

This guideline provides Department procedures for operating at high rise fire incidents. High rise fires present some particular problems in firefighting operations. Most of these are related to the difficulties of access, the complexities of construction, and the number of occupants within these structures. Therefore, any situation in a high rise structure is more complicated than the same situation occurring in a low-rise environment.

The life safety aspects of a fire in a high rise structure are always a primary concern for the Incident Commander. Large numbers of occupants are usually involved in these decisions. All units must evaluate and report on the conditions in each area of the structure and the tenability or need for evacuation. An aggressive coordinated attack is often the most effective tactical option for high rise situations.

FIRST ALARM CONSIDERATIONS:

Construction of most high rise buildings effectively shields the interior from the exterior. Even with nothing showing, the first arriving Company and Chief Officer should make an assumption of a concealed fire.

The initial arriving officers must be concerned with:

- Identifying the fire floor and location of the fire. (Labeling of ICS Divisions by floor assists personnel in location of assignments)
- Send attack companies to the fire floor (at least three of the four first arriving companies.)
- Providing for life safety to persons in immediate danger.
- Supplementing the built-in fire protection system(s).
- Recalling all appropriate elevators.

SECOND ALARM CONSIDERATIONS:

- Resources shall report to Base or assigned by the IC.
- Resources may be given a direct tactical assignment at the discretion of the Incident Commander.
- Resources may be assigned to support functions at the discretion of the Incident Commander.
- Consider establishing vital staff functions (i.e., Systems, Staging, Base, Ground Support, etc.)

THIRD ALARM AND GREATER CONSIDERATIONS:

- Resources shall report to Base or assigned by the IC.
- Resources will typically be assigned tactical assignments.

OVERHEAD CONSIDERATIONS:

- Once intra-department overhead has reached draw down, the IC can request a specific number of North Zone chiefs to be add to the response.
- Specific overhead positions may be requested by utilizing the North Zone ICS Qualification System/North Zone Emergency Response Directory. Requests are to be made through the North Comm.
- Overhead personnel shall report to Base unless otherwise directed by the Incident Commander.
- Overhead personnel shall respond to the incident with all appropriate safety clothing and ICS position work materials.

TYPICAL FIRST ALARM COMPANY RESPOSIBILITIES:

The first arriving Company should try to identify the fire floor and location of the fire. The fire control room or the alarm panel is a desirable place to start. From this location, the Company Officer can determine the location and type of alarm. Once identified, the Company Officer should proceed with the rest of the company to the fire floor to investigate and report back. Once the fire location has been determined, the first-in Chief Officer arrives and establishes command and establishes a command post. The second arriving Engine Company responds to the fire floor and reports to fire attack or the Division Supervisor.

The Captain and Firefighter on the third arriving Engine Company should consider establishing Lobby Control and Systems. The Engineer should proceed to the appropriate FDC and prepare to supplement the sprinkler system. If the building has a dry standpipe system, pumping the standpipe(s) would be the first priority of this company.

The fourth arriving Engine Company responds to the fire floor and reports to fire attack or the Division Supervisor. IC should weigh the needs of fire attack and the need to establish In-Building Staging Area (2- floors below the fire floor).

The first arriving truck company reports to the Incident Commander and will be sent to the fire floor with forcible entry tools and additional firefighting equipment. The truck should support search and rescue operations if it is believed that there are possible victims.

INCIDENT COMMANDER CONSIDERATIONS:

- Has the building been evacuated?
- Is the building in need of total evacuation?
- Is there an adequate water supply?
- Are there adequate firefighting personnel? A working fire may necessitate doubling the assignment that is responding. As a general rule, a working fire above the fifth floor will require at least 100 personnel to control.
- Are there adequate overhead personnel on scene, or on order, to fill all vital positions?

- Are there resources assigned to check for extension above the fire floor?
- Are support functions being established?
- Are all positions vital to smooth operations assigned?

