



HIGH RISE MANUAL

SAN FRANCISCO FIRE DEPARTMENT

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HIGH RISE MANUAL

January 2008

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FOREWORD

The goal of this manual is to establish standard operating practices as authorized by the Chief of Department and implemented by the Division of Training.

The purpose of this manual is to provide all members with the essential information necessary to fulfill the duties of their positions, and to provide a standard text whereby company officers can:

- Enforce standard drill guidelines authorized as a basis of operation for all companies.
- Align company drills to standards as adopted by the Division of Training.
- Maintain a high degree of proficiency, both personally and among their subordinates.

All manuals shall be kept up to date so that all officers may use the material contained in the various manuals to meet the requirements of their responsibility.

Conditions will develop in fire fighting situations where standard methods of operation will not be applicable. Therefore, nothing contained in these manuals shall be interpreted as an obstacle to the experience, initiative, and ingenuity of officers in overcoming the complexities that exist under actual fire ground conditions.

To maintain the intent of standard guidelines and practices, no correction, modification, expansion, or other revision of this manual shall be made unless authorized by the Chief of Department. Suggestions for correction, modification or expansion of this manual shall be submitted to the Division of Training. Suggestions will be given due consideration, and if adopted, notice of their adoption and copies of the changes made will be made available to all members by the Division of Training.

Joanne Hayes-White
Chief of Department

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SECTION 1. INTRODUCTION

A High Rise building is one, which contains a floor area that is located more than 75 feet above the adjacent ground level. There are approximately 800 of these buildings in San Francisco.

High Rise buildings are divided into two classifications:

EXISTING HIGH RISES - Those constructed before 1975.

LIFE SAFETY HIGH RISES - Those constructed after 1975.

For the Fire Department, a High Rise building presents a problem from the time it is under construction. Its height and size create time delays for firefighters in getting up into the building in order to rescue trapped occupants and extinguish the fire. The time delay also gives the fire time to gain headway and thus makes it more difficult to extinguish. The larger the building means more people working in it, which in turn will cause a tremendous evacuation problem. Errors in the planning, design, and construction of buildings as well as improper maintenance of fire protection systems may also help to increase fire spread.

High Rise building design can also magnify the effects and influence the movement of smoke within it. Smoke spread is one of the most significant life hazard problems existing at the time of a fire in a High Rise building. The movement of smoke and fire byproducts, often to locations far removed from the original fire floor, is not always easy to predict. Self-closing interior and stairwell doors may be propped open by fleeing occupants, thereby negating the effect of an HVAC system and allowing for rapid smoke travel.

Fire department operations in High Rise buildings cannot be accomplished by individual units operating independently. Fire department efforts must be organized, safe, and effective. This can be achieved through the use of the Incident Command System, which is a management system designed to control and direct resources committed to an incident.

This manual should serve as a guide for members of the San Francisco Fire Department in the event of a High Rise emergency. Its contents include

- Information on High Rise building construction
- High Rise building fire protection facilities
- Tactics and strategy for High Rise
- Incident Command System

SFFD HIGH RISE POLICY:

Having two engine companies in the Initial Attack Group (IAG) will tend to ensure that a hose lead is placed in operation as effectively and efficiently as possible. Two additional engines are also available on the High Rise first alarm to back-up or replace the initial crews. Units that have responded initially to the building alarm and subsequently discover

the need to request a full box may immediately initiate fire operations as circumstances warrant.

A fire of any magnitude in a High Rise will usually require the equivalent of a conventional third or greater alarm to bring under control. The goal is to front load a High Rise incident to bring sufficient resources to bear on the initial attack and of the greater number of personnel it takes to get the necessary equipment upstairs. In addition, a High Rise second alarm includes additional BC's to carry out all the required functions of the Incident Command System.

PRE-FIRE PLANNING

The age of a High Rise and the code requirements that were in effect at the time of its construction will determine the building's features and functional fire protection systems. Familiarity with an individual building's construction and systems is vitally important for making proper decisions at High Rise incidents. Members of the SFFD should regularly inspect High Rises in their first alarm areas in order to pre-fire plan these buildings and become familiar with them.

EXISTING HIGH RISE BUILDINGS

Existing High Rise buildings are those built prior to 1975. Some have many components of newer life safety buildings. Most existing High Rise buildings do not have a Building Control Station (BCS; also known as a Central Control Station or Fire Control Room (FCR) depending on when it was built). Some have a console located in the lobby staffed by security personnel. The console may contain some of the safety features found in a BCS. All existing High Rises usually contain the following:

1. Two means of exit from each floor. One may be a fire escape.
2. Keys to locked stairwell doors.
3. A means of ventilation- operable windows, break-out windows, or mechanical ventilation.
4. Elevator access to every floor. Elevators usually are capable of recall and firefighter emergency operation.
5. A standpipe-Class I, II, or III.
6. An approved fire warning system or voice (public address) system. A voice system is required in buildings more than 150 feet in height.
7. A fire department communication system is provided where a radio test showed that radio communication was poor in the building.
8. Building Operations Manual (BOM). In existing High Rises, where there is no BCS, the BOM may be located at the security console or in the engineer's office.

LIFE SAFETY HIGH RISE BUILDINGS

The term “life safety” refers to buildings constructed after 1975. These buildings have a higher standard than older buildings, and require a variety of fire protection systems and features because fire department ladders cannot reach occupants and upper levels of the building. All life safety High Rise buildings have the following components:

1. A Building Control Station
2. Standby power for emergency operation of life safety systems, essential lighting and one elevator in each bank. This is provided by an emergency generator.
3. A fire department communication system (emergency telephones that are usually colored red).
4. An emergency voice alarm signaling system.
5. A combined standpipe system.
6. An automatic sprinkler system with backup water supply and fire pump.
7. An automatic smoke control system (usually part of the building’s heating, ventilation, and air conditioning {HVAC} system).
8. Enclosed elevator lobbies.

SECTION 2. HIGH RISE BUILDING SYSTEMS

ACCESS AND EGRESS

Stairways and Fire Escapes

Every High Rise floor is provided with a minimum of two means of egress, one of which may be a fire escape in older buildings. New High Rises are required to have a minimum of two smoke-proof enclosures.

Types of Stairways

Interior stairways are divided into two classifications:

- Unenclosed-They do not have a fire rated separation from the building.
- Enclosed-They are separated from the building by rated construction-usually two hours.

Unenclosed stairs are problematic in a fire situation. Fire and heated gases will seek the highest level, and will advance to higher floors in a building, with the open stairway acting as a chimney in buildings where they exist. Older High Rises may have open stairs that connect all floors.

In modern High Rises, an open stair is only permitted between two adjacent floors. These are called access stairs (they are also known as 'tenant' or 'convenience' stairs). The stairs provide convenience for tenants traveling between two floors of a single business. The existence of access stairs on the floor of alarm must be identified and communicated for all operating units as their existence can create significant problems during fireground operations.

Rated stair enclosures are a firefighter's best friend, providing a safe haven to gain access to a fire floor, when doors are maintained in the closed position as designed.

Stairway Identification Signage

Stairways are required to have identification signage at every floor level. A 12" X 12" sign is required that includes:

- The stairway identification nomenclature (West, Stairway 1, etc.)
- Whether or not the stairway has roof access
- The floor level designation (4th, 8th, 27th, etc.)
- The top and bottom terminus of the stairway

Smokeproof Stairway Enclosures

In Life Safety Buildings, the stairwells are pressurized to keep them free of smoke coming from the fire floor. In order to prevent the smoke from getting into the stairwells and hampering evacuation or relocation operations, it is of utmost importance that stairway doors are not propped open by any means. Another attribute of this stairwell design is that it allows for the fire attack hose connection to be made from the vestibule on the fire floor. Before advancing a line from a Smokeproof Stairway Enclosure on to the fire floor, members must consider the location of the fire, the protective design of these stairways, and ensure that the designed protective features are intact and working properly.

There are four classifications of Smokeproof Stairway Enclosures:

1. **Type 1** - This type has an outside open air balcony area on each floor located between the stairway and the building proper.
2. **Type 2** - This type has a vestibule area on each floor between the stairway and the building proper. The vestibule has an opening to the outside air at each floor level.
3. **Type 3** - This type has a vestibule area on each floor between the stairway and the building proper. The vestibule has an opening at each level to a smoke venting shaft which opens to the outside air at the top of the building.
4. **Type 3 Mechanical** - This type has a vestibule area on each floor between the stairway and the building proper. Ventilation is obtained by means of the HVAC system through air ducts that are located in the vestibule. The lower vent is for air supply. The upper vent is for air exhaust.

DOORS

Stairway Doors Locked on the Stairway Side

Many buildings choose to restrict access into floor levels by locking the doors on the stairway side. In new buildings, a switch must be provided in the central control station that can unlock all locked stair doors simultaneously. Additionally, these doors must unlock when power fails. In many existing buildings, a key must be used to unlock these doors. The keys are kept in the central control station or at the guard's desk.

After entry is achieved, keeping the door from re-locking may be accomplished by using a piece of inner tube shaped to cover the door latch and attached to each door knob. A piece of duct tape can be used for the same purpose. If possible, you should never

prop a door in the open position; you will lose the integrity of the stairway shaft and allow smoke to enter.

Forcible entry through heavy stairway doors is usually a difficult task. If necessary, entry can sometimes be accomplished by punching through a sheet rock wall adjacent to the door.

Stairways are the firefighter's lifeline in the event of a High Rise fire. They are the only means of evacuation or relocation of occupants and they are the firefighter's primary means of access to the fire area. During a fire, stairways will be used by firefighters to carry equipment to the fire area. They will also be used in the event of building water supply failure, to lead a large line to the fire floor.

Locked Elevator Lobby Doors

Elevator lobby doors are often locked to prevent access by unauthorized personnel to the floor. These doors are supposed to unlock upon activation of the fire alarm system or power failure.

