covered with plywood</i>																			
Occupancy Type: <i>Apartment</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>None more than usual for a dwelling</i>																			
Location of Water Supply: <i>Determined by class</i>		Available Flow: <i>Determined by class</i>																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 30%;"></td> <td colspan="4">Estimated Fire Flow</td> </tr> <tr> <td>Level of Involvement</td> <td>25%</td> <td>50%</td> <td>75%</td> <td>100%</td> </tr> <tr> <td>Estimated Fire Flow</td> <td>150</td> <td>300</td> <td>450</td> <td>600</td> </tr> </table>						Estimated Fire Flow				Level of Involvement	25%	50%	75%	100%	Estimated Fire Flow	150	300	450	600
	Estimated Fire Flow																		
Level of Involvement	25%	50%	75%	100%															
Estimated Fire Flow	150	300	450	600															
<i>Fire flow based on 2 floors and 2 exterior exposures</i>																			
Fire Behavior Prediction: <i>Fast horizontal and vertical spread</i>																			
Predicted Strategies: <i>Rescue, ventilation, confinement, extinguishment</i>																			
Problems Anticipated: <i>Early collapse of floor and roof assemblies</i>																			
Standpipe: <i>None</i>	Sprinklers: <i>None</i>		Fire Detection: <i>None</i>																

Activity 5.1 (cont'd)
Scenario 2
Plot Plan/Floor Plan



Activity 5.1 (cont'd)
Scenario 2
Quick Access Prefire Plan

Building Address: *1020 Gene Street*

Building Description: *2, 1-story, ordinary construction; largest fire area
 33' x 90' firewall between occupancies*

Roof Construction: *Wooden 2" x 10" rafters, plywood, composition roof covering*

Floor Construction: *Concrete slab*

Occupancy Type:
Retail stores

Initial Resources Required:
Determined by class

Hazards to Personnel:
Pesticides, flammable/combustible liquids

Location of Water Supply:
Determined by class

Available Flow:
Determined by class

	Estimated Fire Flow			
Level of Involvement	25%	50%	75%	100%
Estimated Fire Flow	375	750	1125	1500