COMMUNICATIONS:

At a minimum, high rise incident communications should be established between stairwells and floors. However, it is highly recommended that communications also be established between:

- Floors
- Stairwells
- Elevators
- Roof
- Lobby
- Certain command functions may be located outside the building

There are several different types of communication systems available for use during a high rise incident.

- Portable radios
- Cellular Telephones
- Public/business telephones available throughout the building
- Built-in emergency telephone systems
- Built-in public address/intercom systems
- A messenger or relay system

IT IS ABSOLUTELY ESSENTIAL THAT ALL RADIO TRAFFIC BE ACKNOWLEDGED. IF ACKNOWLEDGEMENT IS NOT RECEIVED, ASSUME THAT THE MESSAGE DID NOT GET THROUGH.

If a reliable portable radio contact between the fire area and the Incident Command Post cannot be maintained, officers can telephone dispatch and have them maintain a communication phone line. Built-in emergency telephone or intercom systems can also be used. When radio or telephone communications cannot be established, messengers should be used. Fire personnel operating elevators can often be used for this.

High Rise incidents in North Zone will use the RCS 800 MHz Radio communication system as the primary communication network. Typically incidents will be assigned "Talk Groups" from the North Command Frequency Zone.

HIGH RISE FIREFIGHTING CONCERNS:

There are certain peculiarities in high rise firefighting operations which firefighters must be prepared for:

Rescue and Evacuation - The rescue of building occupants and their removal to a safe location, should always receive first consideration at every high rise fire. USUALLY A PROMPT, AGGRESSIVE, ATTACK ON THE FIRE AND ADEQUATE VENTILATION PROCEDURES ARE THE BEST METHODS OF SAVING LIVES AND PREVENTING FURTHER EXTENSION OF THE FIRE.

Fire personnel should be sent to the involved floor and the floor above to reassure and help the occupants. If the hazards are not too great, request that occupants close their doors and remain where in place. If there is a danger of the fire extending to upper floors, or if the people are apprehensive or insistent, evacuate or relocate them. When the upper floors of a high rise building are involved, it may be more advantageous to establish a safe refuge area a few floors above or preferably below the fire. This may be easier and require less fire personnel than allowing people to descend from the structure. Remember that some people are not physically capable of descending many flights of stairs.

Law enforcement units may be requested to control bystanders and building occupants after they have been evacuated.

Accountability – The Fireground Accountability System will be implemented on any High Rise incident that requires two or more companies to operate in a hazardous or potentially hazardous area. The responsibility of Fireground Accountability at a High Rise incident rests with the Lobby Control Unit Leader. This is where the crews should leave their accountability tags. Lobby Control will know who is inside the building. Fire ground accountability also rests with each level of assignment such as the Staging, Division, and the company level.

RIC – At least one Initial Rapid Intervention Crew (IRIC) or Rapid Intervention Crew (RIC) shall be assigned during High Rise Incident where personnel are operating in IDLH conditions. The IDLH on a High Rise Incident will more than likely be on or near the fire floor. RIC must be as close to IDLH as possible without be exposed and not breathing air. This will ensure that they are close enough to make a rescue if necessary. If multiple RIC's are put into place, a RIC Group Supervisor will be necessary. RIC's should be labeled to the associated floors, such a RIC 3.

Salvage - Salvage work should begin as soon as possible. If all of the first alarm assignment is committed to fire control and rescue, additional companies should be requested.

Ventilation - One of the major firefighting problems in high rise buildings is the ventilation of smoke. Providing ventilation for attacking crews, without extending the fire to upper floors, is very difficult. High-rise floors are tightly sealed, predominantly fixed glass compartments that are designed to resist the travel of smoke and fire to the upper levels. This is beneficial for

limiting fire extension, but it also serves to impound the heat and smoke on the fire floor. We cannot ventilate vertically through the concrete slabs to the floor above, we can only ventilate horizontally and mechanically.