In addition to the above, locked elevator lobby doors are required to have a door releasing device within 5 ft. of the door. This device usually resembles a manual pull station or is a mushroom shaped button. Activation of the device should unlock the door allowing access.

Locked Exterior Doors

Many life safety buildings have their stairways exit the building onto the sidewalk at ground level without re-entering the building. Access can be obtained with a key, by forcible entry, or by gaining entry to the stairway at an upper floor level and walking down to the street exit door. **Gaining access to the stairwell doorway at ground level is a PRIORITY for the Lobby Control Unit Leader.** If elevators are unavailable, aerial ladders placed through second story windows could allow access by personnel to the stairways.

ELEVATORS

Types of Elevators

Hydraulic Elevators

Hydraulic elevators are powered by fluid under pressure in a hydraulic jack. This type of elevator is usually limited to travel of 6 floors or less, however they are often present in High Rise buildings to serve limited floors. Machine rooms for this type of elevator are usually at the bottom of the shaft.

Traction Elevators

This type of elevator is powered by an electric motor and employs a grooved traction drive sheave, over which pass suspension ropes that are attached to the car and counterweight. This type of elevator may be used in buildings of any height, and is the type commonly used in High Rise buildings. Machine rooms for this type of elevator are usually at the top of the shaft.

Modern elevators are operated by computers with micro processing chips. The microprocessor chips may be located in any of the following locations:

1. In elevator equipment rooms
2. On the operational panel of individual elevator cars.
3. At the roof area of individual elevator cars.

It is possible that the operation of SFFD portable radios near microprocessor chips could cause these elevators to malfunction. The below listed guidelines should be followed by members of the SFFD:

- Never operate portable radios in elevator equipment rooms. Most elevator equipment rooms are located above elevator shafts, although some are located at the bottom of shafts.
- Avoid the use of portable radios in elevators as much as possible. Utilize the elevator car emergency phone jack for communication. If it is necessary to use a portable radio in an elevator car, use it at or near the rear wall of the elevator car.

Destination Elevators

A new type of traction elevator is the state-of-the-art Destination Elevator. This is an elevator that requires the user to input the desired floor of destination into a key pad, rather than pressing an up or down button. A computer then tells the user which elevator to take. The system is more efficient because a computer sorts people by destination. In this type of elevator car, the user does not have buttons to push inside the elevator. When the elevator is put into Phase II, a panel opens automatically, exposing the usual elevator controls. If a firefighter were to accidentally close this door, it may be opened with an elevator key.

Machine Room-Less Elevators

This is another new type of traction elevator. There is no elevator machine room. Instead, the elevator machinery is located inside the elevator hoistway.

CONSTRUCTION

Elevator hoistway enclosure walls are normally fire partitions with a fire-resistant rating of two hours. In newer High Rise buildings, most elevators open into one-hour rated

elevator lobbies with smoke protected doors. Older buildings often do not have the protection of rated elevator lobbies. Use of these elevators in fire conditions is not recommended, and this is an example of why pre-fire planning is so important.

In High Rise office buildings, there will normally be many elevators serving various levels of the building. Usually they will be grouped into low, mid, and High Rise banks, each serving specified floors. For example, a 45 story office building may have a low-rise bank serving floors 1-15, a mid-rise bank, serving floors 16-30, and a High Rise bank serving floors 31-45. It is important to remember that floors can be accessed only by the bank that serves them. Additionally, there are blind shafts (no stopping at floors) in mid and High Rise banks between the lowest floor of access (usually the first floor) and the first floor that the elevator stops at. In the above example, the blind shaft would be from floors 1 to 15 for the mid-rise bank, and from floors 1 to 30 for the High Rise bank.

In residential buildings, or buildings with smaller occupant loads, there may be only elevators that serve every floor, without separate elevator banks for ranges of floors.

OPERATION

Firefighters are to use extreme caution when using elevators. If heat, smoke, or water enter the elevator shaft or machine room, the elevator may not be safe for use, and may behave erratically. If firefighters get stuck in an elevator car, they can become part of the problem instead of the solution. Valuable time is wasted rescuing firefighters trapped in elevators, allowing fires to gain momentum, and making them harder to control.

During a fire, elevators are to be used only with the permission of the Incident Commander. The policy of the SFFD is to direct firefighters to use elevators whose shafts do not penetrate within 2 floors of the incident or lowest level of alarm. Where a fire occurs in the mid or High Rise area of a building, firefighters could take a lower bank to its top floor, then crossover into a stairwell and walk the rest of the way to the Staging floor. This would keep them out of the shaft that penetrates the fire floor without having to walk 30 or 40 floors through the stairwell.

In buildings without multiple banks (most residential High Rises), extreme caution must be exercised by firefighters using elevators. Under no conditions are firefighters to use an elevator shaft that penetrates the fire floor without permission of the Incident Commander, and that will only be given after it has been determined that the shaft is safe. If there is smoke and/or water in an elevator shaft it should not be used. Smoke, heat, and water in the shaft or in the elevator machine room can cause an elevator to malfunction resulting in its getting stuck in the shaft or taking firefighters directly to the fire floor. The Truck Officer will monitor the fire alarm annunciator panel and maintain constant communication with the elevator operator to let him or her know if the elevator lobby or elevator machine room smoke detector has activated. If these detectors

activate, firefighters must immediately stop the elevator at the closest floor and disembark.

In newer buildings, elevator machine rooms are sprinklered. Where sprinklers are installed, a means of shunting power to the elevator prior to activation of the sprinkler heads is required. This is usually accomplished with a heat detector. **That means that if the heat detector in the elevator machine room activates while firefighters are using the elevator, power is shunted and the firefighter is trapped in the elevator wherever it is.** This is another good reason to exit the elevator immediately when the smoke detectors activate. Smoke detectors should activate before heat detectors, under normal conditions. Because machine rooms that serve the shaft can be up two floors above the reach of the elevator car, firefighters should use a shaft that does not penetrate two floors below the lowest level of alarm. For example, if the fire is on the 38th floor and the mid-rise bank of elevators goes from the 17th to the 34th floor, then firefighters should take the mid-rise bank, get off at the 34th floor and walk up to the 38th floor.

If using an elevator, they shall do so with no more than 6 equipped firefighters per car. A member of Lobby Control will be assigned to operate and monitor the shaft of the elevator throughout the duration of the incident. Upon delivering the firefighters to the required floor, the elevator operator shall immediately return to the lobby. It is crucial that the elevator is not taken upstairs and left there.

The elevator operator shall be equipped with:

- Full PPE with SCBA
- Spare 1 hour bottle
- H2O Extinguisher
- Radio
- Forcible entry tool

Always before going up in a High Rise elevator, the shaft should be checked for smoke, fire, or water and the car door operation tested:

- In the Lobby
- On the next floor up
- And every five floors there after.

If any smoke, fire or water is visible the elevator should be exited immediately. This is most important for the safety of firefighters because oftentimes where there is a lot of smoke there may be many phone calls saying that the fire is on the wrong floor. Elevators are a convenient resource during a High Rise fire but if not used properly they can be deadly.

One problem firefighters often face in High Rises is rescuing people trapped in elevators due to power failures or elevator malfunctions. If electrical power fails, many people could be trapped until the power is restored. In newer High Rise buildings, emergency power generators are required, which in the event of a power failure, automatically start and will supply enough power to bring all the elevators to the ground floor one at a time.

PHASE I – ELEVATOR RECALL

Elevators in San Francisco High Rises are capable of elevator recall. This function returns the elevator non-stop to the primary floor of recall either when smoke is detected in an elevator lobby, hoistway, or machine room, OR when a key activated switch is used by the fire department at the main floor.

The following features apply to elevators in Phase I:

1. They will not respond to a call from any of the floors.
2. Door re-opening devices for power-operated doors (electric eye) which are sensitive to products of combustion, heat or flame are rendered inoperative.
3. All car and corridor call buttons are rendered inoperative and call registered lanterns are extinguished and become inoperative.
4. A car stopped at a landing has its emergency stop switch rendered inoperative as soon as the doors are closed and it starts toward the main floor. Moving cars have their emergency stop switch rendered inoperative immediately.

The use of any elevator during a fire emergency or fire investigation requires that firefighters take control of the elevator using a key operated switch. Keys for the elevators are usually attached to firefighter phones that are found in the central control station or a phone cabinet where no central control station exists. They may be in a lock box in the elevator lobby.

If the elevators have been recalled automatically, firefighters should immediately be concerned about using the elevators at all. This means that smoke has activated the smoke detectors in either the elevator lobbies, the hoistway, or machine room. This could cause the elevator to behave erratically.

If the elevators have not been recalled, they must be recalled prior to SFFD use, by placing the key into the key slot on the main level adjacent to the elevator, and turning the key to the ON position. This action must be done even if the elevators are automatically recalled prior to using the elevators in Phase II.

Again, as a reminder, before using an elevator during the investigation of an alarm, the elevator shaft should be checked for fire, smoke, or water. If any of those three are present, the elevator shall not be used and the Incident Commander shall be notified. If

the shaft is clear, the elevator door shall be tested in the lobby, the next floor up and every 5 floors thereafter in Phase II. If it acts erratically, firefighters shall exit the car immediately.

During the investigation of an alarm, the elevator bank that served the floor of staging and the floor of alarm shall be recalled. When there is evidence of a working fire in the building, all elevators shall be recalled.

The recall switch has three positions:

- | | |
|---------------|--|
| OFF | The elevators are in normal operation |
| ON | This recalls elevators to the recall floor |
| BYPASS | The elevators are in normal operation but the elevator lobby smoke detectors are off-line. |

PHASE II – EMERGENCY OPERATION

After the elevators have been put into Phase 1, in order to operate, the elevator car must be put into Phase II. This is accomplished by removing the key from the key slot on the main level (while leaving it in the ON position) and turning the keyed slot IN THE ELEVATOR CAR to the ON position. The same keys are used for both slots. (This switch is not required in elevators that travel less than 70 feet.)

