

# SECTION 7- THE FIRE SERVICE

## UNIT 7 - FIREGROUND COMMAND

### UNIT GOAL

To introduce the student to the basics of on-scene command techniques and the background and implementation of an incident management system

### UNIT OBJECTIVES

The student by the end of the semester shall:

- Identify the three incident priorities
- Define the following:
  - Size-up
  - Goals [strategy]
  - Objectives [tactics]
- Describe the four questions that are answered in a size-up report
- Identify at least five [5] things that an action plan accomplishes
- Describe development of the incident management system
- Identify at least five [5] benefits of using the incident management system
- Identify the major components of the Incident Management System

### KEY TERMS

Branch	Incident stabilization	Property Conservation
Chief	Incident Management System	Rehabilitation
Command Post	Incident Commander	REVAS and RECEOVS
Command Staff	Information Officer	Safety Officer
Director	Initial Attack	Sector
Division	Liaison Officer	Strategic Goals
Finance Section	Logistics Section	Staging Area
Group	Operations Section	Tactical Objectives
Incident Action Plan	Planning Section	Task Force

### INTRODUCTION

The concept of ICS was developed more than thirty years ago, in the aftermath of a devastating wildfire in California. During 13 days in 1970, 16 lives were lost, 700 structures were destroyed and over one-half million acres burned. The overall cost and loss associated with these fires totaled \$18 million per day. Although all of the responding agencies cooperated to the best of their ability, numerous problems with communication and coordination hampered their effectiveness. As a result, the Congress mandated that the U.S. Forest Service design a system that would "make a quantum jump in the capabilities of

Southern California wildland fire protection agencies to effectively coordinate interagency action and to allocate suppression resources in dynamic, multiple-fire situations."

The California Department of Forestry and Fire Protection, the Governor's Office of Emergency Services; the Los Angeles, Ventura and Santa Barbara County Fire Departments; and the Los Angeles City Fire Department joined with the U.S. Forest Service to develop the system. This system became known as FIRESCOPE (Firefighting RESources of California Organized for Potential Emergencies).

In 1973, the first "FIRESCOPE Technical Team" was established to guide the research and development design. Two major components came out of this work, the ICS and the Multi-Agency Coordination System (MACS). The FIRESCOPE ICS is primarily a command and control system delineating job responsibilities and organizational structure for the purpose of managing day-to-day operations for all types of emergency incidents.

By the mid-seventies, the FIRESCOPE agencies had formally agreed upon an ICS common terminology and procedures and conducted limited field-testing of ICS. By 1980, parts of ICS had been used successfully on several major wildland and urban fire incidents. It was formally adopted by the Los Angeles Fire Department, the California Department of Forestry and Fire Protection (CDF), the Governor's Office of Emergency Services (OES), and endorsed by the State Board of Fire Services.

Also during the 1970s, the National Wildfire Coordinating Group (NWCG) was chartered to coordinate fire management programs of the various participating federal and state agencies. By 1980, FIRESCOPE ICS training was under development. Recognizing that in addition to the local users for which it was designed, the FIRESCOPE training could satisfy the needs of other state and federal agencies, the NWCG conducted an analysis of FIRESCOPE ICS for possible national application.

By 1981, ICS was widely used throughout Southern California by the major fire agencies. In addition, the use of ICS in response to non-fire incidents was increasing. Although FIRESCOPE ICS was originally developed to assist in the response to wildland fires, it was quickly recognized as a system that could help public safety responders provide effective and coordinated incident management for a wide range of situations, including floods, hazardous materials accidents, earthquakes and aircraft crashes. It was flexible enough to manage catastrophic incidents involving thousands of emergency response and management personnel. By introducing relatively minor terminology, organizational and procedural modifications to FIRESCOPE ICS, the NIIMS ICS became adaptable to an all-hazards environment.

While tactically each type of incident may be handled somewhat differently, the overall incident management approach still utilizes the major functions of the Incident Command System. The FIRESCOPE board of directors and the NWCG recommended national application of ICS. In 1982, all FIRESCOPE ICS documentation was revised and adopted as the National Interagency Incident Management System (NIIMS). In the years since FIRESCOPE and the NIIMS were blended, the FIRESCOPE agencies and the NWCG have worked together to update and maintain the Incident Command System Operational System Description (ICS 120-1). This document would later serve as the basis for the NIMS ICS.

### ***Variations on the Theme***

In the early 1970s, the Phoenix Fire Department developed the Fire Ground Command System (FGC). The concepts of FGC were similar to FIRESCOPE ICS but there were differences in terminology and in organizational structure. The FGC system was developed for structural firefighting and was designed for operations of 25 or fewer companies.

There were several efforts to "blend" the various incident command systems. One early effort was in 1987 when the National Fire Protection Association (NFPA) undertook the development of NFPA 1561, then called Standard on Fire Department Incident Management System. The NFPA committee quickly recognized that the majority of the incident command systems in existence at the time were similar. The differences among the systems were mostly due to variations in terminology for similar components. That NFPA standard, later revised to its present title: Standard on Emergency Services Incident Management, provides for organizations to adopt or modify existing systems to suit local requirements or preferences as long as they meet specific performance measurements.

Recognizing the continuing challenges occurring in the fire service in applying a common approach to incident command, the National Fire Service Incident Management System (IMS) Consortium was created in 1990. Its purpose was to evaluate an approach to developing a single command system. The consortium consisted of many individual fire service leaders, representatives of most major fire service organizations and representatives of federal, state and local agencies, including FIRESCOPE and the Phoenix Fire Department. One of the significant outcomes of the consortium's work was an agreement on 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, the IMS consortium completed its first document: Model Procedures Guide for Structural Firefighting. As a result, FIRESCOPE incorporated the model procedures, thereby enhancing its organizational structure with operational protocols. These changes enabled the nation's fire and rescue personnel to apply the ICS effectively regardless of what region of the country they were assigned to work. The National Fire Academy (NFA), having already adopted the FIRESCOPE ICS in 1980, incorporated this material into its training curriculum as well.

Responders who have already been trained in ICS do not need retraining if their previous training is consistent with DHS standards. Since NIMS ICS is based on FIRESCOPE and NIIMS, any training developed or provided by FIRESCOPE and NIIMS is consistent with NIMS ICS.

### ***National Incident Management System***

The NIMS provides a consistent, flexible and adjustable national framework within which government and private entities at all levels can work together to manage domestic incidents, regardless of their cause, size, location or complexity. This flexibility applies across all phases of incident management: prevention, preparedness, response, recovery and mitigation.

The NIMS provides a set of standardized organizational structures – including the ICS, Multi-Agency Coordination Systems and public information systems – as well as requirements for processes, procedures and systems to improve interoperability among jurisdictions and disciplines in various areas.