PPV fans used correctly can increase the effectiveness of firefighters and survivability of occupants in high-rise buildings. In a high-rise building it is possible to increase the pressure of a stairwell to prevent the infiltration of smoke if fire crews configure the fans properly. Although many factors contribute and need to be considered for effective PPV operations, properly configured PPV can achieve stairwell pressures that are high enough to meet or exceed the performance of fixed smoke control systems. Initial fan placement should be at the base of the stairway and additional fans should be placed two floors below the fire to increase the effectiveness.

Ventilation can be accomplished by breaking the glass from the floor above, but this can expose the floors above to flame, the fire fighters on the fire floor to unpredictable winds, and persons on the ground to broken glass.

Overhaul - Whether or not the elevators are operative, overhaul will normally be conducted on the floor where the problem exists. If possible, channel water down floor drains, possibly removing a toilet. If stairwells are used for water removal, doors will have to be propped open. If it can be prevented, water or other debris should not be removed through windows or other aboveground exterior openings.

HIGH RISE - SPECIFIC CONCERNS:

Exterior Spread of Fire - Personnel must be constantly alert to the possibility of outside vertical fire spread. This will require sending firefighting resources to the floor above the main fire.

If fire personnel are sent above the fire to control lapping from floor to floor, control of the vertical passageways must be maintained to provide safe exits for fire personnel. Spread of fire in a high rise structure presents many of the same problems encountered in protecting exposures at a ground level incident or stopping an attic fire. Personnel and equipment must get ahead of the fire. Exterior lapping must be controlled and exterior application of water may be feasible and should be considered.

Interior Stairways - Until the fire has been located, the stairways shall be used to proceed to the fire floor. Many buildings have stairwells clearly placarded with the floor number. When it can be avoided, stairwells should not be used to remove heat and smoke from a building. If the fire floor is well involved, these stairwells will be required for organizing an attack on the fire.

In structures where the stairwell doors are kept locked, a wedge can be placed on every door that is opened. Duct tape can also be used to prevent the lock from closing.

Standpipe and Sprinkler System Inlets - Whenever an actual fire exists, the engine connected to the standpipe inlets should pump a minimum of 150 psi. After the extent of fire has been determined, this pressure may be varied to meet on-scene requirements.

The standpipe hose and nozzles (house line), which are provided in some buildings for use by building occupants, seldom meet fire department standards. Due to the poor quality of the hose, it is subject to bursting at high pressures and the nozzles typically provide inadequate fire flow.

Companies must be prepared for acts of vandalism against the built-in firefighting systems. If the combination standpipe system malfunctions or is damaged beyond use, hose lines will have to be laid up the stairwells. The Ground Support Unit shall request personnel and equipment to accomplish this task.

Elevators Use – Although elevators are necessary for moving large numbers of people and equipment throughout the building under normal circumstances, experience has proven that the operation of elevators under fire conditions can be erratic and dangerous. Elevators are subject to serious malfunction from the effects of heat, smoke, and water on the drive machinery and/or control equipment. In light of the uncertainty of elevators under fire conditions, the following safety guidelines should be followed:

- Elevators should not be utilized for initial investigation and/or fire attack.
- Elevators should not be used as a logistics until deemed safe by the IC.
- The responsibility for the use of the elevators rest with Lobby Control Unit Leader.

HVAC Systems - There are several different types of air conditioning systems in high rise structures. If uncertain about how a system operates, shut it off. Contact the building engineer for information concerning the controlling of the air handling system. Some systems, if not shut down, will circulate heat and smoke into uninvolved portions of the building. In others, the air supply can be shut down and the exhaust blowers used to evacuate the heat and smoke. The Systems Control Unit Leader shall have this responsibility (or the Incident Commander, until the Systems position has been filled)

HELICOPTERS:

Helicopters can often be used to size-up a fire when access is difficult or prolonged. They are useful to warn of the exterior spread of fire and to watch for spot fires on adjacent roofs. However, noise from helicopters may disrupt communications.