IMPORTANT: ELEVATORS THAT LACK THE PHASE II SWITCH SHALL NOT BE USED DURING A FIRE EMERGENCY OR DURING THE INVESTIGATION OF A FIRE WITHOUT THE PERMISSION OF THE INCIDENT COMMANDER.

The following features apply to an elevator in Phase II Operation:

1. An elevator shall be operable only by a person in the elevator.
2. Elevators shall not respond to elevator corridor calls.
3. The opening of power-operated doors shall be controlled only by continuous pressure “Door Open” buttons or switches. If the switch or button is released prior to the doors reaching the fully open position, the doors will automatically re-close. Open doors will be closed by registration of a car call or by pressure on “Door close” switch or button.
4. The car will stay on emergency service as long as the car key is in the on position even though the main floor key-operated switch is returned to its off position. This allows the fire department to return other elevators to normal operation while keeping one elevator in Phase II.
5. The emergency stop switch is rendered inoperative.

It has happened that firefighters have reached a floor, pressed the “Door Open” button and then exited the car before the door had completely opened. The elevator door then closed behind them and locked them out of it. As a result, **the elevator is lost to the firefighters and must be retrieved by an elevator mechanic!**

Exiting from elevator cars at floor landings requires the operation of two sets of doors. There are the doors for the elevator shaft, which are off the elevator lobby and also a set of doors for the elevator car. This is important for firefighters to remember in case they ever get stuck in an elevator car.

When an elevator car is stopped, some older elevator doors can be opened from the inside by manually pulling the doors apart. If the elevator car is stuck in the shaft but is near a landing, pulling the inside doors apart should also open the shaft or outside doors. This will allow the occupants to exit the elevator at the nearest landing.

When an elevator car is stopped in the shaft away from a landing, older elevator shaft doors can be opened by tripping a latch that is usually located at the top of that door. Firefighters choosing to do this must exercise caution. A number of people have lost their lives when trying to exit an elevator whose car was in between floors by falling down into the shaft below the car. Newer elevators have door restrictors that prevent anyone from opening the door from the inside. If you are trapped in a newer elevator during fire operations and the car is more than eighteen inches away from the landing, the only way to rescue yourself is to force open the locked access panel at the top of the car (sometimes above a false ceiling) as these door restrictors will make it impossible for you to open the doors from the inside. The first firefighter to go onto the top of the car **must engage the stop switch to kill power to the car (extremely important)**. Members can then locate the nearest floor door and trip the interlock to exit onto the floor.

Fire personnel in the BCS should be able to see where a car is located on the elevator panel in the room. If firefighters are trapped in the elevator, efforts must immediately shift to their rescue.

FIRE EXTINGUISHING SYSTEMS

STANDPIPE SYSTEMS

A standpipe system is an arrangement of piping, valves, hose connections, and allied equipment designed to provide water at specified pressures for firefighting purposes. These systems eliminate the exhausting and time-consuming hose leads which would have to be made between the ground floor and other floors of the building involved in fire emergencies. Standpipes are required in all High Rise buildings.

Fire department standpipe inlet connections should be designated by a sign. The sign should have raised letters at least one inch in size, cast on a plate or fitting and reading STANDPIPE.

- On Class I standpipes, the sign will read: DRY STANDPIPE
- On Class III standpipes, the sign will read: COMBINATION STANDPIPE
- A combined system will read: STANDPIPE AUTOSPRINKLER

NOTE: A Class II system is a wet system consisting of small hose line designed primarily for occupant use. Generally, it is supplied by the domestic water supply.

Standpipe systems are divided into four classifications: Class I, Class II, Class III, and combined.

Class I Standpipes (Dry)

A Class I standpipe system is a dry system without a direct, permanent connection to a water supply and is equipped with 3" outlets for fire department use. A water supply to the system is obtained by making a hose connection from an engine company to the 3" Fire Department standpipe Connection (FDC), which is located at street level and usually at the front of the building or near the fire escape.

It is possible that a building may be equipped with one or more Class I Standpipes. Older installations allowed each standpipe riser to be independent of the other and each riser was supplied separately by the use of an FDC at the base of the riser. Caution should be used to make sure that the FDC that is supplied is connected to the outlet that is being used. Some Class I systems are color coded. The FDC may be colored the same as the riser it serves. The Incident Commander shall make sure that the proper standpipe riser is supplied with water. Newer installations of multiple Class I Standpipes within a building require that all such standpipe risers be interconnected at the base. Each riser has an FDC and firefighters are capable of supplying water to all risers and outlets because of the riser interconnection.

Some standpipes in the Class I category are manual wet standpipes, meaning that there is water in the pipe, but the system requires the charging of the FDC by the Fire Department to obtain the required flow and pressure necessary at the upper levels of the building.

Class II Standpipes (Wet)

A Class II Standpipe System is a wet system directly connected to a water supply and only equipped with 1-1/2" control valves intended for use by building occupants. Attached to each outlet is 75' or 100' of 1-1/2" hose equipped with a nozzle. The nozzle may or may not have a shutoff. The outlet, hose, and nozzle are usually located in a cabinet on each floor of the building (both above and below grade). The hose cabinets are spaced in order that no area on any floor is beyond 130' of a cabinet. The water supply to Class II Standpipe Systems may come directly from the city water system, a

roof tank, or a pressure tank. Class II Systems installed after 1983 are required to provide 100 gallons per minute at 65 PSI. Systems installed between 1965 and 1983 were required to be able to supply 35 GPM at the top two outlets at a pressure of 25 PSI. Prior to 1965, the only requirement was 25 PSI at the top outlet. Many older Class II Systems rely on roof tanks for their water supply. These tanks only provide a marginal supply of water pressure to the upper floors. In fact, some of these systems have been found to have only a few pounds of water pressure at these levels.

Class III Standpipes (Combination)

A Class III Standpipe System is a wet standpipe system directly connected to the City's domestic water supply system and the system water pressure is usually augmented with a building fire pump which is an integral part of the Class III System. It is equipped with 1-1/2" outlets intended for use by building occupants and 3" outlets intended for use by the Fire Department. The 3" and 1-1/2" outlets are the same as those previously described in the section on Class I and Class II Standpipe Systems. A Class III Standpipe System must have an FDC. San Francisco Fire Department standard operating procedure is for "dry hose leads" to be made into the FDC. Hose leads to a Class III Standpipe System FDC should be charged only on the orders of the incident Commander.

Class IV Standpipes (Combined)

A Combined Standpipe System is a wet system in which the piping and the water supply thereto serve both the 3" outlets for Fire Department use and the building automatic sprinkler system. The water supply for the Combined Standpipe System comes directly from the City's domestic water supply and the system pressure is usually augmented by a fire pump.

The 3" outlets are usually located in enclosed stairways or in vestibules of smokeproof enclosures. The 3" caps on many of these outlets contain 1-1/2" male NST with cap attached. SFFD standard operating procedure is to connect an 'officer's wye' to the 3" outlet for possible attachment of two 1-3/4" hose leads.

All life-safety High Rise buildings (those built after 1975) are equipped with a combined standpipe system. Most existing High Rises contain a Class III system. Many existing High Rises are converting to a Combined system. As the conversion occurs, many Class II hose cabinets have been removed.

A Combined Standpipe System must have an FDC. SFFD standard operating procedure is for dry hose leads to be made to the FDC immediately. When a working fire is detected, and upon permission from the IC, the FDC should be charged to 150 psi (NFPA 13E, Section 2-3.4).

STANDPIPE OUTLET PRESSURES

Members of the Department could encounter wet standpipes in which water pressures **may be either extremely high or extremely low**. The intent of this section is to inform members of this fact and to explain various ways these problems may be eliminated.

The water pressure at a Class I Standpipe System outlet is directly related to the pump pressure of the SFFD apparatus that is supplying water to the standpipe and losses that occur in the system due to elevation and friction loss. Sound pumping practices and/or good communications between the personnel near the hoselines and the pump operator should produce the proper standpipe outlet pressure.

A problem that occurs in many older buildings in which Class II Standpipe Systems are installed is that the water in the standpipe system is at a very low operating pressure. This is especially true of the system outlets located on the upper floors of these buildings. It must be remembered that the hose and nozzles installed in a Class II Standpipe System are primarily intended for use by building occupants as a first aid measure against a building fire discovered in its initial phase. However, there are times when it is expedient for firefighters to utilize them. Although such use by firefighters may occur, the SFFD standard operating procedure is to disconnect the building hose and connect SFFD hose to the outlet. Whenever possible, a primary lead should be made from a 3" standpipe outlet located in the building stairwell (if present) or from some other source.

Standpipe systems installed in High Rise buildings (Class III Combination or Class IV Combined systems) may present a problem of too much pressure at standpipe outlets. This is especially true at the outlets located on the lower floors of the standpipe pressure zone. Installation standards require standpipes in High Rise buildings to deliver at least 500 GPM at 65 PSI at the topmost outlet. A friction loss of 5 pounds per floor within standpipe systems must be overcome in order to provide this pressure and flow standard. Therefore, for a 15 story building, pressures on the lowest floors can exceed 140 PSI with 500 to 700 GPM flowing. In a 30 story building the outlet pressure on the lower floors might exceed 225 PSI .

Installation standards also require that hose outlet pressures should not exceed 125 PSI under a flowing condition and 150 PSI under static conditions. To comply with this requirement, pressure reductions must be obtained at lower outlets. This is accomplished either by using Pressure Reducing Valves (PRVs) or Restricted Orifice Plates (ROPs). All after 1975 have utilized PRVs exclusively. Prior installations normally utilize ROPs.