Fire flow of largest fire area--hardware store and 2 exposures

Fire Behavior Prediction:
Rapid horizontal spread within one occupancy

Predicted Strategies:
Confinement, ventilation, extinguishment

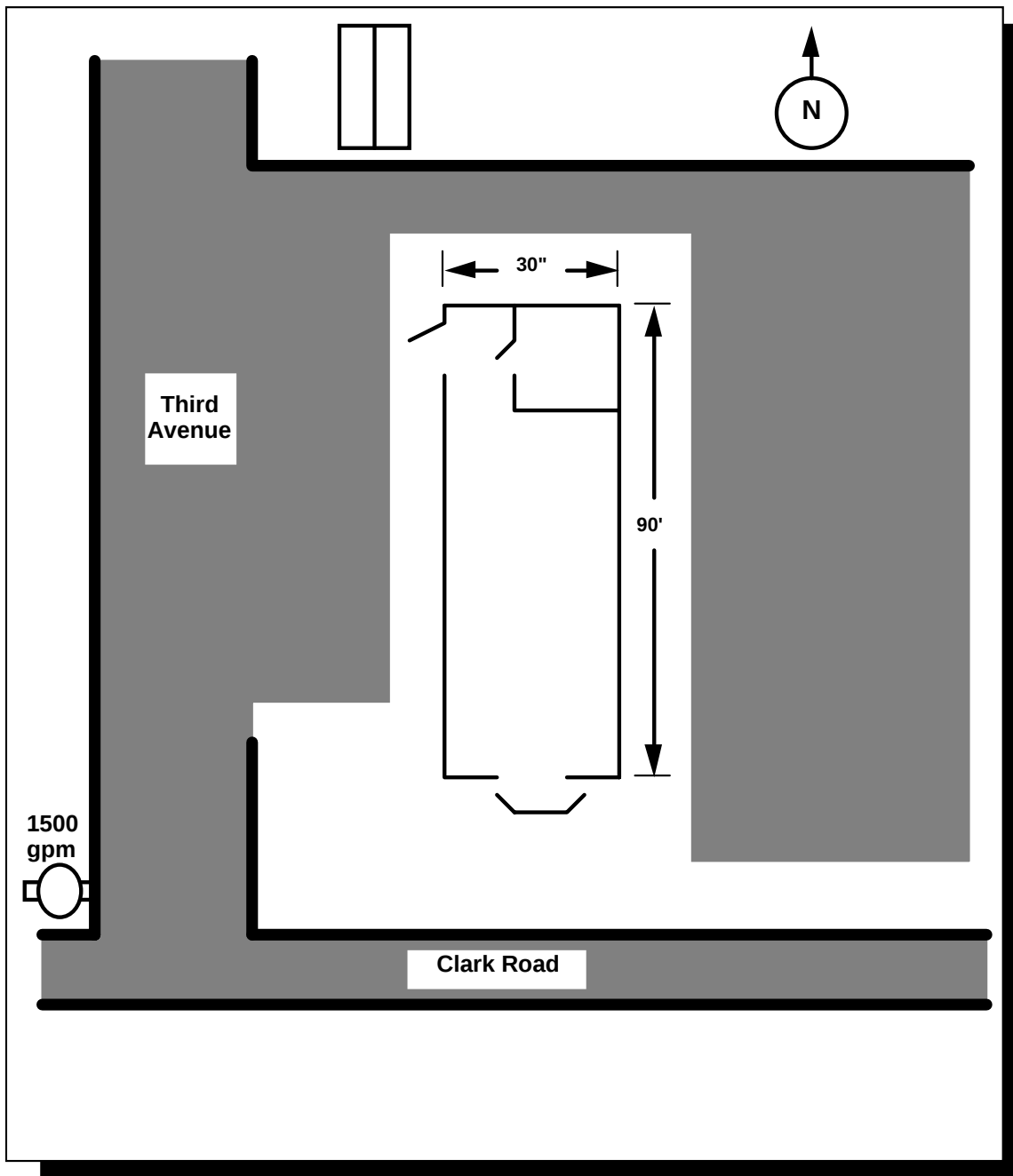
Problems Anticipated:
Poor rear access, limited horizontal ventilation