If a helicopter is requested, advise Dispatch of their intended duties so the helicopter can respond properly equipped. Assign an Air Support Group Supervisor and necessary personnel to prepare and maintain a helispot in a parking lot or street intersection, and for servicing of a helicopter as needed. The helispot should be selected so that a clear route can be established for all operations.

ORGANIZATION AND OPERATIONS:

Modified ICS Positions: Certain existing ICS positions and functional units within the highrise incident organization have modified responsibilities that require full descriptions. These positions include: Staging Area Manager, Rapid Intervention (RIC) Group Supervisor, Base Manager, Ground Support Unit Leader and Evacuation Group Supervisor.

Specialized High-Rise ICS Positions: Lobby Control and Systems Control Unit Leaders are specialized functional positions specific to a high-rise incident. Lobby Control Unit is established to provide access control, accountability, and routing inside the building. As the incident escalates, a separate Systems Control Unit may be established to operate, supervise, and coordinate the vital operation of specialized systems incorporated into modern high-rise buildings. These systems may include electrical supply and smoke removal systems. Systems Control Unit coordinates the efforts of various Technical Specialists who might be required to assist in the operation and/or repair of the various systems. During the initial period of an incident, or in a less complex building, the Lobby Control Unit may assume the functions of the Systems Control Unit as shown in the basic organization chart. The positions and modifications are described in the position checklists that follow. The major responsibilities and procedures for each are further explained in the position manuals.

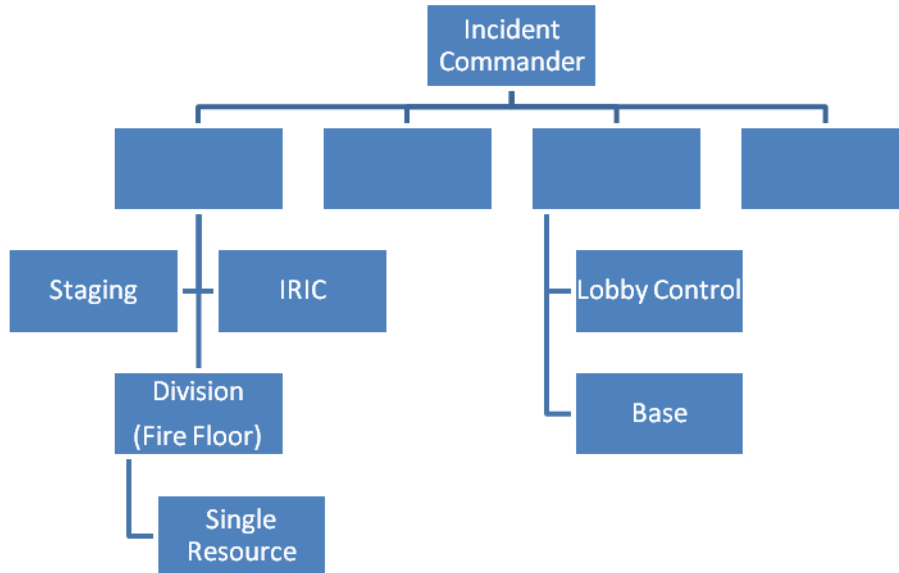
MODULAR ORGANIZATION DEVELOPMENT:

The order in which the ICS organizational structure develops may vary with the type and scope of the incident. Following are examples of modular development of the ICS that serve to illustrate typical methods of expanding the management organization at a high-rise incident.

