CHAPTER 17

HIGH-RISE STRUCTURE FIRE

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INTRODUCTION

The High-Rise Structure Fire module describes an organization designed to provide effective management and control of essential functions at fires occurring in larger multi-story buildings. These fires present significant management, logistical and safety problems. The size and complexity of the interior spaces, the enclosed nature of the hazard area, and the limited and sometimes arduous access to the fire area all contribute to the problems faced by suppression forces. The serious life hazard to occupants and firefighters, endangered by fire and smoke and presented with limited evacuation options, allows little room for error or disorganization. Additionally, most high-rise structures are equipped with various environmental, firefighting, and life safety systems that require support and control.

MODULAR ORGANIZATION DEVELOPMENT

The order in which the ICS organizational structure develops may vary with the type and nature of the incident. A series of examples of modular development follow which are included to illustrate a typical method of expanding the incident organization at a high-rise incident to reflect the size and complexity of the incident and the available resources at a given time in the incident.

Initial Response Organization: Initial response resources are managed by the Incident Commander who handles 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 specialized incident problems and has established all Command and General Staff positions along with several branches to effectively manage the problems and resources.

DESIGNATED INCIDENT FACILITIES

Two ICS incident facilities (Base and Staging) have modified functions and locations in the high-rise incident that reflect a fire location many floors above the ground and the complexity of the incident.

Staging Area: The high-rise incident requires that the regular concept of Staging Areas be modified. The limited access and vertical travel distance of the larger high-rise building requires that a resource staging area be established within the building and that its functions be expanded somewhat. The staging area is generally located two or three floors below the lowest fire floor as long as the atmosphere can be kept clear. The specific changes are described fully in the Staging Area Manager's Position Description.

Base: The Base at a high-rise incident resembles a ground level staging area early in the incident. A major fire in a high-rise building will require the Base to be expanded and to perform the functions of an Incident Base supporting large numbers of personnel. The nature of the urban/suburban environment and the ability of an agency to rotate personnel back to stations may impact the manner in which the Base functions. Base should be located away from buildings to provide personnel safety from falling glass and debris.

ORGANIZATION AND OPERATIONS

Modified ICS Positions: Certain existing ICS positions and functional units within the high-rise incident organization have additional or modified responsibilities that require full descriptions. These positions are Ground Support Unit Leader, Base Manager, Staging Area Manager, Safety Officer, and Medical Unit Leader.

Specialized High-Rise ICS Positions: Because of the nature of a fire incident when confined in a tall building and the many engineered elements of the building, two special functional units are identified and described. They are the Lobby Control Unit and the Systems Control Unit.

In recognition of the extreme hazards of this type of fire control operation and the difficulties in assuring firefighter accountability in interior operations, as well as the egress and ingress of building occupants, the Lobby Control Unit is established. This unit provides access control, entry accountability, routing, and movement control into and inside the structure. In the initial period of an incident, or in a less complex incident/building, or if modified by agency policy, the Lobby Control Unit may assume the functions of the Systems Control Unit as shown in the basic organization chart.

As the incident escalates, and based upon agency policy, a separate Systems Control Unit may be established. In recognition of the basic and specialized systems incorporated into all high-rise buildings, from electrical supply systems to smoke removal systems, the Systems Control Unit is established to operate, supervise and coordinate the vital operation of the building systems. Systems coordinates the efforts of various Technical Specialists who might be required to assist in the operation or repair of the systems.

The positions and modifications are described in the position descriptions that follow. The major responsibilities and procedures for each are fully developed in the Position Manuals.

POSITION CHECKLISTS

HIGH-RISE INCIDENT BASE MANAGER (ICS-HR-222-1) -The High-Rise Incident Base Manager is responsible for the management of all functions at the designated Base and Command Post locations. The High-Rise Incident Base Manager reports to the Logistics Section Chief or Support Branch Director (if established). The 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 or Logistics Section Chief and may assume some of the responsibilities of the Facilities Unit position.

a. Obtain briefing from Logistics Section Chief, Support Branch Director or Incident Commander.
b. Participate in Support Branch/Logistics Section planning activities.
c. Evaluate safety, layout, and suitability of previously selected Base location. Make recommendations regarding relocation if appropriate. Request necessary resources and personnel. Base should be located away from buildings to provide personnel safety from falling glass and debris.
d. Establish Base layout and identify/post each function area as appropriate to the incident size and expected duration - Crew Ready Area, Equipment Pool, Rehabilitation Area, Command Post, Apparatus Parking, Restrooms.
e. Provide safety, security and traffic control at Base and Command Post.
f. Provide facility services - sanitation, lighting and clean up at Base and Command Post.
g. Maintain accounting of resources in Base and periodically update Planning Section or Incident Command.
h. As requested by Operations, Logistics or Incident Command, direct crews and equipment to designated locations.
i. Maintain records of activities and submit reports as directed.
j. Secure operations and demobilize personnel as determined by the demobilization plan.
k. Maintain a Unit/Activity Log (ICS Form 214).