PRVs are valves into which a pressure reducing device is integrally incorporated. These valves have an internal spring and diaphragm mechanism that, based upon a pre-determined setting, reduces the pressure under both flow and no flow conditions. A label identifying these devices as PRVs is attached to these standpipe outlet control valves.

The PRVs are usually set at the factory. When operating properly, these valves should provide 100-125 psi with 250 GPM flowing, or 150 psi static pressure. Testing has shown that some valves do not operate as intended, either due to an improper setting or a malfunctioning mechanism. If an outlet with a PRV does not produce enough waterflow, firefighters should update Command and request the use of a 2 ½" hose lead with an inline pressure gauge. If it produces too much pressure, the pressure can be regulated manually by manipulating the shut-off valve.

Restricted Orifice Plates (ROPs) are circular plates with a center hole. The size of the orifice hole is based upon the pressure at the standpipe outlet. ROPs are supposed to be installed in the female inlet of the standpipe outlet valve. ROPs reduce pressure under flow conditions by creating excessive friction. The inherent problem with ROPs is that when the nozzle is shut down, full standpipe pressure is realized in the hose.

When using standpipes with ROPs, the flow of water should be controlled, if possible, by use of the standpipe outlet control valve, not by use of the nozzle shut-offs. In many cases where pressure reduction is needed at the hose cabinet outlet, it is obtained by placing a ROP into the female fitting of the hose (house line) and attaching it to the outlet valve. Because it is standard guideline for members of this Department to disconnect the house line from the outlet and replace it with SFFD hose, the means of pressure reduction is lost in these cases.

When firefighters remove house lines they should check for ROPs. If one is found they can expect excess pressure at this particular outlet valve. Pressure reduction can be accomplished by manipulating the standpipe outlet valve.

Company Officers and members should be familiar with the standpipe systems in their first alarm areas. Surveys of the different systems should be arranged through the battalion chief of the district involved. If the building fire pumps fail, the IC should consider engine companies pumping in tandem. This may be the only way to assure adequate pressure to the upper stories.

SPRINKLER SYSTEMS

Unfortunately, not all older High Rise buildings are fully sprinklered. This is a big concern because a fire that grows unchecked in a High Rise until firefighters can reach upper levels can grow to be a large fire before they arrive at the fire floor. Not only is this a tough fire to fight, since exterior firefighting is not possible in most cases, the occupants of the building (especially those above the fire) are extremely vulnerable.

All sprinklered buildings have a main sprinkler control valve and a main sprinkler drain valve. It is usually preferable to shut down a section of a building's sprinkler system rather than the entire system. This is because when you shut down the entire system, the whole building is unprotected until the sprinkler system is turned back on. In

addition, if you drain the entire system, the amount of water that is wasted is greater and the time involved in the draining is also longer, as well as the time it takes to refill the system.

Do not forget to close the drain of systems when putting the system back in service, otherwise uncontrolled water will flood the basement of the building, possibly causing extensive flooding damage.

Sprinklered buildings usually have floor control valves and drain valves in both stairways or vestibules at each floor level. Shutdown of the sprinkler system for a floor will often require the operation of two or more floor control valves. There is usually one drain valve for each floor.

When replacing sprinkler heads that have activated, firefighters should make every effort to use the exact type of sprinkler that was activated. Sprinklers are now identified with a SIN# (sprinkler identification number) that can be used to insure that the proper sprinkler is selected. If the same type of sprinkler is not available, the building owner shall be notified to contact the sprinkler contractor for proper replacement. At least 6 sprinkler heads of each type used in the building are supposed to be on hand for this occasion in a spare sprinkler cabinet.

PRE-ACTION SPRINKLER SYSTEMS

Pre-action systems are often used when damage from water would be a concern. This is a dry-pipe system that requires the activation of a detection system prior to the introduction of water into the piping. These systems should be put back into service by a licensed contractor after activation.

SPECIAL EXTINGUISHING SYSTEMS

Some special areas of buildings are protected with special extinguishing systems. Halon, carbon dioxide, FM-200, and Energen are common agents. Check with the building engineer when dealing with these types of systems. The Building Emergency Manual may contain information on how to deal with them. The most important thing to remember is that some of these agents displace air, and if the agent has been released into these rooms, then Scott AirPaks shall be worn.

VENTILATION

There is a section in the Ventilation Manual that covers High Rise Ventilation in detail.

SMOKE MOVEMENT IN BUILDINGS

Smoke movement in buildings is a complex problem which all officers and firefighters should be aware of. The safety of both the building occupants and of the firefighters

and the determination of necessary tactics along with the proper allocation of resources are directly affected by the movement of smoke in buildings.

Briefly stated, the movement of smoke throughout a High Rise is influenced by both active and passive factors.

Active Factors:

- Thermal energy - Which causes the gases in the vicinity of the fire to expand, rise, and move away from the fire area
- Stack effect – The vertical natural air movement through a building caused by the differences in temperature and densities between the inside air and the outside air
- Wind - Depending upon its severity, it can have a major effect on ventilation in a High Rise
- Heating, Ventilation, and Air Conditioning Systems – Can limit the spread of smoke throughout the building and improve conditions for firefighters; however, they can also negatively influence a fire and cause problems for firefighters
- Smoke Control Systems – A properly designed smoke control system can prevent the movement of smoke beyond the smoke zone of fire origin - newer buildings should be expected to have this capability

Passive Factors:

- Building geometry (height, area, spatial characteristics)
- Barriers (partitions, walls, doors, floors)
- Shafts (stairs, elevators, smoke, utilities)

Smoke control systems in newer life safety buildings operate automatically when a building goes into alarm. Typically, the floor of alarm goes negative in relation to the floors above and below, to contain the smoke. In addition, stair enclosures pressurize to keep smoke out of them.

Building engineers are usually knowledgeable about the operation of the smoke control system in the building, and their knowledge should be utilized by the Fire Department.

In new High Rises, the smoke control system should be allowed to operate without interference. If override is necessary for some reason, an override panel is provided in the central control station. The panel is graphically designed for ease of use. Even with graphic panels, override can be a daunting task.

Smoke removal in a building with pressurized stairs after a fire is out:

- On the stair that goes to the roof: turn off the stair pressurization fan
- Prop open the door to the floor in question and the door to the roof

- For the other stair, leave the stair pressurization fan on
- Prop open the door to the floor

In older smoke control buildings, controls are rarely easy to understand. If the system malfunctions and no engineer is available, it may be advisable to shut down the system altogether. If this occurs, alternate methods of ventilation will be necessary, such as breaking of windows, opening of roof and stairway doors, and portable fans. All aspects of the HVAC systems should be checked after a fire. Fire could extend from cracks or other defects in the ducts.

WINDOWS

The windows in most High Rise buildings are plate glass. When broken they can fall in sheets or large pieces and cause major injury and damage on the street below.

There are some High Rises that have a combination of plate glass and tempered glass windows. The tempered glass will shatter into small pieces when broken, and are provided so that firefighters can break them out as a means of ventilation. Tempered glass windows are marked with a red reflective disc and are in the same vertical row on a building.

- a. If the disc is placed on the interior side of the glass it is at least 1-1/2" in diameter and is installed within a 6" square in the lower left-hand corner of the pane.
- b. If placed on the exterior, it is at least 3" in diameter and is installed below the lowest window in each vertical line of windows containing tempered glass. If windows have to be broken for ventilation at a fire, it is preferable to break tempered ones. However, at no time should windows be broken without permission of the Incident Commander so that the street area may be cleared first. Additionally, firefighters breaking windows in High Rises should always be tied off, due to the excessive winds and airflows that can be encountered in the upper levels of High Rise buildings.

FIREFIGHTER RESCUE AIR SYSTEMS

A few of the newest High Rise buildings in San Francisco are equipped with a system whereby firefighters may fill their air bottles at the upper levels of a building. Either Mobile Air One supplies pressurized air to the system or, in buildings 15 stories and above, a cascade system is provided to automatically supply air to the system. Fill stations are located at every third floor level, within 5' of the stairway, starting at floor 3.

BUILDING CONTROL STATION (BCS)

In life safety buildings, the BCS is the focal point for fire department operations. It is usually located near the entrance of the building near the elevators. The BCS contains the following components:

1. The voice alarm and public address system panels which are designed to allow SFFD personnel to communicate with individual floors, select groups of floors, or all floors at once. By code, a voice announcement by a fire department must override the audible fire alarm tone. The public address system is usually activated by depressing the control button(s) for the floor or floors you wish to communicate with, and then speaking into the microphone attached to the public address panel.
2. The Fire Department communications panel. The communications panel telephone is connected to phone jacks located in:
 - a) Elevators
 - b) Elevator lobbies
 - c) Emergency and standby power rooms
 - d) At entries into enclosed stairways
3. Fire alarm annunciator panels.
4. Annunciator visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air-handling systems = Smoke Control Panels.
6. Controls for unlocking all stairway doors simultaneously. Personnel assigned to the central control station shall operate this release until assured that SFFD personnel have gained entry onto floors.
7. Emergency and standby power status indicators.
8. A telephone for fire department use.
9. Fire pump status indicators.
10. Schematic building plans.

Often buildings contain an Emergency Operations Manual. Because there is no standard for this manual, the usefulness of each manual varies from building to building. A review of manuals from several of the downtown High Rises indicates that they contain the following information:

- Emergency telephone numbers for the engineering staff
- Floor diagrams showing stairwells

- Schematic drawings of the HVAC system
- HVAC control instructions
- Emergency evacuation plans for the building
- Relocation plans for building occupants

Although the basic operation of the systems in a BCS is similar to that in other buildings, SFFD personnel must be aware that there is no code that such rooms be identical. Pre-inspection of each building's facilities is the best way to gain knowledge of their various features.