Homeland Security recognizes that the overwhelming majority of emergency incidents are handled on a

daily basis by a single jurisdiction at the local level. However, the challenges we face as a nation are far greater than the capabilities of any one community or state, but no greater than the sum of all of us working together.

There will be instances in which successful domestic incident management operations depend on the involvement of emergency responders from multiple jurisdictions, as well as personnel and equipment from other states and the federal government. These instances require effective and efficient coordination across a broad spectrum of organizations and activities.

The success of the operations will depend on the ability to mobilize and effectively utilize multiple outside resources. These resources must come together in an organizational framework that is understood by everyone and must utilize a common plan, as specified through a process of incident action planning. This will only be possible if we unite, plan, exercise and respond using a common National Incident Management System.

When Homeland Security released the NIMS on March 1, 2004, Secretary Tom Ridge and Under Secretary Brown specifically highlighted compliance with the ICS as being possible fairly quickly. They recognized that in some cities, the fire and police departments have worked together using ICS for years. In other places, only the fire department used ICS. Although law enforcement, public works and public health were aware of the concept, they regarded ICS as a fire service system. The NIMS ends this discrepancy because HSPD-5 requires state and local adoption of NIMS as a condition for receiving federal preparedness funding. While ICS was first pioneered by the fire service, it is, at its core, a management system designed to integrate resources to effectively attack a common problem. This system is not exclusive to one discipline or one set of circumstances; its hallmark is its flexibility to accommodate all circumstances.

Some purists may claim that a particular application of ICS is not consistent with the NIMS. Yet, we need not approach ICS with the same mathematical precision used by an engineer. We are changing the culture of organizations and first responders at all levels of government. As long as implementation of ICS is consistent with the basic principles expressed in the NIMS, we will have made significant progress. Further refinements can be achieved over time based on experience with its use.

## **COMMAND SEQUENCE**

An officer should have a checklist of major areas in which to work. It should lead the officer along a logical path to handle an emergency. This checklist is the command sequence that establishes what needs to be done at the incident. This sequence is the following:

- Incident Priorities
- Size-up
- Goals and Objectives
- Tactical Operations

## **INCIDENT PRIORITIES [See Figure 1]**

These incident priorities never change as far as order in which they are considered. They are in order of importance Life Safety, Incident Stabilization, and Property Conservation.

**Life safety** is the first priority to be considered. Anyone at the incident needs to be protected. These

include fire service personnel, people directly affected by the incident, other emergency personnel, and spectators. Every incident will not have victims threatened by a fire, but there is always a hazard to firefighters to be considered.

**Incident stabilization** or fire control is second priority to be considered. This priority includes the activities that are performed in order to solve the problem or bring the situation under control, further stopping damage. In order to minimize the amount of damage or the extent of the emergency one must intercede to gain control. During the accomplishment of this priority one of two modes must be employed. These are offensive attack mode or defensive attack mode.

#### ***Offensive Attack Mode***

Offensive attack is an interior attack with related support to quickly bring fire under control. The fire control activities are the following:

- locate fire
- attack must support the primary search
- confinement
- extinguishment

#### ***Defensive Attack Mode***

Defensive operation is an exterior attack, with related support to stop forward progress and then to control the fire. The first defensive attack is to protect exposures.. The fire control activities are the following:

- stop forward progress of fire
- exposure protection
- confinement
- bring fire under control

#### ***Changing Attack Modes***

At any fire there may be a need to change attack modes. Some fires may require an initial defensive exterior attack, then change to an offensive attack one the fire control is achieved. If offensive attack teams are unable to control fire in a reasonable period of time, consider going to a defensive attack mode. A general rule of thumb: “if fire cannot be controlled within twenty minutes of arrival on fire scene, a defensive mode should be considered.”. It must be remembered that the safety of firefighters first priority

**Property conservation** is the third priority to be considered. This is also referred to as salvage and overhaul. It is important to reduce the amount of loss and save as much property as possible at an incident. Some ways of limiting damage are effective stream management, aggressive ventilation, use of salvage covers, committing resources to property protection, effective overhaul

#### **Priority Order versus Accomplishment**

The order of consideration never changes, but the order of accomplishment may vary based on circumstances at hand. Although priorities should always be considered in their order of importance, nothing rules out performing one or more simultaneously

#### **SIZE-UP**

Size-up is the rapid mental evaluation of critical factors made at the incident scene to determine what actions to take. It is also a decision making process that starts before the incident that allows the firefighter or incident commander to gather information and develop appropriate strategies. Size-up is more than what we see at first glance when we arrive at the incident scene. There are four factors of size-up:

- Visual
- Reconnaissance
- Pre-incident Planning
- Standard Operating Procedures

### **Visual and Reconnaissance**

An important part of size-up is being able to see what is going on at an incident so intelligent decisions can be made. Two ways of doing this is through visual observation while en route to the scene and upon initial arrival and through reconnaissance of the scene once the incident commander is there. These applications also apply to firefighters who are at the scene also. For a **visual** the responder would look at the area around the scene. Some items to look for would be:

- Hydrant or water supply location
- Indicators if structure is occupied
- Where in the structure the fire might be based on flame or smoke location

For **reconnaissance** the responder will take a walk around the area to see if anything is unusual or to determine what the extent of the incident might be. It also would aid in possibly locating victims.

### **Pre-Incident Planning**

Over the years the fire service has used acronyms to describe the size-up process. This has come to be known as the 13 point size-up. These are considered the essential size-up points to consider. In each term the first letter of the primary topic is part of the acronym. In books by John Norman and William Clark they mention the phrase "**COAL WAS WEALTH**". In the textbooks and student manuals from NFA and ISFSI they use the acronym "**WALLACE WAS HOT**". Each of these is discussing the following terms, but they put them in a different order. For "**COAL WAS WEALTH**" they are:

- **C**onstruction; **O**ccupancy; **A**pparatus/manpower; **L**ife hazard
- **W**ater supply; **A**uxiliary appliances; **S**treet conditions;
- **W**eather; **E**xposures; **A**rea; **L**ocation and extent of fire; **T**ime; **H**eight

For "**WALLACE WAS HOT**" they are:

- **W**ater supply; **A**pparatus/manpower; **L**ife; **L**ocation/extent; **A**rea; **C**onstruction; **E**xposures
- **W**eather; **A**uxiliary; **S**pecial hazards;
- **H**eight; **O**ccupancy; **T**ime

There is another system that is a **Size-up Triangle**. All previous information regarding size-up can fit in to three areas:

- Environment
- Resources
- Conditions

These areas correspond with acronym - **WALLACE WAS HOT**.