HIGH-RISE INCIDENT GROUND SUPPORT UNIT LEADER (ICS-HR-222-2) - The Ground Support Unit Leader is responsible for providing transportation for personnel, equipment, and supplies; providing refilling of SCBA air cylinders and maintenance of SCBA's; 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.

a. Obtain briefing from Logistics Section Chief, Support Branch Director or Incident Commander.
b. Participate in Support Branch/Logistics Section planning activities.
c. Implement traffic/movement plan, including ground level movement and building primary support stairs, as developed by Planning Section or Incident Commander.
d. Post or mark, ground-level safe movement routes and outside safe refuge areas as identified in the traffic/movement plan.
e. Appoint personnel and activate transport services including stairwell, ground level, and general motor transport.
f. Appoint personnel and activate fueling, maintenance and support of apparatus and portable power equipment and building plant as appropriate.
g. Collect and maintain records of rented or reimbursable equipment use.
h. Appoint personnel and activate SCBA air cylinder refilling, maintenance and support.
i. Maintain inventory of support and transport vehicles, and maintenance and fuel supplies.
j. Submit reports to Support Branch/Logistics Section or Incident Commander as directed.
k. Secure operations and demobilize personnel as determined by the demobilization plan.
l. Maintain a Unit/Activity Log (ICS Form 214).

LOBBY CONTROL UNIT LEADER (ICS-HR-222-3) - The Lobby Control Unit Leader's primary responsibilities are: To operate a personnel/crew accounting system for all building entry and exit; control all building access points and direct personnel to correct stair/elevator or route; control and operate elevator cars; and direct building occupants and exiting personnel to proper ground level safe areas or routes. As directed by the Incident Commander or agency policy, this unit shall be assigned the responsibilities of the Systems Control Unit in the early stages of an incident, or in less complex incidents/buildings, or if modified by agency policy. The Lobby Control Unit Leader reports to the Support Branch Director/Logistics Section Chief. The unit should be prepared to provide the Incident Commander or Plans Section with current information from the personnel accounting process.

Departments and/or agencies must have policy regarding the use of elevators, stairways, or combinations of both when ascending to the upper floors in a high-rise building during a fire or reported fire operations. While the safest method of ascending to upper floors is the use of stairways, it may be necessary to explore the use of elevators for firefighting operations. This determination is the ultimate responsibility of the Incident Commander (IC), however, the actual use of elevators is directed by the Lobby Control Unit Leader.

a. Check in and obtain briefing from Logistics Section Chief or Incident Commander, as appropriate.
b. Make entry, assess situation and establish Lobby Control position. Request needed resources.
c. Establish entry/exit control at all building access points.
d. Establish personnel accounting system for personnel entering/exiting the building.
e. Assume control of elevators and provide operators. Elevator use and operating procedures will follow agency policy and Incident Commander direction.
f. Provide briefings and information to Incident Command Post.
g. Direct personnel to the appropriate stairways/elevator for assignment and direct evacuees and exiting personnel to safe areas or routes from the building.
h. Perform the functions of the Systems Control Unit when directed by the Incident Commander or agency policy.
i. Secure operations and demobilize personnel as determined by the demobilization plan.
j. Maintain a Unit/Activity Log. (ICS Form 214).

SYSTEMS CONTROL UNIT LEADER (ICS-HR-222-4) - The Systems Control Unit Leader monitors and maintains built-in fire control, life safety, environmental control, communications and elevator systems. The Systems Control Unit 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. The unit may respond directly to requests from the Operations Section Chief in the manual operation of the various built-in systems. The Systems Control Unit Leader must establish and maintain close liaison with building/facility engineering staff, utility company representatives, and other appropriate technical specialists.