These examples reflect the size and complexity of the incident and the available resources at a given time in the incident:

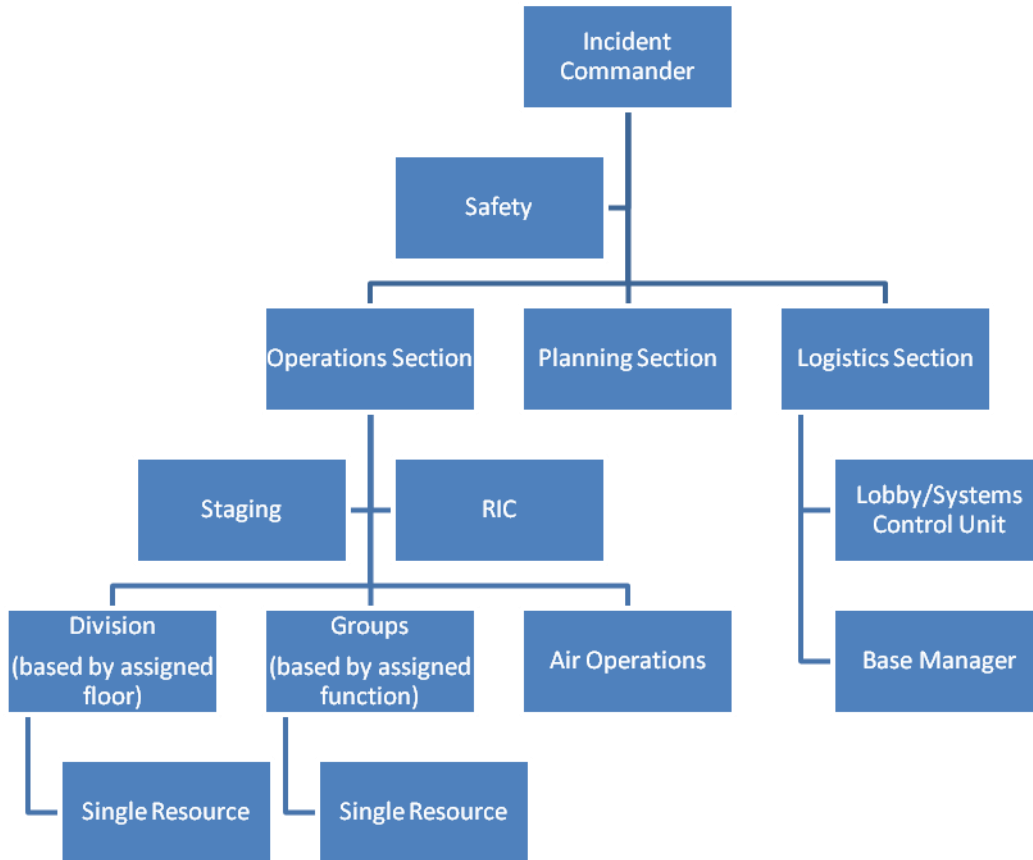
- Initial Response Organization: The Incident Commander manages the initial response resources as well as all Command and General Staff responsibilities.
- Multi-Group/Division Organization: The Incident Commander has established most Command and General Staff positions and has established a combination of divisions and groups to reflect the location and nature of the incident.
- Multi-Branch Organization: The Incident Commander has identified a number of actual or potential incident challenges and has established all Command and General Staff positions. The IC has also established several branches to effectively manage the problems and the resources required for mitigation.

Initial Response (High Rise Fire):