FIRE ALARM SYSTEMS

Life Safety High Rises are required to have a voice notification system that is monitored by a central station monitoring company. The central station notifies SFFD dispatch by telephone of alarms and the building location. Fire alarm panels in life safety buildings are located in the BCS. In older buildings (existing) they may be located at the security console or other lobby areas. The alarm panel may indicate one or more of the following alarm causes:

- Waterflow
- Manual pull station activation
- Smoke or heat detector activation (general)
- Smoke detection in elevator lobby
- Smoke detection in elevator machine room
- Activation of a special extinguishing system (FM-200, Halon, pre-action, etc.)

FIRE ALARM PANELS

The design of alarm panels varies from building to building. However, they all will display the four categories listed above (water flow, smoke detection, pull station, special system). The status of an alarm panel is indicated by different colored lights:

- Green - Indicates that the alarm system is set and not in alarm.
- Red - Indicates that the system has been activated and is currently in alarm.
- Yellow - Indicates that the alarm system has a trouble condition (such as a short circuit) or that there is a supervisory signal (something in the system that requires correcting, such as a tamper switch for a sprinkler valve).

Usually High Rise building fire alarm annunciators will display the alarm type by floor, by device with an LED (light emitting diode) display. For example, the panel will have a light showing that the alarm is on the fourth floor, and the initiating device is a smoke detector.

One very important feature of newer fire alarm annunciator panels is that they display the smoke detectors for elevator lobbies and machine rooms separately from other

smoke detectors on the floor. This is a critical feature that all firefighters must learn to monitor carefully if the elevator in the building is to be used under fire conditions. This is discussed in the elevator section.

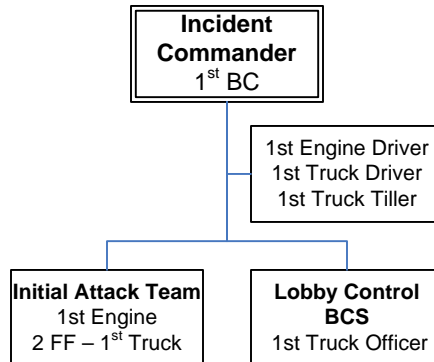
Some alarm panels are difficult to interpret. Some alarm panels also generate computer printouts, or display a digital readout (liquid crystal display) of the alarms that have been activated. These can be helpful in getting a definitive reading of the alarm involved.

SECTION 3. OPERATIONAL PROCEDURES

The High Rise Incident Command System will be instituted immediately upon arrival, will escalate as needed, and be adhered to throughout the event's duration.

BUILDING ALARMS

# of units Due	Engine	Truck	BC
Building Alarm	1	1	1



The **First Arriving Fire Company** will communicate on the command channel:

1. Unit designation
2. "On scene" arrival
3. Confirm address
4. Building and occupancy type
5. Approximate # of stories
6. Whether fire/smoke showing or under investigation
7. Call for additional resources as necessary

The **First Arriving Officer** will then:

1. Proceed to the BCS and gather initial information on alarm location and type
2. If either of the following conditions are met, then recommend to the BC an upgrade to a "**High Rise Full Box**" (Note: High Rise Full Box is different

SECTION 3. OPERATIONAL PROCEDURES

from a regular SFFD box. It consists of: 5 Engines, 3 Trucks, 4 BCs, 1 AC, 1 RS and 1 Medic Unit):

- a) more than one floor of alarm
 - b) more than one type of alarm (smoke, heat, water flow)
3. Always update the BC with situation and information found

The **Engine Officer** is responsible for the following:

1. Assembling engine members (minus drivers) and two members of the Truck with the following equipment:
 - a) The recommended hose selection:
 - i) 2 ½" for commercial occupancy with High Rise bag, or
 - ii) 1 ¾" for residential occupancy with officer's wye
 - iii) The engine officer may choose to use 2 ½" hose in residential if conditions merit
 - b) Rope Bag
 - c) "Irons" – Flat head axe and Halligan tool
 - d) Rabbet Tool
 - e) Ceiling hook
 - f) Thermal Imaging Camera (if available)
 - g) H2O extinguisher
2. Proceeding to the floor of alarm using elevator/stair procedures:
 - a) If the building engineer or other responsible building personnel say that the floor has been checked and everything is clear, then they may proceed by elevator to the floor of alarm for further investigation.
 - b) Without information from building personnel, the elevator must meet the following criteria:
 - i) The elevator shaft cannot penetrate within 2 floors of alarm floor
 - ii) The shaft must be checked for any signs of fire, smoke or water flow
 - iii) The doors must properly operate in Phase II in the lobby, the floor above the lobby, and checked every 5 floors thereafter
 - iv) If these conditions are not met, then the stairwell shall be used
 - v) The elevator, if used, shall take up to 6 firefighters (maximum) and their equipment to 2 floors below the lowest

floor of alarm - a firefighter will stay with the elevator while the rest of the crew proceeds to the floor of alarm to investigate

- c) Check the floor of alarm and update the BC on conditions. If any smoke or signs of fire are found then request for a High Rise Full Box or a High Rise Working Fire to Command.

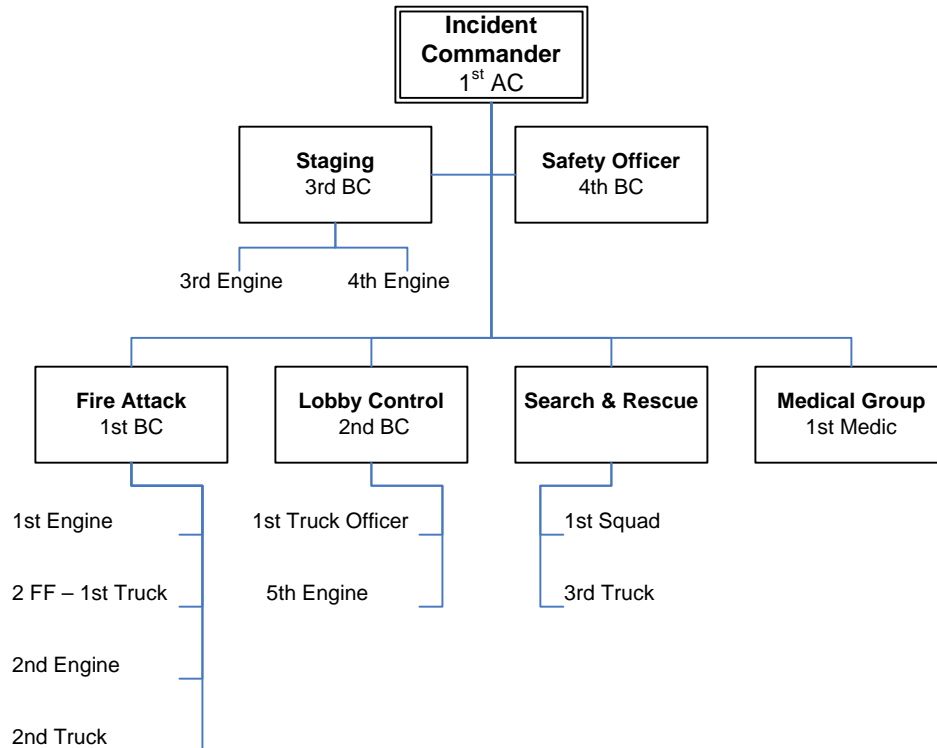
The **Truck Officer** is responsible for the following:

1. Proceeding to the BCS and monitor, silence and reset the Alarm Panel as necessary
2. Familiarize themselves with the following:
 - a) Obtaining the elevator recall keys and make sure elevators are placed in Phase 1
 - b) Obtaining the emergency red phones (if available)
 - c) Obtaining Building Keys
 - d) Obtaining phone number of the BCS and building engineer
 - e) How to operate the stairway door release as necessary
 - f) Verifying the floors are numbered consecutively
 - g) Locate a copy of the building's floor plans to determine:
 - i) Stairwell locations as well as smokeproof towers and access stairs on floors of alarm
 - ii) Which stairwells lead to roof and/or street level
 - iii) Standpipe/hose cabinet locations
 - iv) Utility shutoffs
 - v) Location of elevator machine rooms
 - h) Locate/communicate with the Building engineer to monitor effectiveness of HVAC system
3. Update the BC and Engine Officer of any changes
4. In a working fire, this position will become the **Systems Unit Leader**

The Battalion Chief, Drivers and Tiller will remain outside the building to utilize or move the truck or engine and assist the IC as needed. The Incident Scene Specialist (ISS), if available, shall remain with the Incident Commander. The drivers and tillers may later be assigned to the Lobby Control Unit if the incident escalates.