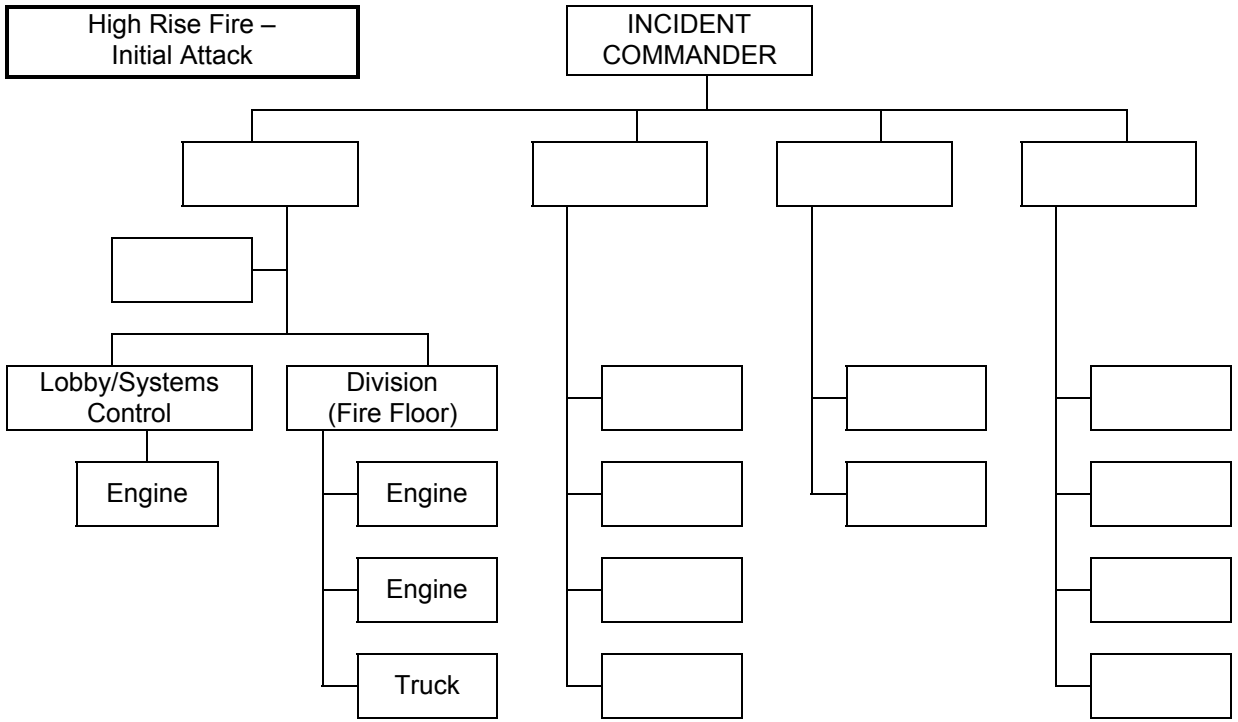
a. Check in and obtain briefing from the Logistic Section Chief or Incident Commander. Obtain information on the type and current performance of built-in systems.
b. Assess current situation and request needed personnel and resources.

c. Request response, and make contact with, the building/facility engineer, utility company representatives, elevator service personnel and others as appropriate.
d. Appoint personnel to monitor and operate building/facility systems display/control panels.
e. Evaluate the status and operation of the fire and domestic water pumps and water supply. Support or repair as required.
f. Evaluate and operate as required the heating, ventilation and air conditioning system (HVAC) and the smoke removal and stairwell protection systems.
g. Evaluate, support and control as needed the building electrical system, emergency power plant, and security systems.
h. Evaluate and support, as needed, public address, telephone, emergency phone and other building communications systems.
i. Secure operations and demobilize personnel as determined by the demobilization plan.
j. Maintain a Unit/Activity Log (ICS Form 214).