Standpipe:
None

Sprinklers:
None

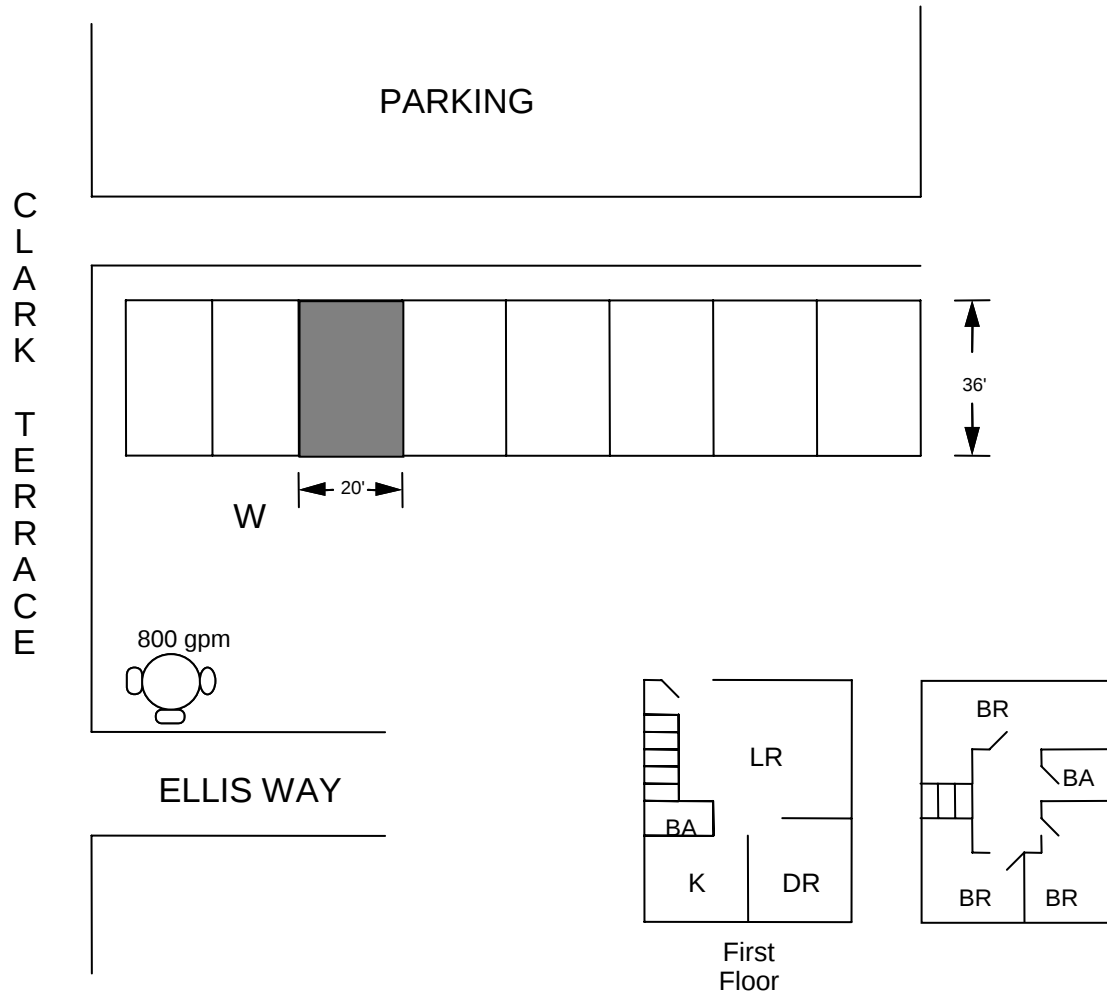
Fire Detection:
None

Activity 5.1 (cont'd)
Scenario 3
Plot Plan/Floor Plan



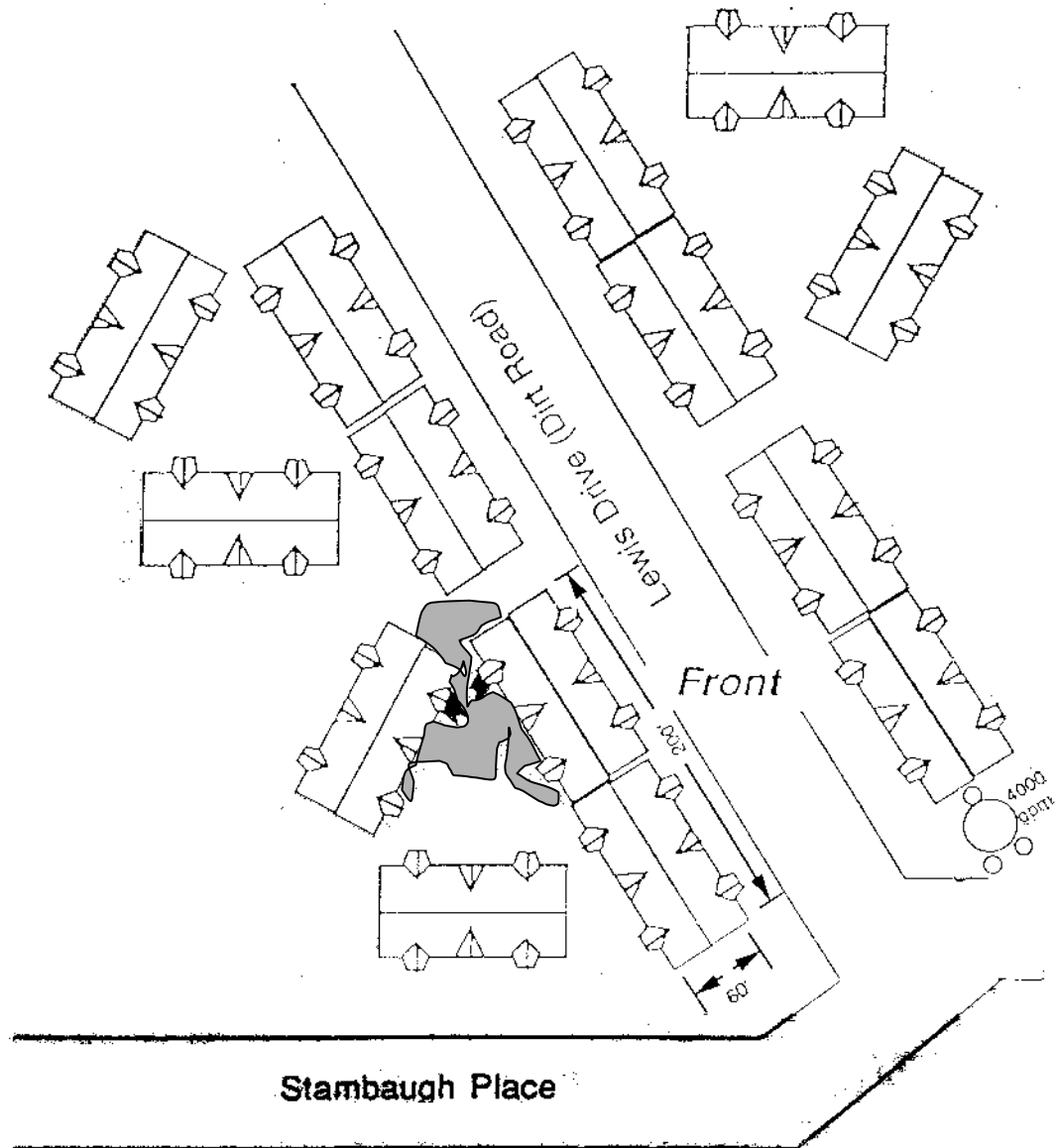
Activity 5.1 (cont'd) Scenario 3 Quick Access Prefire Plan																							
Building Address: <i>1590 Clark Road</i>																							
Building Description: <i>30' x 90', 1-story, ordinary construction with basement</i>																							
Roof Construction: <i>2" x 10" rafters, plywood, composition covering</i>																							
Floor Construction: <i>2" x 10" rafters, sheathing and hardwood flooring</i>																							
Occupancy Type: <i>Bar and Lounge</i>		Initial Resources Required: <i>Determined by class</i>																					
Hazards to Personnel: <i>None more than usual</i>																							
Location of Water Supply: <i>Corner of Clark Road and Third Ave.</i>		Available Flow: <i>1,500 gpm</i>																					
<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td colspan="5"></td> <td colspan="4" style="text-align: center; padding: 5px;">Estimated Fire Flow</td> </tr> <tr> <td style="text-align: center; padding: 5px;">Level of Involvement</td> <td style="text-align: center; padding: 5px;"><i>25%</i></td> <td style="text-align: center; padding: 5px;"><i>50%</i></td> <td style="text-align: center; padding: 5px;"><i>75%</i></td> <td style="text-align: center; padding: 5px;"><i>100%</i></td> </tr> <tr> <td style="text-align: center; padding: 5px;">Estimated Fire Flow</td> <td style="text-align: center; padding: 5px;"><i>225</i></td> <td style="text-align: center; padding: 5px;"><i>450</i></td> <td style="text-align: center; padding: 5px;"><i>675</i></td> <td style="text-align: center; padding: 5px;"><i>900</i></td> </tr> </table>										Estimated Fire Flow				Level of Involvement	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>	Estimated Fire Flow	<i>225</i>	<i>450</i>	<i>675</i>	<i>900</i>
					Estimated Fire Flow																		
Level of Involvement	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>																			
Estimated Fire Flow	<i>225</i>	<i>450</i>	<i>675</i>	<i>900</i>																			
Fire Behavior Prediction: <i>Rapid horizontal fire spread</i>																							
Predicted Strategies: <i>Confinement, ventilation, extinguishment</i>																							
Problems Anticipated: <i>Interference by patrons</i>																							
Standpipe: <i>None</i>	Sprinklers: <i>None</i>		Fire Detection: <i>None</i>																				