The Environment consists of factors that the incident commander knows ahead of time from the pre-incident plan and what has been told to him or her via dispatch. Resources also provide information that is available from the pre-incident plan as well as mutual aid agreements and Standard Operating procedures. Some of the factors relating to resources are not always available prior to the incident, like exactly what and who is responding, how long will it take to get there and does the resource provide adequate personnel to accomplish the job at hand. The last part of the triangle consists of factors that must be handled once the incident commander is there. While some of the factors may be part of the pre-plan not all of the information may be accurate. And, therefore must be determined upon arrival. Size-up is an on-going process it does not stop once combating the incident begins. It is important to

gather as much information as possible about the incident to help in determining: if current efforts are working and the protection and safety of firefighting forces

Size-up addresses problem identification and the priority in which they need to be addressed. An on-scene report needs to be given when the initial units arrive on scene. The first arriving officer should communicate to the other responding units a graphic word picture as to what is occurring at the incident. This report should include:

- What Do I Have?
- What Am I Doing?
- What Do I Need?
- Who Is in Command?

One important aspect of size-up is a function that actually takes place prior to the incident occurring. This function is called pre-incident planning. Pre-incident planning is a process for gathering information, developing procedures, and maintaining information resource system. Before the plan can be developed information on the particular hazard or occupancy must be gathered. Once the information is gathered and analyzed procedures are setup to deal with the problem. When it is known what the hazards are and what resources are needed based on the procedures then a system for determining what resources will be needed to mitigate the hazard. The purpose is to gather as much information about the hazard so when an incident occurs you will know what your chances are of quickly controlling the situation. All of your tactics and strategies will be based on resources versus the incident. If your resources are superior to the fire then you can accomplish an offensive attack, but if your resources are less then you will probably use a defensive approach until you have sufficient resources. A pre-incident planning will accomplish this. Many people believe that pre-incident planning is just surveying a building, locating a water source and determining where the apparatus will be positioned, it is not, some areas of concern while developing a pre-incident plan are

- What is the exact location and address of the structure?
- What are the dimensions of the structure?
- What is the configuration or shape of the building?
- What type of occupancy is it?
- What are the life hazards?
- Is it easily accessible for apparatus and equipment?
- What are the internal access conditions [stairs, elevators, escalators, maze-like corridors]?
- What type of construction is it?
- What are the mechanical features of the structure
- What are the built-in protection features of the building. i.e., structural design, fire suppression systems [sprinkler, standpipe, special extinguishing systems]?
- What are the location of utility shutoffs?
- What is the fuel load of the hazard?
- Are there any special hazards?
- Are there any exposures and what are they?
- Is the water supply adequate to control the fire, or do we look at other options [available and required fire flow]?
- What resources are available to control the fire?
- will time of day or year affect the available resources?

Always remember it is the quality of the information that is gathered that is important, not the quantity.

When developing pre-incident plans be realistic, everything can't be pre-planned at once so consider the following :

- Look at major areas of concern, such as, industrial areas; locations of schools; institutional occupancies and residential areas.
- Consider specific target hazards, such as, warehouses; churches; hotels / motels; major shopping center and eating / drinking establishments
- Consider potential conflagration hazards. A conflagration is a fire that extends beyond man-made or natural boundaries and involves multiple buildings, forest or brush fires extending to occupied structures or closely built structures

### **Standard Operating Procedures [See Table 1]**

Standard Operating Procedures [SOP's] are a set of organizational directives that establish a standard course of action on and off the fireground to increase effectiveness of the fire department. SOP's allow the department to a "game plan" before the incident and are a major element of pre-incident planning. SOP's should be developed to outline and describe the organizational approach to major categories of fireground and non-fireground activities. Some of the areas are

- basic command functions
- a method to divide command responsibility through delegation
- communications and dispatching
- fireground safety [protective clothing, personnel safety]
- guidelines that establish and describe tactical priorities and related functions
- initial resource deployment
- an outline of responsibilities and functions of various companies and units
- response to emergency medical incidents
- response to hazardous material incidents
- decontamination procedures
- calling fire inspectors or investigators to the fire scene
- water supply operations
- mutual aid response to other communities

Any SOP's should be characterized by the following

- Written
- Official
- Should apply to all situations
- Enforced

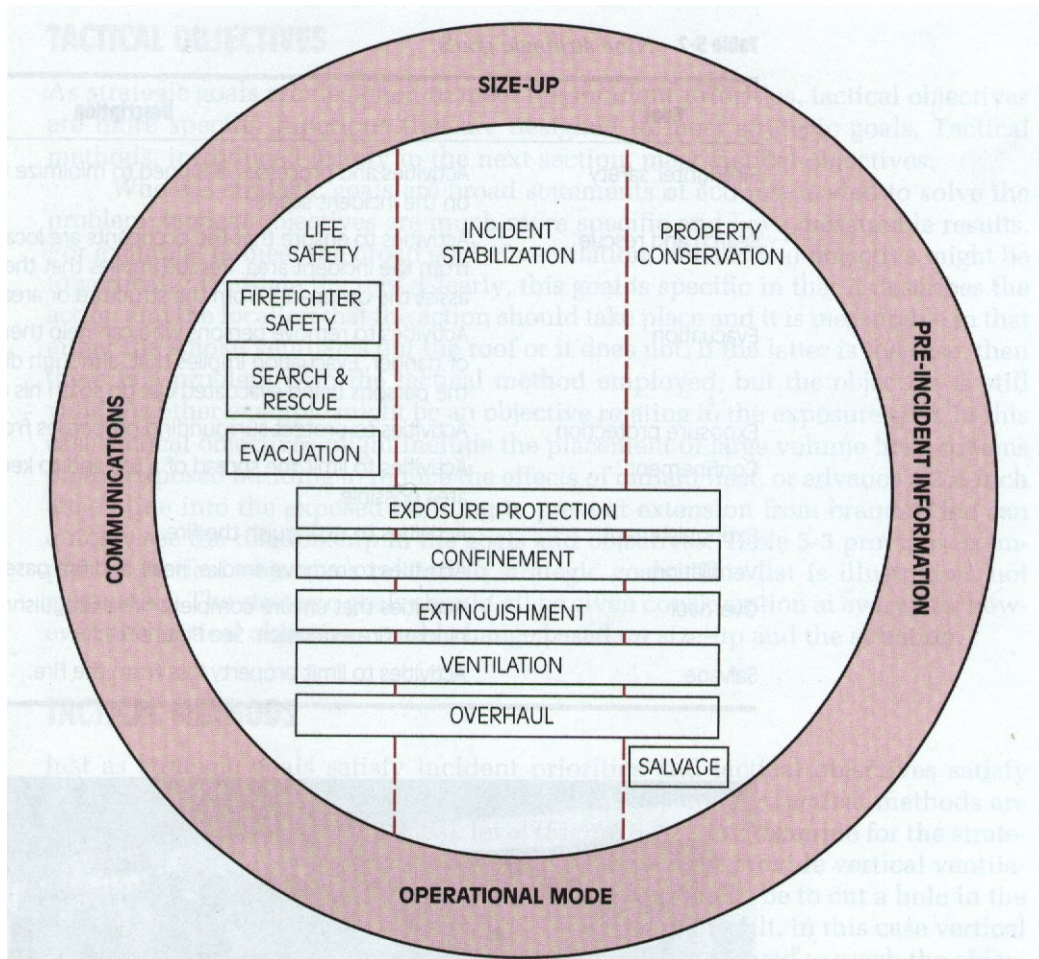
**Table 1 - EXAMPLE OF A MUTUAL AID PROCEDURE**