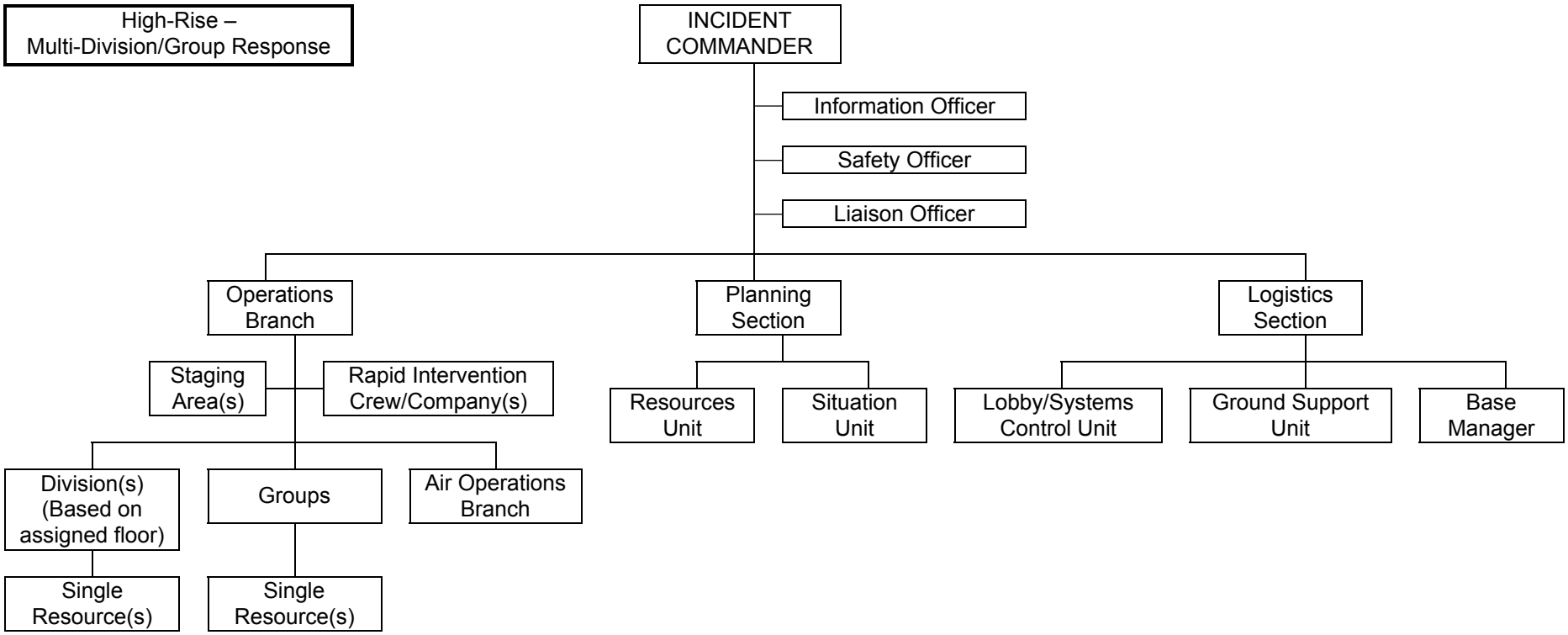
HIGH-RISE INCIDENT STAGING AREA MANAGER (ICS-HR-222-5) - The High-Rise Incident Staging Area Manager is responsible for the management of all functions at the in-building Staging Area, and reports to the Operations Section Chief. The High-Rise Incident Staging Area Manager's organizational responsibilities vary somewhat from the standardized ICS position in that the area also provides a safe refuge/support function within the building. An air cylinder exchange and a rehabilitation/aid function are typically located in the area.

a. Obtain briefing from Operations Section Chief, or Incident Commander.
b. Proceed to selected floors and evaluate layout and suitability. Select Staging Area floor, and advise Operations and Logistics Sections Chiefs. Request necessary resources and personnel.
c. Establish Staging Area layout and identify/post each function area as appropriate to the incident size and expected duration - Crew Ready Area, Air Cylinder Exchange, Equipment Pool, and Responder Rehabilitation Area.
d. Determine, establish or request needed facility services - sanitation, drinking water, and lighting. Coordinate with Logistics Section or Systems Control Unit to maintain fresh air. Maintain Staging Area in an orderly condition.
e. Establish a check-in function for arriving and departing crews.
f. Determine required resource levels from the Operations Section Chief.
g. Provide area(s) for Rapid Intervention Crew or Company (RIC) if co-located with the Staging Area.
h. Maintain an accounting of resources in Staging and periodically update Operations Section Chief and Resources Unit. Advise the Operations Section Chief when reserve levels reach pre-identified minimums.
i. As requested by Operations Section Chief or Incident Commander, direct crews and equipment to designated locations.
j. Secure operations and demobilize personnel as determined by the demobilization plan.
k. Maintain a Unit/Activity Log (ICS Form 214).