HIGH RISE FULL BOX (SIB/FIB)

# of units Due	Engine	Truck	BC	AC	RS	M
SIB/FIB Full Box	3	2	2	1	1	1
HR Full Box Upgrade	2	1	2	0	0	0
Total	5	3	4	1	1	1



Upgrading from a FIB/SIB Full Box to a “High Rise Full Box” (see definition under previous section “Building Alarms”):

While units are enroute to a Full Box the following criteria must be met and transmitted by the Department of Emergency Communications (DEC) (Comm Center);

1. Confirmation this is a High Rise building
- and
2. one of the following:
 - a) Building alarm and a phone call
 - b) Multiple Phone Calls
 - c) Multiple alarms (e.g. smoke, water flow, two floors)

Only the responding AC or BC may then upgrade to a High Rise Full Box

The **Initial Attack Group (called the "IAG")** is the First Arriving Fire Companies- 1st 2 Engines, 1st two members of the 1st Truck, entire 2nd Truck, and 1st BC)

The **First Arriving Fire Company** will communicate on the command channel:

3. Unit designation
4. "On scene" arrival
5. Confirm address
6. Building and occupancy type
7. Approximate # of stories
8. Whether fire/smoke showing, location/description of fire/smoke and/or under investigation
9. Call for a **High Rise Working Fire** (see next section for definition) and then a second alarm.
10. Special call for additional resources as necessary

The **First Arriving Officer** will then:

1. Proceed to the BCS and gather initial information on alarm location and type
2. Wait for the IAG to stage in the Lobby
3. Update the BC

The **First Arriving Truck Officer** is responsible for the following:

1. Proceeding to the BCS and monitor, silence and reset the Alarm Panel as necessary
2. Familiarize themselves with the following:
 - a) Obtaining the elevator recall keys and make sure elevators are placed in Phase 1
 - b) Obtaining the emergency red phones (if available)
 - c) Obtaining building keys
 - d) Obtaining phone number of the BCS and building engineer
 - e) How to operate the stairway door release as necessary
 - f) Verifying the floors are numbered consecutively
 - g) Locate a copy of the building's floor plans to determine:

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- i) Stairwell locations as well as smokeproof towers and access stairs on floors of alarm
 - ii) Standpipe/hose cabinet locations
 - iii) Utility shutoffs
 - iv) Location of elevator machine rooms
 - h) Locate/communicate with the Building engineer to monitor effectiveness of HVAC system
3. Update the BC and IAG of any changes

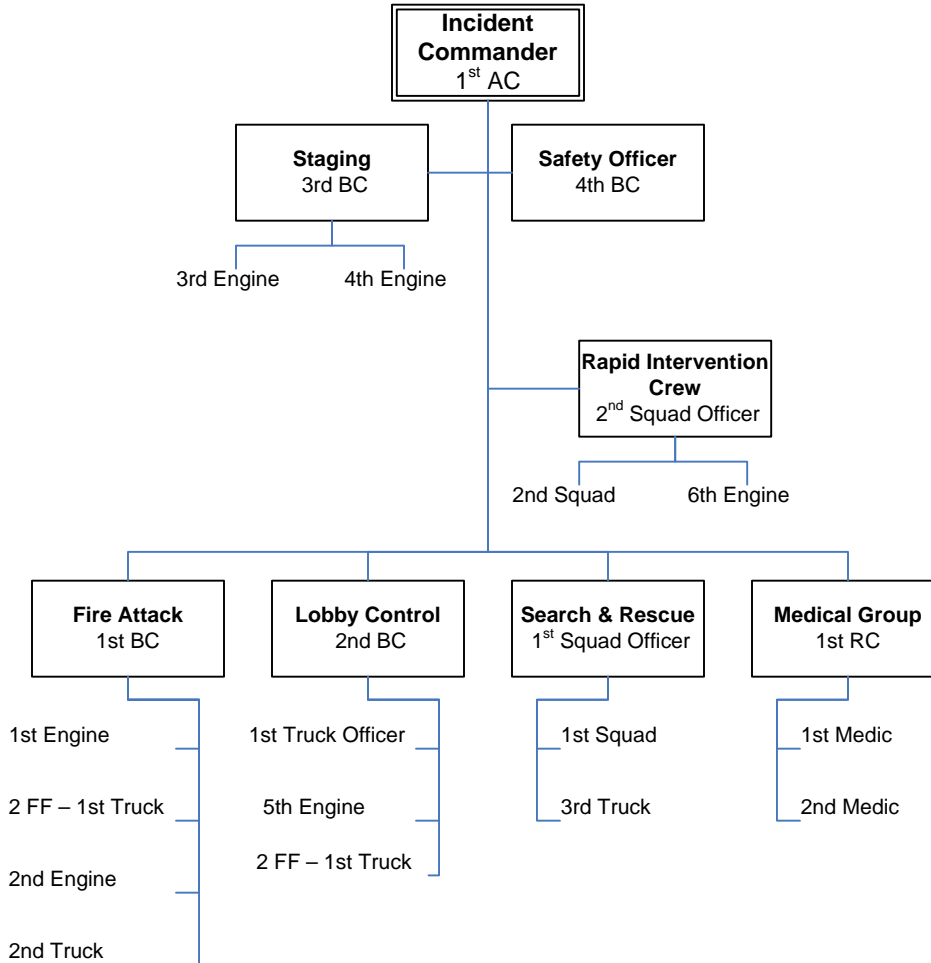
The **Fire Attack Chief** (first BC onscene) is responsible for the following:

1. Assembling the **Initial Attack Group** (IAG) consisting of two engine crews, two members of the 1st truck and the entire company of the 2nd truck with the minimum following equipment:
 - a) The proper hose selection:
 - i) 2 ½” for commercial occupancy with High Rise bag
 - ii) 1 ¾” for residential occupancy with officer’s wye
 - iii) The engine officer may choose to use 2 ½” hose in residential if conditions merit
 - b) Rope Bag
 - c) “Irons” – Flat head axe and Halligan tool
 - d) Rabbet Tool
 - e) Ceiling hook
 - f) Thermal Imaging Camera (TIC) (if available)
 - g) H2O extinguisher
2. Obtaining vital information from the Truck Officer in the BCS
3. Proceeding to the floor of alarm using elevator/stair procedures (as indicated in the Elevator Operations Section).
4. Check the floor of alarm and update the IC with new info
5. If there is a Working Fire, ensure the completion of the following:
 - a) Verification of the fire floor
 - b) Identify the Attack Stairwell
 - c) Identify the Staging Floor and establish communications with the **Staging Area Manager** once established
 - d) Supervise extinguishment operations and check for fire extension
 - e) Monitor smoke spread in stairwells and floors above

- f) Supervise all searches on fire floor and floor above
- g) Take actions to ventilate the incident considering all active and passive factors in a High Rise (refer to the SFFD Ventilation Manual)
- h) Monitor the safety of all personnel operating on the fire floor and one floor above
- i) Initiate salvage and overhaul operations
- j) Update the IC with conditions, actions taken, progress made and problems that need attention

HIGH RISE WORKING FIRE

# of units Due	Engine	Truck	BC	AC	RS	M	RC
HR Full Box	5	3	4	1	1	1	0
Working Fire Upgrade	1				1	1	1
Total	6	3	4	1	2	2	1



UPGRADING FROM A HIGH RISE FULL BOX TO A HIGH RISE WORKING FIRE:

If upon arrival it is found that there is a working fire then a **High Rise Working Fire** is to be declared. (A working fire in a High Rise will also require a **High Rise 2nd Alarm** to be requested). A visible working fire upon arrival will also require the first unit onscene assume and identify Command in their initial radio report.

A report of a Working Fire in a High Rise will get an additional Engine and Rescue Squad as the Rapid Intervention Crew (RIC), an additional Medic unit and a Rescue Captain.

LEADING HOSE LINES

The severity of the fire will dictate the number of hose lines needed for extinguishment. It is most important in the initial stages that hoses be led from only one stairwell with the second stairwell being used for rescue and evacuation. Before the fire attack stairwell door is opened to initiate extinguishment operations, it is imperative that the stairwell is clear of civilians above the fire floor. Once smoke is introduced into a stairwell, its use for rescue operations is negated. After rescue and evacuation operations have been completed, then lines can be led from both stairwells, if needed.

The Following Hose Lead Options are available:

OCCUPANCY	HOSE	FITTINGS	LOCATION
COMMERCIAL	2 ½"	HI RISE BAG	FLOOR BELOW
RESIDENTIAL	1 ¾"	OFFICER WYE	FLOOR OF, IF SAFE

The truck company, with a Thermal Imaging Camera (TIC), if available, will accompany the engine and pull ceilings as they go. This is necessary because fire can build up in the plenum (the false ceiling area above them) and if not checked, can get behind the firefighters and trap them. The truck company should also not open any doors that are hot or where smoke is puffing out unless a hose line is at the ready. In such cases doors should be opened cautiously. If entry into a fire room is not possible, firefighters may breach the wall next to the door or even from another room.

Officers should remember that because of compartmentation and partitions they can quickly find themselves in a position of having gone past the fire unknowingly and then having the fire surrounding them. While the line is being advanced, a complete check of all areas shall be required to prevent this. As soon as possible a second line should be led onto the fire floor. The situation will dictate how this is to be done. Placement of the second line may be used to:

- Backup or protect the first line
- Protect the search and evacuation of the fire floor
- Contain and confine fire spread and/or prevent the fire from wrapping around the core and endangering the operation of the first line

Once an initial line is led from the floor below* protecting egress and serving as a path to safety for retreating firefighters, a second line can be led from the fire floor or floor below as conditions allow. (*see Section 1, page 14, "Smokeproof Stairway Enclosures")

If a third line is led to the fire floor it can come from the standpipe two floors below the fire or from an additional stairwell. The third line can backup the first two or it can go in

the opposite direction to prevent the wraparound effect (wraparound is something that must be guarded against by the IAG). This, however, must be a very coordinated attack because of the inherent danger of having hose lines oppose each other. Firefighters must work together to push the fire out of the building in the same direction.

LOBBY CONTROL

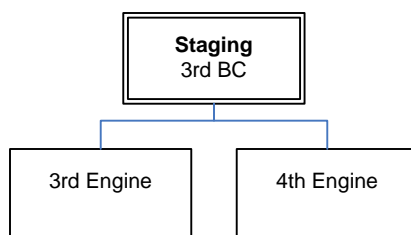
The **2nd Onscene BC** will become the **Lobby Control Unit Leader**. The **first arriving Truck Officer** will proceed to the BCS or FCR to initiate control of the building systems. The driver and tiller of the first truck, if aerial is not used, shall report to Lobby Control Unit and assist as needed.