**MUTUAL AID RESPONSE**

1. Fire department arriving at the scene of a fire will set up a command post for incoming departments
2. This command post will be visible to incoming department as a green flashing light. All incoming department will make their call for the green light and report to this command post to receive orders unless ordered to do otherwise.
3. When responding to mutual aid calls all personnel will stay with their apparatus until the officer-in-command [OIC] contacts the departemnt in charge and has an assignment for his company.
4. When assignments are complete the personnel will notify their OIC and return to a predesignated area
5. Personnel will take orders from OIC of that department and no other department's officers unless they have been assigned to them .
6. Personnel will stay at positions assigned until reassigned with two [2] exceptions:
  - a. An unforeseen danger arises in that position
  - b. It is necessary to make a rescure that suddenly arises
7. There will be at least two [2] personnel assigned to another department to work as a team.
8. No personnel will work with personnel form other departments a a fighter partner.
9. All communications will be by apparatus number only.

**GOALS AND OBJECTIVES [See Table 2]**

Goals and objectives, together makeup what will constitute the action plan. In the past they have also been called strategy and tactics. The goals and objectives are based on incident priorities and size-up. Goals tell you what needs to be done and are designed to meet the incident priorities. Objectives tell you how it will be done. These are more specific functions and designed to meet the strategic goals. .There are nine goals that must be considered at every fire incident to ensure the incident priorities are satisfied. These are firefighter safety, search and rescue, evacuation, exposure protection, confinement, extinguishment, ventilation, overhaul, and salvage. Over the years several goal systems have been developed that focus around five to seven goals from a firefighting perspective. Two of these systems are described by the following acronyms - **REVAS** and **RECEOVS**. [See Figure 1]



**Figure 1** - Example of the relationship of strategic goals to incident priorities

**REVAS** stands for **R**escue, **E**vacuation, **V**entilation, **A**ttack, **S**alvage. **RECEOVS** stands for **R**escue, **E**xposures, **C**onfine, **E**xtinguish, **O**verhaul, **V**entilation, and **S**alvage. Once the officer identifies the problem(s), he can then establish the goals that will lead to controlling the incident. Goals are also known as strategy and objectives are also known as tactics. The tactical objectives will determine how the goals will be met. Goals and objectives must be flexible to must meet changing conditions and will be affected by new information. Goals and objectives will help to determine available resources and whether available resources are needed.

<b>Table 2 - Strategic Goals versus Tactical Objectives</b>	
<b>Strategic Goals</b>	<b>Tactical Objectives</b>
Firefighter Safety	Implement accountability system Assign safety officer Provide for Rapid Intervention Team

Search and Rescue	Conduct primary search / location Conduct secondary search / location Rescue occupant
Evacuation	Alert building occupants Provide safe area of refuge Provide EMS as needed
Exposure Protection	Place exposure lines to reduce radiant heat Provide brand patrol / location
Confinement	Place hoseline of sufficient G.P.M. flow on unburnt side of the fire
Extinguishment	Place a hoseline from unburnt side of the fire and apply a direct / indirect attack
Ventilation	Provide natural vertical ventilation Provide positive pressure ventilation [PPV] with a PPV fan from the front door and remove windows in the fire rooms

### **TACTICAL OPERATIONS [See Table 3]**

These are the processes employed at the tactical level. Just as strategic goals satisfy incident priorities, and tactical objectives satisfy strategic goals, so do tactical methods satisfy tactical objectives. The tactical objective is a measurable result and the tactical method are the tasks required to meet that measurable objective..

<b>Table 3 - Tactical Methods</b>		
<b>Strategic Goal</b>	<b>Tactical Objective</b>	<b>Tactical method</b>
Firefighter safety	Assign Safety officer	<ul style="list-style-type: none"> <li>• Assign the on-call safety officer upon arrival at the scene.</li> <li>• Safety Officer should size-up the building and discuss operations or safety concerns with incident commander</li> <li>• The safety Officer, using the fire scene worksheet, will ensure minimization of threats to crews in the hazard zone.</li> <li>• The Safety officer will ensure that rehabilitation needs are met by assigning a rehabilitation sector as necessary.</li> </ul>

	Provide for rapid intervention	<ul style="list-style-type: none"> <li>• Assign the second arriving truck company as the Rapid Intervention Team [RIT]</li> <li>• RIT to size-up the building and determine need for additional RITs</li> <li>• RIT to stage at a location with all necessary equipment available</li> </ul>
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## DEVELOPING THE ACTION PLAN

This is the culmination of the priorities, size-up, and the goals and objectives. Before this can take place the Incident Commander needs to evaluate the available resources. A good action plan accomplishes the following

- Defines the problem
- Maximizes use of resources
- Provides common work goals
- Provides flexibility
- Anticipates potential problems
- Provides for firefighter safety

The main elements of the plan are

- Tactical operations
- Resource evaluation
- Personnel
- Apparatus
- Equipment

The Fire Officer needs to determine the following

- What resources can best accomplish the planned objectives [tactics]
- Are there enough resources to accomplish the stated goals and objectives
- Consider relief for current resources
- If not, then call for more, NOW!

The Fire Officer also needs to consider the tactical operations. This includes what are the specific tasks to be carried out and what resources will carry them out. The Fire Officer has several options as to how the action plan is implemented. These options are assigning tactics, assigning tasks, and using SOP's

### ***Assigning Tactics***

Tactics should be assigned in the order that they should be accomplished. This allows companies some flexibility in determining what tasks to perform to complete the tactic, it also helps to save time, reduce radio traffic, allows for reaction to unforeseen or changing conditions, and places less demands on the Incident Commander. By assigning tactics the Fire Officer gives the company a specific job description, such as, search the building, vent the roof, advance hose line to second floor, or force the door. Feedback to the Incident Commander is based on the status of the tactic, such as, good - accomplished, or bad - not accomplished, and why. Whoever is assigned the tactic is responsible to see that it gets done

### ***Assigning Tasks***

A task are those duties and activities performed by individuals, crews, teams, or companies which lead to the successful accomplishment of the designated tactic. This is more specific than tactics. The Incident Commander retains responsibility for the tactics and is more involved. Sometimes it is

necessary to assign tasks because of the following reasons.