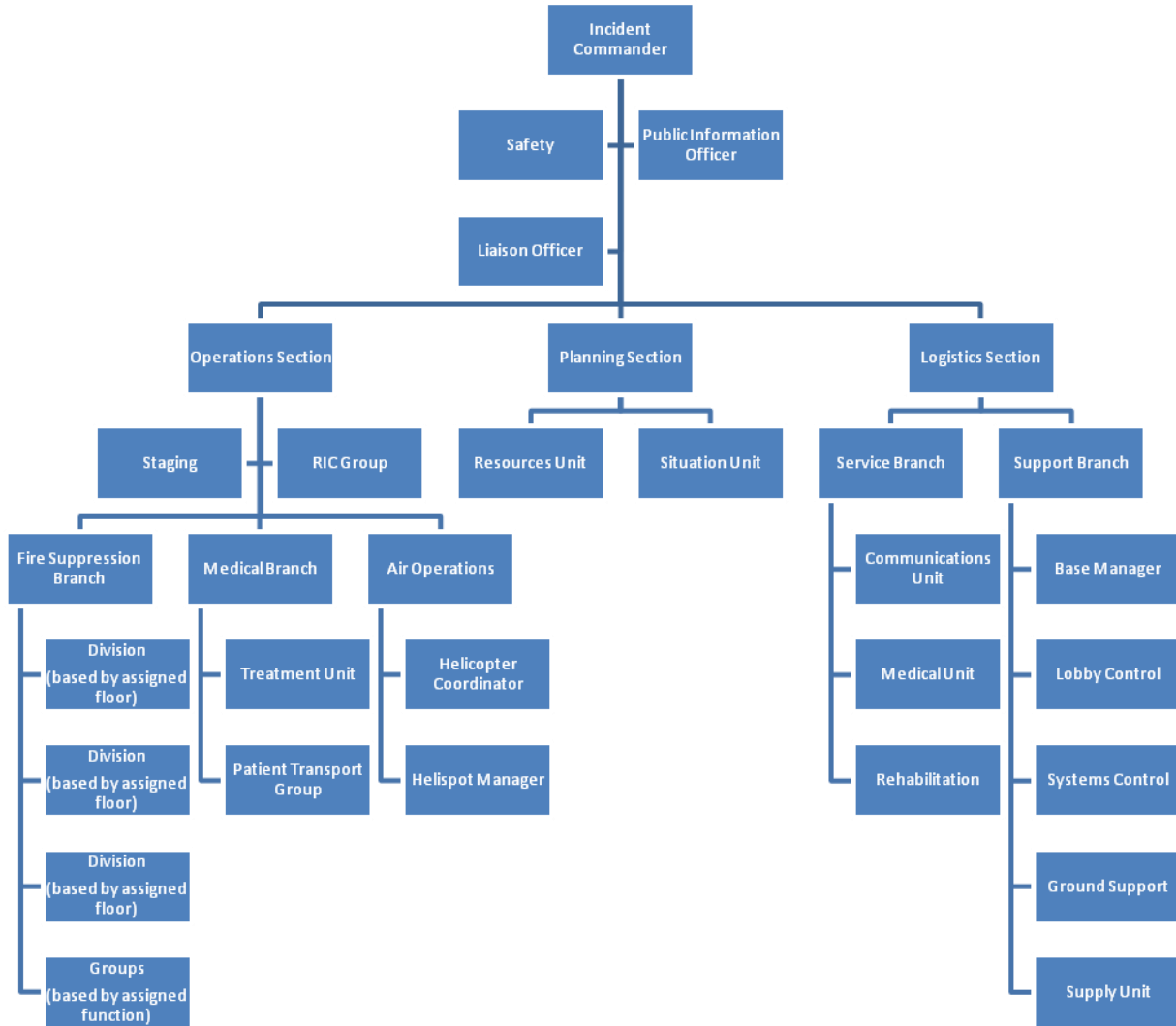
High-Rise Fire Initial Attack (example): This chart depicts the initial assignment including a Command Officer on a fire involving a single floor of a high-rise building. The IC has deployed resources to Fire Attack, Lobby Control, Staging, and Base (ALS-BASE).

Multi-Group/Division Organization:



High-Rise Multi-Group/Division Response (example): As additional resources arrive, the IC has activated the Operations Section Chief along with multiple Divisions to supervise action on each involved or threatened floor. Rapid Intervention Crews/Companies are assigned as determined most effective by Operations. Groups may be assigned certain functions such as medical care for victims, or stairwell pressurization/ventilation. Air Operations Branch will coordinate helicopters used for evacuations or reconnaissance. The Planning Section is activated with selected units. Logistics is assigned to manage Lobby Control, Systems Control, Ground Support, and the Incident Base.