The **Lobby Control Unit Leader** will ensure the completion of the following:

1. Receive a situation briefing from the Incident Commander or Logistics Section Chief.
2. Assess situation and establish Lobby Control position.
3. Determine Communications Procedures.
4. Establish entry/exit control at all building access points.
5. Establish personnel accounting system for personnel entering/exiting building
6. Assume control of elevators and provide operators.
7. Assign members to perform basic systems monitoring and control functions and to assist at the Building Control Station.
8. Contact Building Engineer to assist with:
 - a) Fire Alarm Panel
 - b) Phone Systems
 - c) Elevator Status
 - d) HVAC System
 - e) Stairwell Doors
 - f) Water Supply Systems
 - g) Public Address System
9. Provide briefings and information to the Incident Command Post.
10. Direct personnel to appropriate stairways/elevator for assignment (fire attack, evacuation, resource movement). Maintain, issue, retrieve keys & Firefighter phones as necessary. Direct evacuees and exiting personnel to safe areas or routes from the building.
11. Maintain unit records and log of activities.

STAGING

ICS	Engine	Truck	BC	AC	RS	M	RC
WFHR 1 st Alarm	6	3	4	1	2	2	1
Fire Attack	2	1 ½	1				
Lobby Control	1	½	1				
Staging	2		1			1	
Remaining	1	1	1	1	2	1	1



The **3rd Onscene Battalion Chief** shall become the **Staging Area Manager** and is responsible for the management of all functions at the Staging Area, and reports to the Incident Commander or Operations Section Chief. The organizational responsibilities vary from the standardized ICS position in that the Staging Area also provides:

- A safe refuge/support function, within the building
- An air cylinder exchange
- A medical/rehabilitation function for incident personnel

The **Staging Area Manager** is responsible for the following:

1. Receive a situation briefing from the Incident Commander/Operations Chief.
2. Establish Communications link with IC and/or Operations. Advise when staging area is operational.
3. Locate, prepare and identify with the Staging Engine Officer and company (the 7th Engine onscene – due in the 2nd alarm) the Staging Area layout:
 - a) Attack and Evacuation Stairwells
 - b) Equipment Staging (fresh SCBA bottles, equipment, hoses, etc.)
 - c) Officer staging
 - d) Company Staging (fresh companies and R & R Companies)
 - e) Empty SCBA drop off, refilling station and used equipment
 - f) Hydration and O2 Station for rehab of FFs

SECTION 3. OPERATIONAL PROCEDURES

- g) Rest and Recovery (R&R) Station for Medical Monitoring (HR and BP)
- 4. Establish Crew Accountability System (Fire crews kept at Staging until assigned)
- 5. Maintain level of resources as directed by IC/Ops
- 6. Coordinate with Logistics/Base when ordering resources to Staging
- 7. Establish a plan for the storage, refill and replacement of SCBAs using one or more of the following:
 - a) If present: Firefighter Air Rescue System (found every 3 floors in the hallway of building, within 5' of stairwell door)
 - b) Extend hose line from Mobile Air One (MA1) to upper floor (max = 30 floors) as well as certified fill containment enclosure (100 lbs.)
 - c) Empty and full bottle stations (bottles transported for refill by Ground Support Group to refill station or MA1; coordinated with Lobby Control Unit)
- 8. Provide medical care to firefighter(s)/civilian(s) as required
- 9. Establish Rest and Rehab area with Staging Medic unit
- 10. Maintain log of activities; resources reporting; orders received (document crews/equipment coming from Lobby to Staging, Staging to Fire Attack, Staging to other resources and times of deployment).

The 3rd and 4th Engine companies are assigned to Fire Attack but will remain in Staging until needed to relieve the initial Fire Attack companies. The 2nd in Ambulance will proceed to Staging and will be assigned to the Medical Unit – Rehab and First Aid for suppression personnel.

SEARCH AND RESCUE

ICS	Engine	Truck	BC	AC	RS	M	RC
WFHR 1 st Alarm	6	3	4	1	2	2	1
Fire Attack	2	1 ½	1				
Lobby Control	1	1/2	1				
Staging	2		1			1	
S & R		1			1		
Remaining	0	0	1		0	1	1

The 1st Due Rescue Squad and 3rd Due Truck will form a Search and Rescue Group and divide into teams as the situation dictates. The S&R group shall stage in the lobby before going up to the fire floor.

The Rescue Group Supervisor (the Rescue Squad Officer) will ensure the completion of the following:

1. That Search and Rescue personnel are equipped with:
 - a) Thermal Imaging Cameras
 - b) Rescue/Search ropes
 - c) Halligan/Flat head axes
2. Coordinate Primary search with Truck Officer and crew for location and conditions of fire, smoke, heat and trapped occupants in the following areas:
 - a) Fire floor
 - b) Floor above the fire (requesting a hose line in place as necessary)
 - c) Attack stairwell
3. Report extent of evacuation and conditions of fire attack stairwell
4. Determine if trapped occupants are ambulatory and whether to evacuate or shelter in place
5. Request from the IC for additional units to complete tasks

High Rise Evacuation And Search And Rescue Procedures

The time of day will be a factor in the number of people in a High Rise. Because of this there are three concepts of rescue/evacuation in a High Rise:

- Evacuation to a place of safe refuge
- Shelter in place
- Total evacuation

During hours of high occupancy, it will be necessary to establish safe refuge areas - any point within the building that is out of the danger area. In addition, it will also be necessary to identify evacuation areas – floors within the building that require evacuation.

Generally, in commercial High Rise buildings, the Incident Commander should consider the **Three Floor Rule**:

- Evacuating the fire floor and the 3 floors **directly** above, and below
- Shelter in place for occupants **more than** 3 floors above and 3 floors below the fire floor
- Evacuating the **top** 3 floors of a High Rise building due to the possible accumulation of smoke and combustible gases

For residential High Rise buildings, the IC can consider having occupants shelter in place due to most building's compartmentalized features. The decision by the IC to evacuate occupants or shelter them in place must take into account accurate and reliable information of fire conditions on the fire floor and floors above.

Occupants of High Rise buildings should all be instructed of this concept. When available, a public address system should be used to direct the evacuation/relocation of occupants. Of utmost importance is the need to direct occupants to the evacuation stairwells (any non-fire attack stairwell). The evacuation of occupants should only require direction from SFFD personnel, with little or no hands-on assistance. If it becomes necessary to rescue people on floors above the fire, they will be relocated to any safe area (preferably below the fire). The situation will dictate where they go. Ideally, the majority of people will only have to be relocated, not evacuated; however, human nature will compel people to leave the building on their own. Under these conditions, there may be some people who become trapped. Consequently, primary and secondary searches (with potential rescues) must always be performed.

Primary Search: Quick searches of all areas affected by fire and smoke that can be entered to verify the evacuation of all occupants.

Secondary Search: A thorough search of the entire fire area after the fire is controlled and ventilation completed.

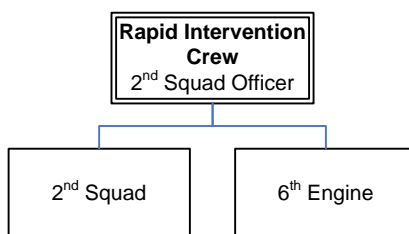
Search firefighters should work in pairs and check the areas closest to the fire first, then cover the areas above the fire where smoke was heaviest, and conclude with the attack stairwell. All evacuations are to be done via stairwells, which is why only one attack stairwell can be used for firefighting until all rescues/evacuations/relocations are made.

Doors to stairwells should not be propped open because this will defeat the benefits of pressurization from the HVAC system and will contribute to smoke extension and hasten the contamination of stairwells. In the case of the entry point at the fire floor, the door should only be open the width of the hose to minimize smoke flowing into the stairwell.

All rooms, closets and closed areas should be inspected. Elevator lobbies should be checked because some people will run to the elevator in a panic and may be overcome by smoke. If an elevator shows up on the panel in the Building Control Station as stalled between floors, it should be checked to see if people are stuck in it. Once a room has been checked the officer should mark the door with an X and his company number, e.g., X E4. Firefighters, when conducting rescue operations, should always have an escape route planned and if necessary use a rope secured from their point of origin as guide. Finally, any occupants brought down to the ground floor should not be led outside of the building if they are going to be in an area where they could get hit by flying glass.

RAPID INTERVENTION CREW (RIC)

ICS	Engine	Truck	BC	AC	RS	M	RC
WFHR 1 st Alarm	6	3	4	1	2	2	1
Fire Attack	2	1 ½	1				
Lobby Control	1	1/2	1				
Staging	2		1			1	
S & R		1			1		
RIC	1				1		
Remaining	0	0	1		0	1	1



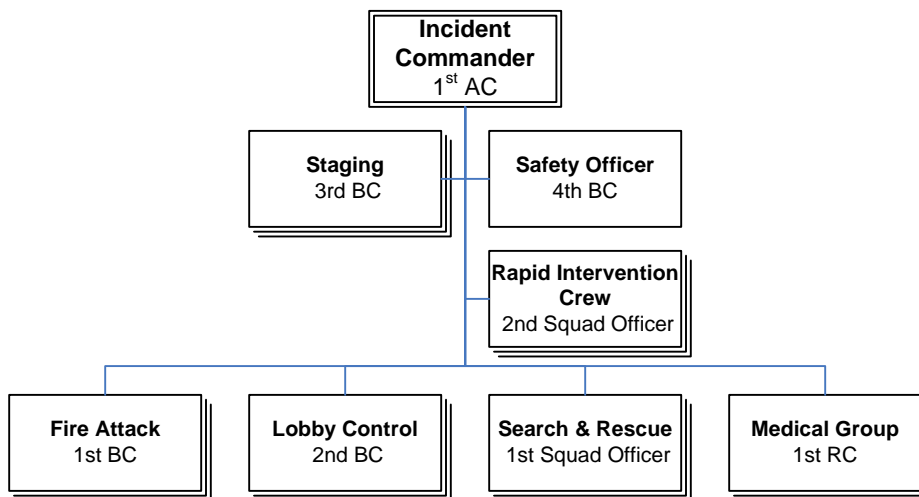
The **Officer of the 2nd Due Rescue Squad** shall become the **Rapid Intervention Crew Supervisor** (RIC Supervisor) and shall locate on the floor below the fire and report to the Incident Commander or the Operations Section Chief. The **6th due Engine** reports to the RIC Supervisor.