- companies with minimal or no experience
- using mutual aid companies that you are not familiar with
- when tasks are critical to the action plan's success
- when there can be no chance for misunderstanding

### ***Using SOP's***

SOP's are departmental policies calling for pre-determined actions to be taken under typical conditions. Some of the advantages are they require minimal communication, limit the time for personnel to get into action, and when followed, the companies and personnel know what the other is doing

### **Communicating the Action Plan**

The plan must be conveyed to everyone involved so all are playing from the same sheet of music. Use GYST [Get your Stuff Together] before giving orders. Make sure the orders are CLEAR, CONCISE, & LOGICAL when conveying them. Communicate the plan in the order that you want it accomplished. Some areas that need to be accurately conveyed depend on the operational mode. Give orders in priority order. This helps to coordinate efforts, understand the plan, and how it is to be carried out. Use clear text, not codes, since it is better understood. Use the communication model to assure understanding

- **Communicate** - sender formulates and sends the message
- **Acknowledge** - receiver receives and interprets message
- **Understand** - receiver sends message back to sender to acknowledge receipt

The plan must carry through the entire incident. Goals and priorities may change during the incident and the plan needs to adjust to those changes.

## **THE INCIDENT MANAGEMENT SYSTEM**

No matter how small or large the incident there needs to be organized control over it. To do this fire departments use what is called an incident command [IC] or incident management system. [IMS] An incident management system must be used on all incidents that involve more than several units so that safety, accountability, operations can be controlled efficiently. The purpose of any command system is to provide structure, coordination, and the integration of risk management, which in turn increases the level of a firefighter's safety making the effort more effective and efficient. While there are several incident management systems in existence, they all have some commonalities. Among them are the following.

### ***Span of Control***

Span of control is defined as the maximum number of persons one individual can effectively manage. The typical rule of thumb is for five [5] to six [6] persons being supervised by one [1] supervisor.

### ***Unity of Command***

Unity of command is defined as one individual reporting to one supervisor.. This helps to maintain a chain of command and allows for two-way flow of information

### ***Division of Work***

Division of work is defined as breaking large jobs into smaller ones so as to assign responsibility, prevent duplication of effort, and make specific clear-cut assignments. In the fire service this division of labor is typically broken down by functions [tasks], geographical areas. Examples within the fire department are:

- suppression division

- inspection division
- administrative division
- maintenance division
- training division

Most modern command systems follow the guideline of NFPA Standard 1561, Standard on *Fire Department Incident Management Systems*. The most common systems in effect today are:

- FIRESCOPE (CALIFORNIA) (ICS)
- FIRE COMMAND (PHOENIX, AZ) (FGC)
- INCIDENT MANAGEMENT SYSTEM

### **FIREGROUND COMMAND SYSTEM [See Figure 2]**

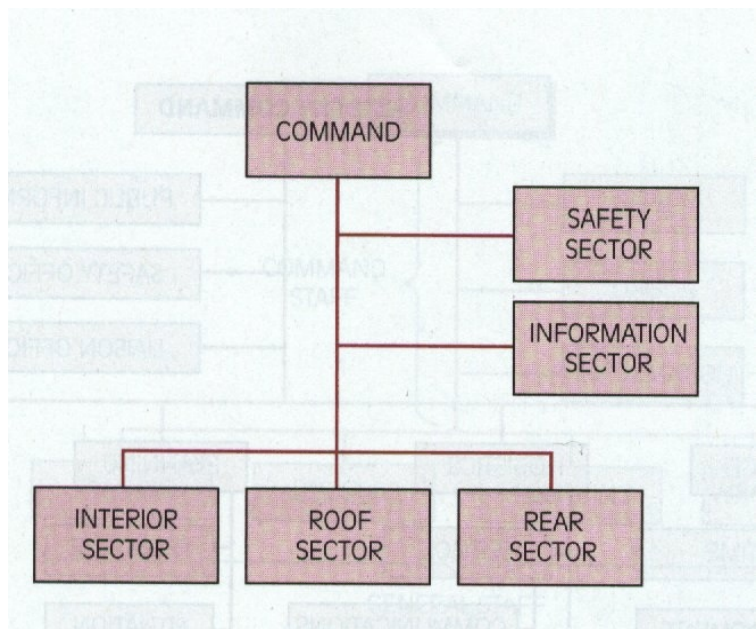
This system became popular during the late 1970s and was developed in Phoenix, Arizona by their fire department. It became popular nationally when Fire Chief Alan Brunacini wrote a textbook on the subject entitled *Fire Command*, published by the NFPA. The system is designed to work effectively for incidents that involve no more than 25 fire companies. It works on three levels: strategic, tactical, and task.. The system used the term sector to define a location or activity. A sector is a geographical area or function established and identified within the system for operational purposes. A typical use of sectors would be:

- roof sector
- 1<sup>st</sup> floor sector
- ventilation sector
- medical sector

The system is not used that much today.

### **FIRESCOPE SYSTEM**

FIRESCOPE is an acronym that stands for **FI**ghter **RE**Sources of California **O**rganized for **P**otential **E**mergencies. It was developed in the early 1970s, in California to deal with large wildland/forest fires. It provides for an effective method of control and manages a wide variety of incidents. In this system the overall manager of the incident is called the Incident Commander. In this system personnel are assigned to various incident management levels that have a distinctive organizational title. Command staff personnel are called officers. Section officers are called chiefs. The next level of managers controls branches and are called directors.. Below this are divisions and groups and they are managed by supervisors. This system is designed to allow for a unified command. This is a structure that is able to manage incidents in multiple jurisdictions or multiple response agencies that have responsibility for control of the incident. This system has been adopted by the National Fire Academy as part of its curriculum.



**Figure 2 - Example of Fire Ground Command System**

## **NATIONAL INTERAGENCY INCIDENT MANAGEMENT SYSTEM [See Figure 3]**

This is the latest system and was developed during the 1990s by the National Fire Service Incident Management Consortium. It merges elements of the FIRESCOPE and FireGround Command systems. Basically it is very similar to the FIRESCOPE system in terms of organization and terminology.

The Incident Management System provides the tools necessary for a successful scene manager. Some of the components of the incident management system that make it successful are:

- Common Terminology
- Modular Organization
- Integrated Communications
- Unified Command Structure
- Consolidated Action Plans
- Manageable Span of Control
- Predesignated Facilities
- Comprehensive Resource Management

Some of the benefits of using incident management system are:

- It works on any type of emergency.
- It provides unity of command.
- Clear lines of communication are established.
- Free-lance fire fighting is minimized.
- Incidents requiring multiple agency response can be managed by a command system, understood by all.
- The system can be expanded as needed.
- Resources are utilized better.

In order to understand how the command system it is important to understand some basic terminology. Some of the positions used in the command system are the following.

### **Command Staff -**

*Incident Commander.* The individual responsible for the management of all incident operations

*Information Officer.* Responsible for interface with the media or other appropriate agencies requiring information direct from the incident scene. Member of the command staff

*Liaison Officer.* The point of contact for assisting or coordinating agencies. Member of the command staff.