Activity 5.1 (cont'd)
Scenario 4
Plot Plan/Floor Plan



Activity 5.1 (cont'd) Scenario 4 Quick Access Prefire Plan																			
Building Address: <i>600-614 Clark Terrace</i>																			
Building Description: <i>20' x 36', 2-story, wood frame</i> Roof Construction: <i>2" x 4", nailed, wood truss, common attic</i> Floor Construction: <i>1st floor--concrete slab, 2nd floor--platform, 2" x 8" rafters, plywood sheathing</i>																			
Occupancy Type: <i>Townhouse</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>None more than normal for a dwelling</i>																			
Location of Water Supply: <i>Clark Terrace and Ellis Way</i>		Available Flow: <i>800 gpm</i>																	
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	Estimated Fire Flow																		
Level of Involvement	25%	50%	75%	100%															
Estimated Fire Flow	100	200	300	420															
<i>Fire flow based on 1st floor of 1 house with 2 exterior and 1 interior exposures</i>																			
Fire Behavior Prediction: <i>Rapid horizontal and vertical spread</i>																			
Predicted Strategies: <i>Rescue, exposures, ventilation, confinement, extinguishment</i>																			
Problems Anticipated: <i>Limited access, limited egress, common attic</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

Activity 5.1 (cont'd)
Scenario 5
Plot Plan/Floor Plan



Activity 5.1 (cont'd) Scenario 5 Quick Access Prefire Plan																			
Building Address: <i>Lewis Drive and Stambaugh Place</i>																			
Building Description: <i>60' x 200', 3-story, wood frame (under construction)</i> Roof Construction: <i>2" x 4" gusset plate wood truss, plywood sheathing</i> Floor Construction: <i>1st floor--concrete slab, 2nd/3rd floor--parallel chord wood truss, plywood sheathing</i>																			
Occupancy Type: <i>Unoccupied apartments</i>		Initial Resources Required: <i>Determined by class</i>																	
Hazards to Personnel: <i>Radiant heat, early collapse, rapid fire spread--no drywall on walls</i>																			
Location of Water Supply: <i>Lewis Drive and Stambaugh Place</i>		Available Flow: <i>4,000 gpm</i>																	
<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td></td> <th colspan="4">Estimated Fire Flow</th> </tr> <tr> <th>Level of Involvement</th> <td>5%</td> <td>10%</td> <td>25%</td> <td>100%</td> </tr> <tr> <th>Estimated Fire Flow</th> <td>750</td> <td>1,500</td> <td>3,750</td> <td>15,000</td> </tr> </table>						Estimated Fire Flow				Level of Involvement	5%	10%	25%	100%	Estimated Fire Flow	750	1,500	3,750	15,000
	Estimated Fire Flow																		
Level of Involvement	5%	10%	25%	100%															
Estimated Fire Flow	750	1,500	3,750	15,000															
<i>Fire flow on entire open 3-story building with exposure</i>																			
Fire Behavior Prediction: <i>Rapid horizontal and vertical spread</i>																			
Predicted Strategies: <i>Exposures, confinement, extinguishment</i>																			
Problems Anticipated: <i>Limited access, unfinished roads</i>																			
Standpipe: <i>None</i>		Sprinklers: <i>None</i>		Fire Detection: <i>None</i>															