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POSITION CHECKLISTS

HIGH-RISE INCIDENT LOBBY CONTROL UNIT LEADER - The High-Rise Incident Lobby Control Unit Leader's primary responsibilities are as follows: maintain an accountability system, control all building access points and direct personnel to correct routes, control and operate elevator cars, and direct building occupants and exiting personnel to proper ground level safe areas. As directed by the Incident Commander, this unit may be assigned the responsibilities of the Systems Control Unit. The Lobby Control Unit Leader reports to the Support Branch Director/Logistics Section Chief. The Lobby Control Unit Leader should be prepared to provide the Incident Commander or Planning Section with current information from the personnel accountability process. The safest method of ascending to upper floors is the use of stairways. The use of elevators for emergency operations should be determined by department policy. This determination is the ultimate responsibility of the Incident Commander; however, the Lobby Control Unit Leader coordinates the actual use of elevators.

HIGH-RISE INCIDENT SYSTEMS CONTROL UNIT LEADER - The High-Rise Incident Systems Control Unit Leader is responsible for evaluating and monitoring the functions of all built-in fire protection, life safety, environmental control, communications and elevator systems. The Systems Control Unit Leader may operate, support or augment the systems as required to support the incident plan. The Systems Control Unit Leader reports to the Support Branch Director (if established) or to the Logistics Section Chief. Working with the building's engineering staff, the System Control Unit Leader may respond directly to requests from the Operations Section Chief by using the manual operation modes of the various built-in systems. The Systems Control Unit Leader must establish and maintain a close liaison with building's engineering staff, utility company representatives, and other appropriate technical specialists:

HIGH-RISE INCIDENT STAGING AREA MANAGER - The High-Rise Incident Staging Area Manager is responsible for the management of all functions at the Staging Area, and reports to the Operations Section Chief.

HIGH-RISE INCIDENT RAPID INTERVENTION GROUP SUPERVISOR – The Highrise Incident Rapid Intervention Group Supervisor is responsible for the management of Rapid Intervention Crew(s). The High-Rise Incident Rapid Intervention Group Supervisor's organizational responsibilities vary from the standard ICS position due to the potential for above ground operations, extended response times, and RIC(s) operating on different floors/stairwells. This position reports to the Operations Section Chief and requires close coordination with the Division/Group Supervisors and the Staging Area Manager:

HIGH-RISE INCIDENT BASE MANAGER -The High-Rise Incident Base Manager is responsible for the management of all functions at the Base location. This position within the organization differs from the standard ICS in that a Facilities Unit is not appropriate for this type of incident and the Base Manager reports directly to the Support Branch Director (if established) or Logistics Section Chief:

HIGH-RISE INCIDENT GROUND SUPPORT UNIT LEADER - The High Rise Incident Ground Support Unit Leader is responsible for providing transportation for personnel, equipment, and supplies refilling of SCBA air cylinders; providing fueling, service and maintenance of vehicles and portable power equipment and tools; and implementing the ground level Traffic/Movement Plan at the incident including marking safe access routes and zones. The Ground Support Unit Leader reports to the Support Branch Director (if established) or the Logistics Section Chief:

HIGH-RISE INCIDENT EVACUATION GROUP SUPERVISOR - The High-Rise Incident Evacuation Group Supervisor is responsible for managing the movement of building occupants through designated evacuation route(s) to a safe location. This position reports to the Operations Section Chief or Branch Director if established:

DESIGNATED INCIDENT FACILITIES:

Base and Staging have modified functions and locations in high-rise incidents:

Staging Area: The challenging nature of high-rise incidents requires modification to the standard ICS concept of a Staging Area. The limited access and vertical travel distance of large high-rise buildings require establishment of a resource Staging Area within the building. The high-rise Staging Area must also serve multiple functions. The Staging Area is generally located a minimum of two floors below the emergency, as long as the atmosphere is tenable. The specific changes are described in the Staging Area Manager's Position Description.

Base: The Base at a high-rise incident resembles a ground level Staging Area. The main difference between Base and a typical Staging Area is that Base must be expanded to perform the functions inherent to supporting large numbers of personnel and equipment. Base should be located away from the incident building to provide for the safety of personnel and equipment.