*Safety Officer.* Responsible for monitoring and assessing safety hazards, unsafe situations, and developing measures for ensuring personnel safety. Member of command staff

### **General Staff**

*Operations Section.* Responsible for all tactical operations at the incident. Includes up to 5 branches, 25 division/groups/s and 125 single resources, task forces, or strike teams. (Note: maintains 5 to 1 span of control)

*Planning Section.* Responsible for the collection, evaluation, dissemination, and use of information about the development of the incident and the status of resources. Includes the situation status, resources status, documentation, and demobilization units as well as technical specialists.

*Logistics Section.* Responsible for providing facilities, services, and materials for the incident. Includes the communications unit, medical unit, and food unit, within the service branch and supply unit, facilities unit and ground support unit within the support branch.

*Finance / Admin Section.*

Responsible for all costs and financial actions of the incident. Includes the time

unit, procurement unit, compensation/claims unit, the cost unit.

The Operations Section is overseen by a *section chief* [The title refers to a member of the general staff. (Planning section chief, operations section chief, logistics section chief, finance section chief) and is responsible the tactical operations that occur at an incident. Under this section are Branches, Divisions, and Groups.

*Branch.* That organizational level having functional/geographic responsibility for major segments of incident operations. The branch level is organizationally between section and division/group/. The person in charge of a Branch is called a *Branch Director* [I.M.S. title for individuals responsible for command of a branch]

*Division* That organization level having responsibility for operations within a defined geographic area. The person in charge of a division is a supervisor [Individuals responsible for command of a division/group/]

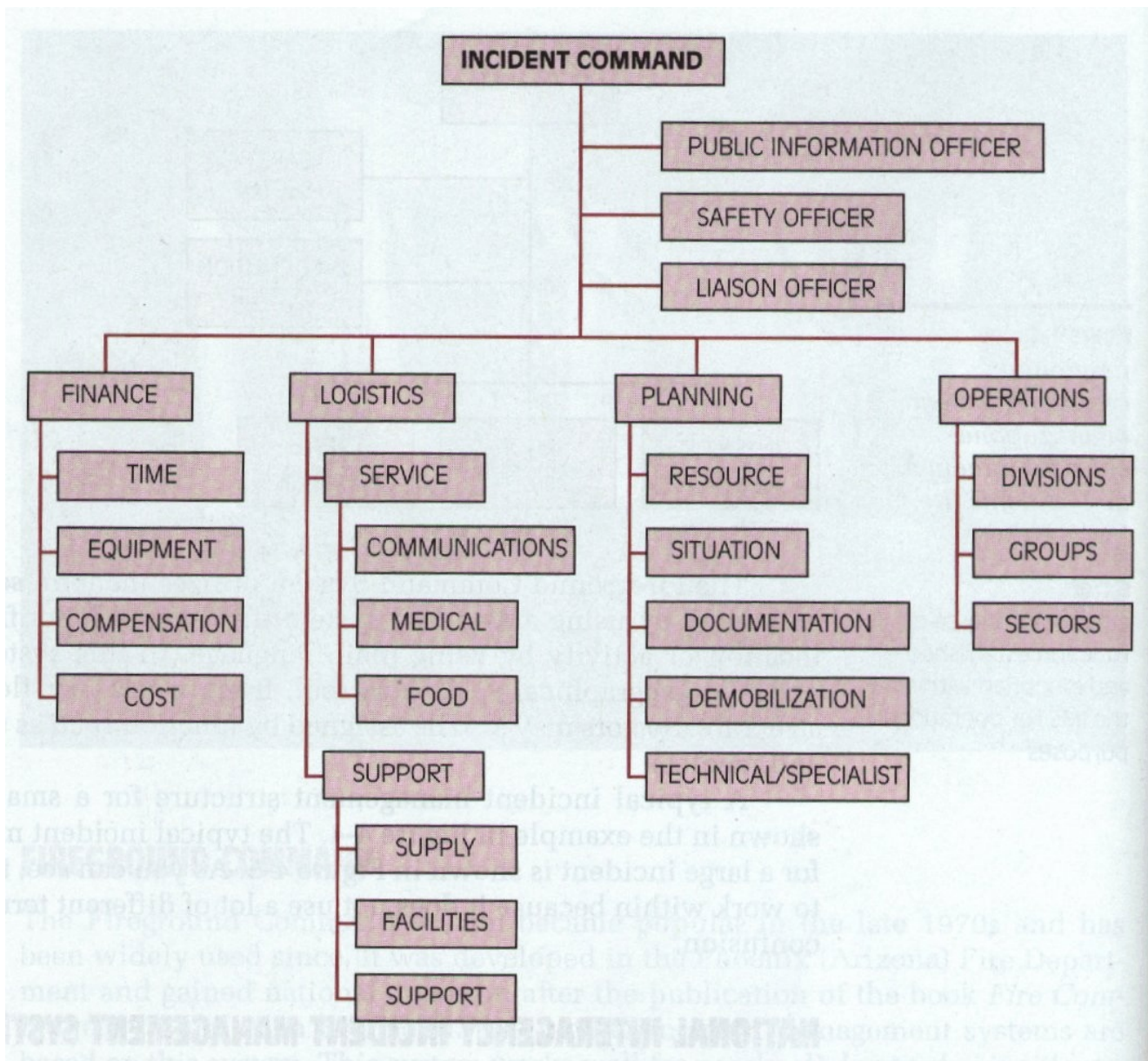
*Group.* That organizational level having responsibility for a specified functional assignment at an incident. (Ventilation, salvage, rescue, water supply, etc.) The person in charge of a division is a supervisor [Individuals responsible for command of a division/group/]

Divisions and Groups can be used together on an incident and are at an equal level in the organization. The purpose of this breakdown is to maintain the **span of control** mentioned before

*Staging* That location where incident personnel and equipment are assigned on an immediately available status.

*Responder*

*Rehabilitation* That function and location which shall include medical evaluation and treatment, food and fluid replenishment, and relief from extreme climatic conditions for emergency responders, according [this is usually found under the **Logistics Section**



**Figure 3** - Example of the National Interagency Incident Management System

Incident management command structure consists of these major areas.

- IMS Operation
- Command Organization
- Command Structure

### **IMS OPERATION**

This should be considered the basic incident management system to be used. The expansion will be based on how successful the incident is going or the determination of the incident commander.

### **ORGANIZATIONAL DEVELOPMENT**

An initial response will constitute the following.

- First alarm
  - First arriving unit or officer assumes command until relieved by a Senior officer.
- A reinforced response will constitute the following.
  - Greater alarm/mutual aid
  - This will be initiated by the on-scene commander if he /she believes that initial response resources are insufficient to deal with size or complexity of the incident.