FOR MORE DETAILED INFORMATION READ: HIGH-RISE STRUCTURE FIRE OPERATION SYSTEM DESCRIPTION ICS-HR-120-1

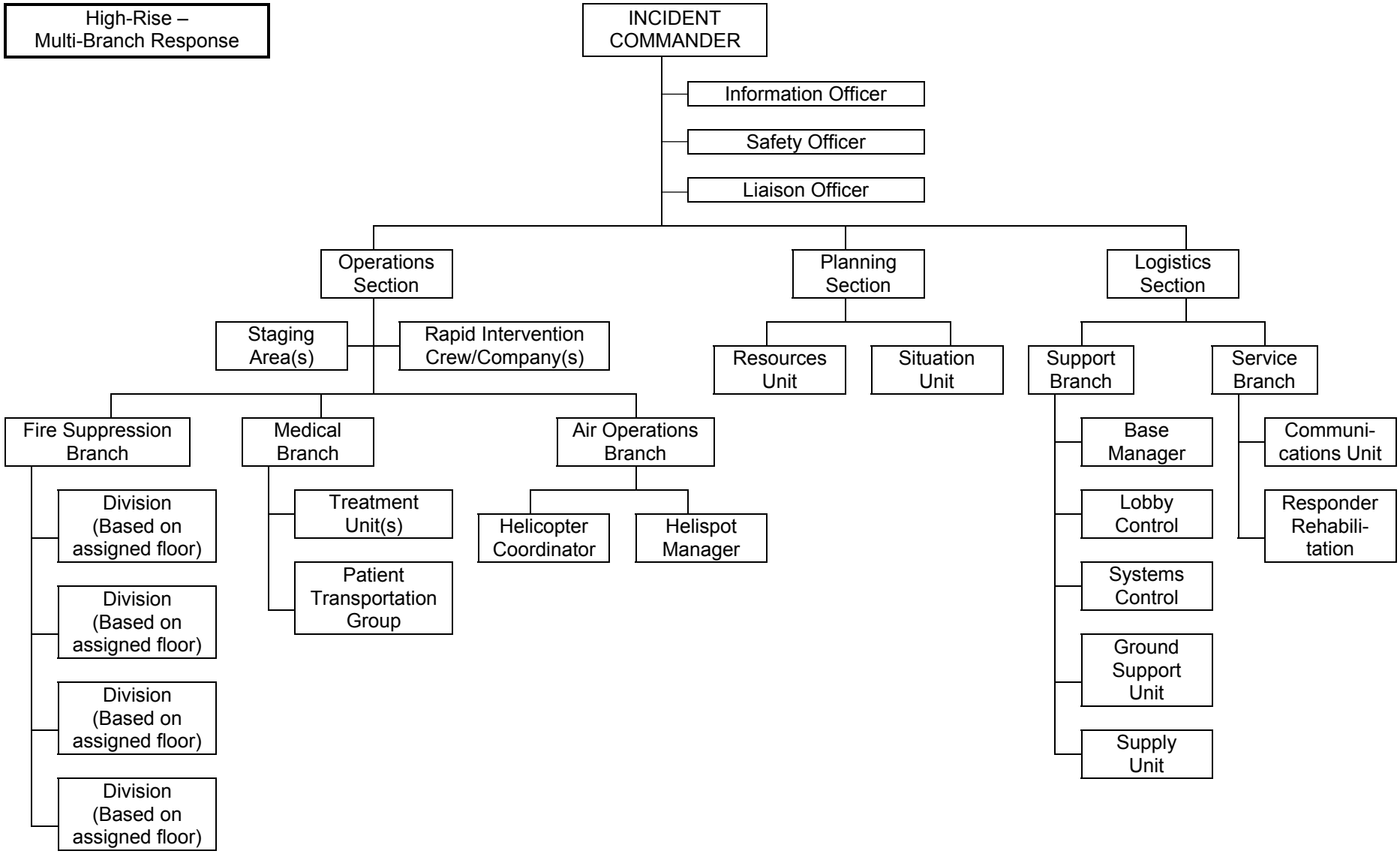


High-Rise Fire Initial Attack (example): This chat depicts the initial deployment of three engines, one truck company and a Command Officer on a fire involving a single floor of a high-rise building. The IC has deployed two engines and the truck to assess the fire floor and to initiate attack if possible. A single engine is assigned to Lobby Control to control access, initiate communications with building staff and address elevators function.



High-Rise Multi-Division/Group Response (example): As additional Units 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/Systems Control, Ground Support, and the Incident Base.

High-Rise –
Multi-Branch Response



High-Rise Multi-Branch Response (example): The fire has involved multiple floors with Divisions assigned to each floor. This complexity has led the Operations Chief to create a Fire Suppression Branch Director to manage these Divisions. A Medical Branch is established and the Air Operations Branch is expanded. The Logistics Section now has both Branches active as well as various Units within each Branch to accommodate the extensive logistical requirements of this size incident.