### **COMMAND ORGANIZATION**

The organization must develop at a pace that stays ahead of the tactical development of personnel and resources.

- LARGE INCIDENTS = LARGE COMMAND SYSTEM
- SMALL INCIDENTS = SMALL COMMAND SYSTEM

**THE INCIDENT COMMANDER SHOULD HAVE MORE PEOPLE WORKING THAN COMMANDING.**

The three configurations of command

The strategic level involves overall command of the incident. The responsibilities include

- Determining offensive or defensive approach
- Determining appropriate strategy
- Establishment of incident objectives
- Setting of priorities
- Developing the action plan
- Obtaining and assigning resources
- Predicting outcomes and planning
- Assigning specific objectives to tactical level units

The tactical level directs operational activities toward specific objectives. The tactical level offices include:

- Branch directors
- Division, Group, Sector Supervisors

Tactical level officers responsible for

- Specific geographic areas or functions
- Supervising assigned personnel

The tactical objectives should accomplish the strategic goals that are outlined in the action plan and the incident priorities.

The task level are those activities normally accomplished by individual companies or specific personnel where the work is done. The tasks when completed should accomplish the tactical objectives.

### **THE COMMAND STRUCTURE**

There are two areas of the command structure the basic organization and the expanded organization. Examples of these two are as follows.

The basic command structure

The most basic combines all three levels (strategy, tactical, task) of the command structure. An example of this would be a response to an outside dumpster fire.

- The commander devises the strategy
- Implements the tactical plan
- Supervises personnel in accomplishing the tasks.

The basic command structure for most “routine” fires (vehicle, small brush, room & contents) that involve a limited number of companies require two levels of the command structure. At this incident the incident commander develops:

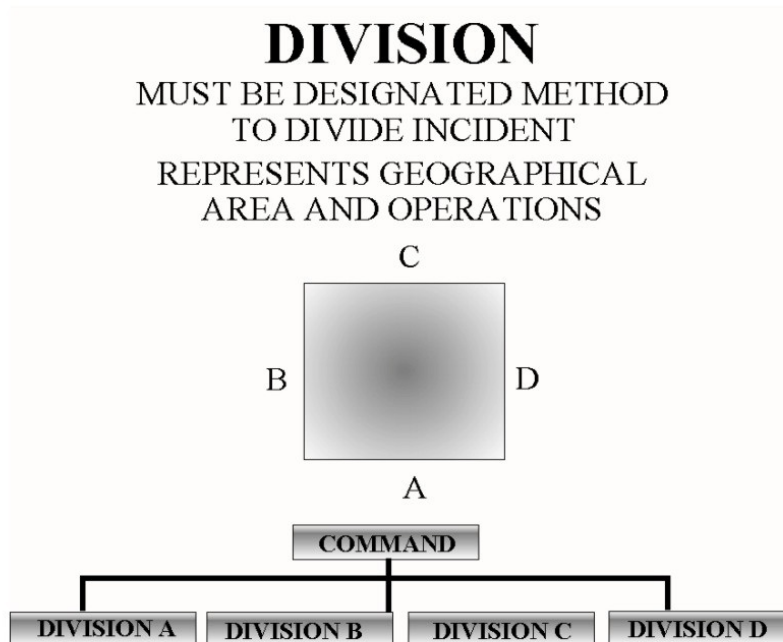
- the Strategic Plan
- the Tactical Plan
- the Individual Companies Work at the Task Level.

### COMMAND STRUCTURE

Terms **Division, Group, Sector** are tactical level management levels that group companies.

The **division** represents geographical area and operations. There must be a designated method of dividing the incident into geographic areas of operation. [See Figure 4]

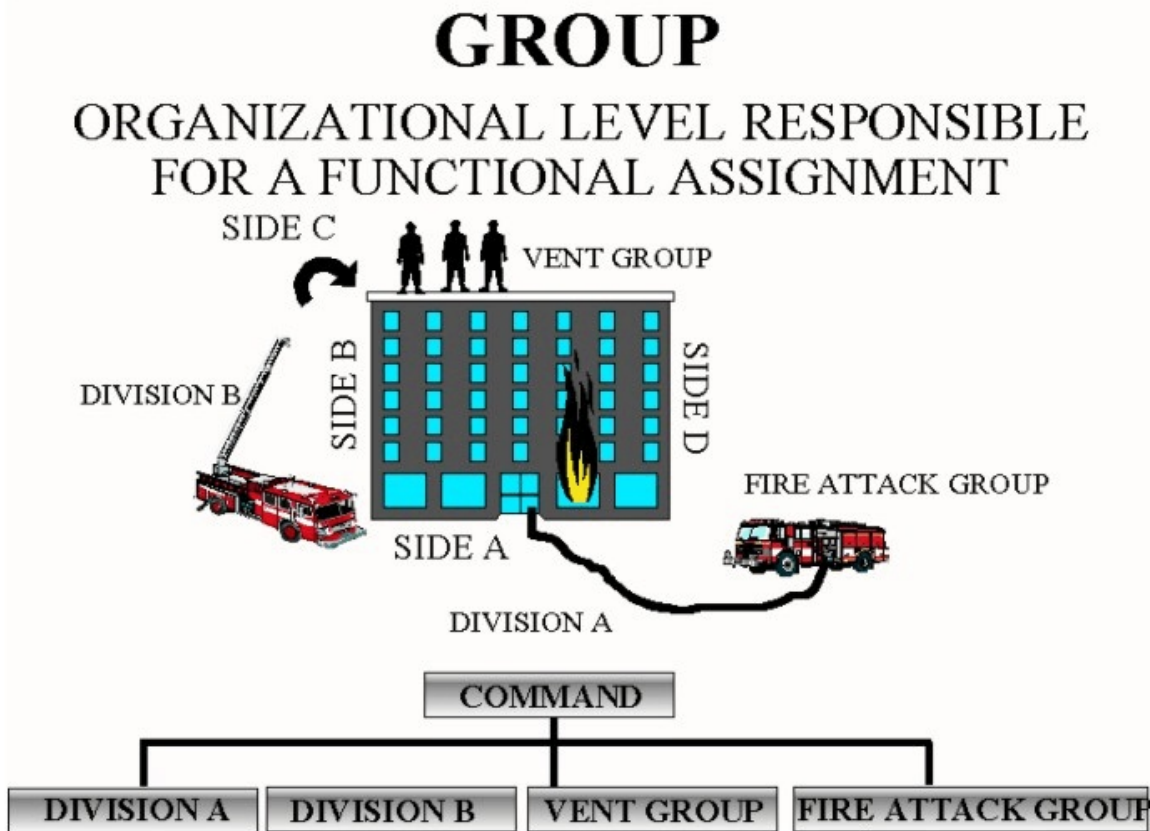
- Roof division, interior division.
- For multi-story incidents divisions will normally be designated by floor number. Example - floor 2: division 2; floor 4: division 4
- Sides of the structure are given a designation going in a clockwise manner around the building - front of building: division a (side a); rear of building: division c (side c)



**Figure 4** - Example of the use of a division

The **group** is an organizational level responsible for a functional assignment. Examples of this are:

- Vent Group
- Fire Attack Group
- Haz Mat Group [See Figure 5]



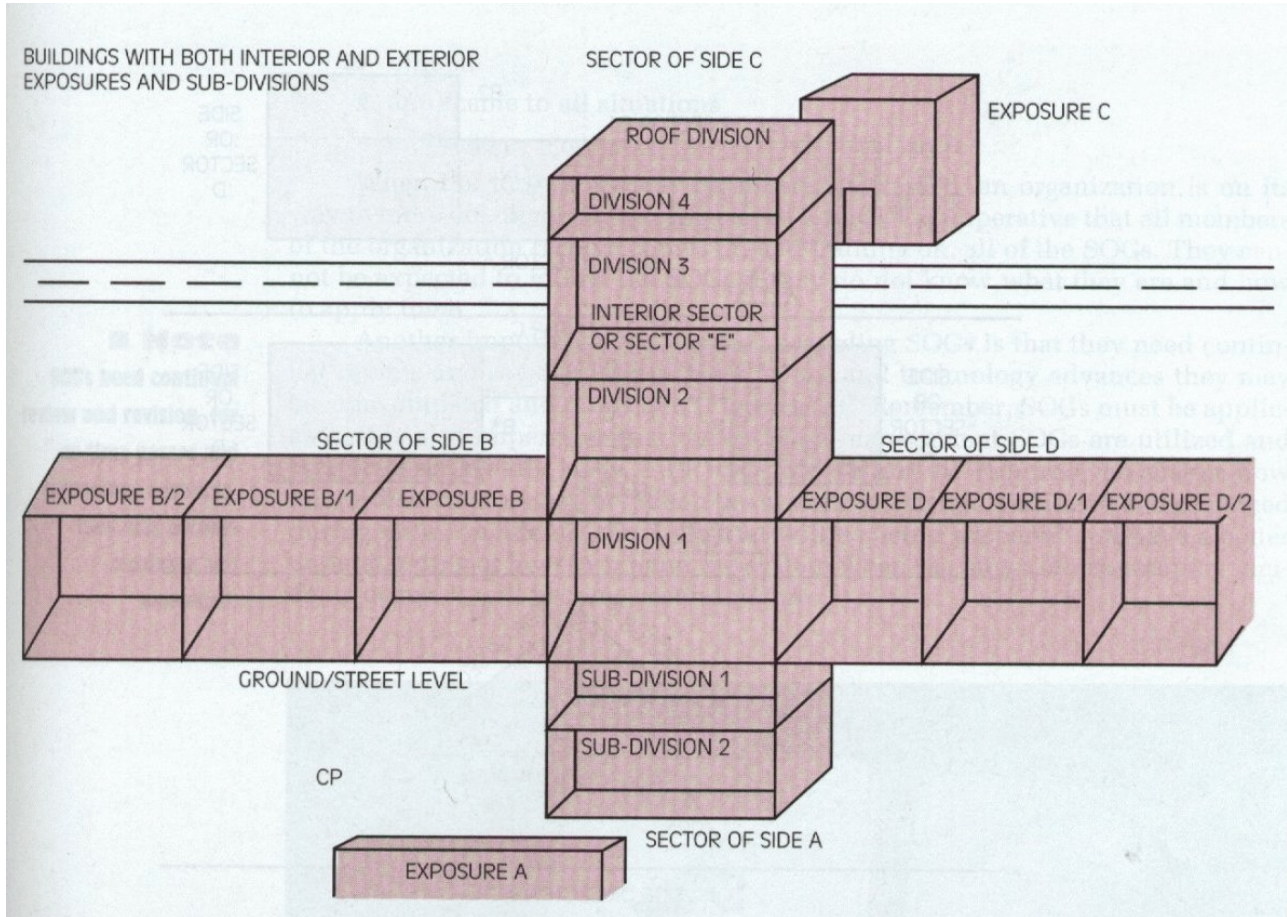
**Figure 5** - Example of the use of a group

Basic operational approach is using this division/group or sector approach to provide a standardized system for dividing up the incident into manageable units or areas. Once division/groups or sectors have been established the incident commander can concentrate on incident strategy and resource assignments. This approach reduces the span of control, normal span of control is 3 to 7, when span exceeds this the incident commander must expand the command system by adding an operations section. This allows for communication with organizational levels, reduces the overall amount of radio traffic and increases ability to transmit critical communications.[See Figure 7]

**EACH UNIT MUST BE GIVEN THE APPROPRIATE RADIO DESIGNATION - VENT SECTOR, DIVISION A, ETC.**

This approach allows division/group or sector supervisors to deploy resources to meet tactical objectives. It makes supervisors responsible for communicating needs and progress to incident

commander.



**Figure 6 - Example of dividing an incident using divisions**

Some of the factors for deploying division/groups or sectors.

- When command can no longer effectively handle the number of companies involved in the incident.
- Complex operations (haz mat, technical rescues).
- Incident has special hazards (unstable structural conditions, hazardous materials, heavy fire load, marginal offensive operations).

The incident commander will assign division/groups or sectors and provide the following:

- Tactical objectives to meet
- A radio designation
- Identify resources assigned to division/group or sector

Some general guidelines to follow for this command structure approach are the following.

- Command has responsibility to assign all division/groups or sectors.
- Command To advise what their tactical objectives are, and what the overall strategy and action plan are.

- Number of companies assigned will depend on conditions within the division/group or sector.
- Command must subdivide incident in a way that makes sense.
- Division/group supervisors will radio designation during any communications.
- Transfer of command procedures will be used when transferring division/group or sector responsibility.
- Division/group supervisors must be in a position to directly supervise and monitor operations.
- Responsibilities of division/group supervisors.
  - Complete objectives assigned by command.
  - Account For all assigned personnel.
  - Ensure operations are conducted safely.
  - Monitor work progress.
  - Redirect activities as necessary.
  - Coordinate actions with related activities.
  - Monitor welfare of assigned personnel.
  - Request additional resources as needed.
  - Provide command with essential and frequent progress reports.
  - Re-allocate resources within the division/group or sector.
  - Maintain a readily identifiable and visible position as much as possible.
- When a company is assigned from staging area they will be told what division/group or sector and the name of the supervisor to report to

**COMMAND MUST BE ADVISED IMMEDIATELY OF SIGNIFICANT CHANGES, PARTICULARLY THOSE INVOLVING THE ABILITY OR INABILITY TO COMPLETE AN OBJECTIVE, HAZARDOUS CONDITIONS, ACCIDENTS, STRUCTURAL COLLAPSE, ETC.**