The RIC Supervisor is responsible for the following:

1. Conduct a size up of the exterior of the building
2. Report in to the IC and proceed to the floor below the fire with the following equipment:
 - a) Extra SCBA (complete)
 - b) Additional 2 ½" hose packs
 - c) Utility and Search ropes
 - d) "Irons"
 - e) Thermal Imaging Cameras
 - f) Extra 1-hr. air bottles
3. Conduct size-up of floor below gathering info on stairwells (evac, attack, access, smoketower), standpipes, length of floor, location of fire and crews
4. Preplan communications to locate trapped firefighters in a RIC incident
5. Monitor time of firefighting operations and update plans accordingly

COMMAND AND COMMAND STAFF

ICS	Engine	Truck	BC	AC	RS	M	RC
WFHR 1 st Alarm	6	3	4	1	1	2	1
Fire Attack	2	1 ½	1				
Lobby Control	1	½	1				
Staging	2		1				
RIC	1				1		
S & R		1			1		
Command			1	1		1	1
Remaining	0	0	0	0	0		



Incident Commander

The Incident Commander is responsible for the following:

1. Establish Command Post
2. Establish communications with the Lobby Control and Fire Attack and establish an initial Action Plan for the incident
3. Assess situation, determine scope of incident and prioritize the problem
4. Assign as needed:
 - a) Lobby Control operations
 - b) Fire Attack operations
 - c) Rescue and Evacuation operations
 - d) Forcible entry operations
 - e) Ventilation operations
 - f) Staging operations

- g) Salvage operations
 - h) Base area operations
 - i) Ground support operations
 - j) Medical treatment and triage needs
5. Request and release resources as necessary
 6. Direct activities and maintain communications with Command Staff, Operations, Logistics, and Plans

Safety Chief

4th Battalion Chief Onscene will be the designated **Safety Officer**

The Incident Safety Officer is a member of the Command Staff and reports directly to the Incident Commander. The Safety Officer is responsible for monitoring and assessing hazardous and unsafe situations and developing measures for assuring personnel safety. The Safety Officer will correct unsafe acts or conditions through the regular line of authority. The Incident Safety Officer or his or her assistants have emergency authority to alter, suspend or terminate unsafe acts or conditions when imminent danger is involved.

When the position is activated, the Safety Officer is responsible for and will do the following:

1. Receive a briefing from the Incident Commander.
2. Don full protective equipment and portable radio.
3. Assess situation/ observe overall scene.
4. Identify hazardous and/or unsafe conditions that are associated with the incident.
5. Identify potentially hazardous situations that may develop.
6. Determine need for Assistant Safety Officers and review Incident Action Plan (IAP) if available.
7. Keep all personnel informed of existing and potential hazards.
8. Correct unsafe acts or conditions. Assure proper use of safety equipment. Use emergency authority if required.
9. Participate in planning meetings.
10. Insure personnel accountability system is implemented.
11. Investigate accidents that have occurred within the incident area.

12. Brief IC on regular basis on all issues involving health and safety and his/her actions.

Medical Group

The **1st Medic Unit (Ambulance) Onscene** and **1st RC Onscene** will form the **Medical Group**.

The 1st onscene RC is the **MEDICAL GROUP SUPERVISOR (MGS)**.

The **Medical Group Supervisor** is responsible for the **Medical Group**:

1. Report to IC in full PPE, bring MCI bag and boards
2. Receive report from first-in Ambulance and assume MGS
3. Coordinate assignments of arriving ambulances
4. Consider the need for a Yellow or Red Alert
5. If a third alarm is struck, declare a Yellow or Red Alert
6. Obtain Medical Channel B15 through the IC to DEC (Comm Center)
7. Ensure all responding ambulance paramedics and EMTs switch to B15 for communications
8. Determine what additional resources are required and request through IC (consider additional resources for: manpower, MCU, MUNI, Medical Examiner)

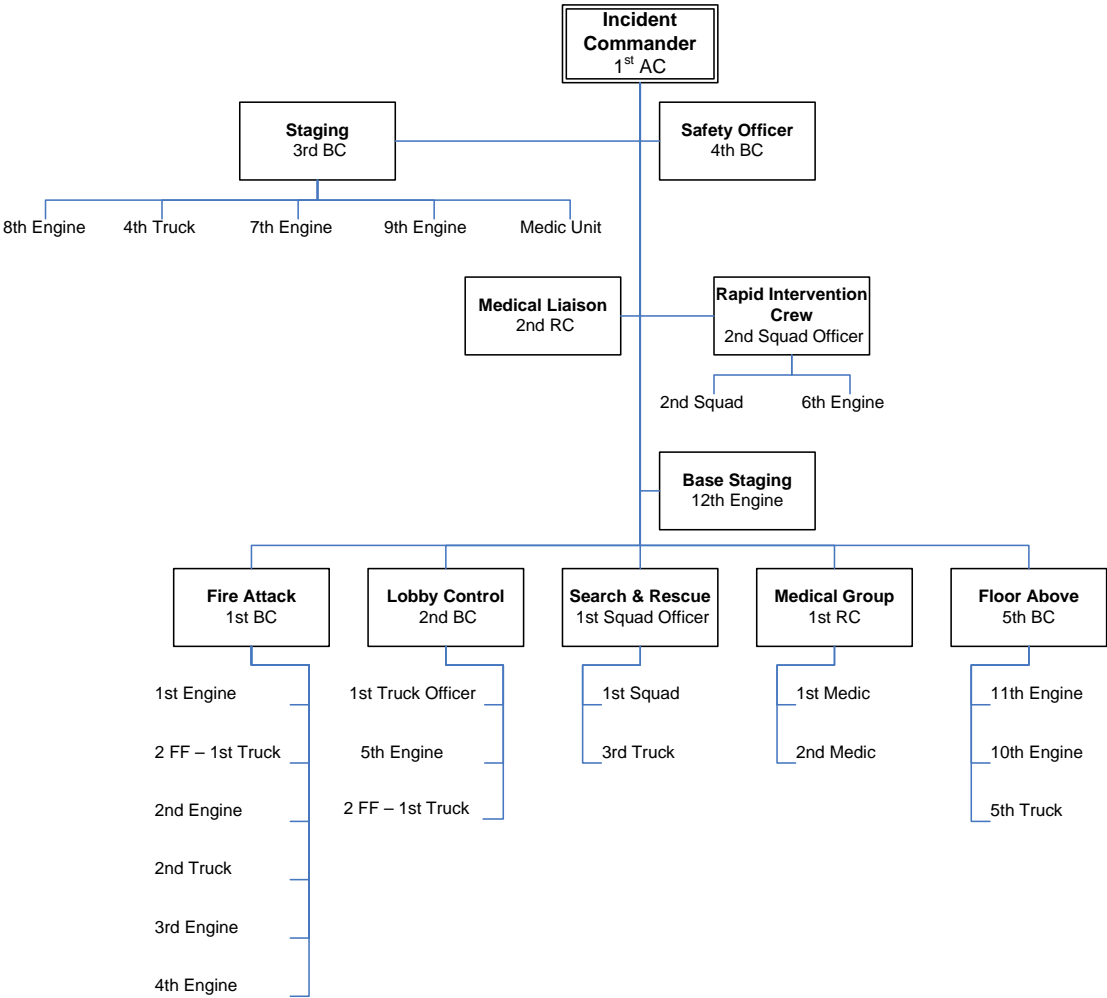
The **First-in Ambulance** is responsible for implementing MCI procedures as needed, which includes the following:

1. Respond to scene in full PPEs (if available), bring gurney, back board, jump kit, monitor, oxygen, MCI bag, and boards to Command Post
2. Report to IC
3. If no RC onscene, assume **Medical Group Supervisor** role; Assume **Triage** roles (don vests); DO NOT participate in suppression activities – it is vital that the first-in Ambulance begin MCI procedures in preparation for civilian and firefighter injuries
4. Determine initial patient count and status; report to IC to relay to DEC (Comm Center)
5. Identify and designate Casualty Collection Points (CCPs) – set up a Triage funnel to Triage and Treatment areas (Red, Yellow, Green); Identify a separate location for a Morgue if needed
6. Upon arrival of first RC, transfer MGS responsibilities and relay status report and await further assignment and instructions

- 7. The first-in Ambulance will assume Triage and Treatment Unit Leader roles after transferring MGS role to an RC

HIGH RISE SECOND ALARM

# of units Due	Engine	Truck	BC	AC	RS	M	RC
WFHR 1 st Alarm	6	3	4	1	2	2	1
WFHR 2 nd Alarm	6	2	1			1	1
TOTAL UNITS	12	5	5	1	2	3	2



SECOND ALARM COMPANIES

All arriving companies will report in to the IC via the Command Channel or in person at the Command Post and receive specific assignments based on need.

UNIT	REPORTS TO:	FUNCTION
7 th Engine Onscene	Staging Manager	Support Staging Area
8 th Engine Onscene	Staging Manager	Support Fire Attack
9 th Engine Onscene	Staging Manager	Support Fire Attack
4 th Truck Onscene	Staging Manager	Support Fire Attack
10 th Engine Onscene	Division above fire floor	Search for extension, assist ventilation and evacuation
11 th Engine Onscene	Division above fire floor	Search for extension, assist ventilation and evacuation
5 th Truck Onscene	Division above fire floor	Search for extension, assist ventilation and evacuation
5 th BC Onscene	IC, becomes division above fire if necessary	Search for extension, assist ventilation and evacuation

Staging Crew

The 7th Onscene Engine (1st due on the 2nd Alarm) will report to the Staging Manager and support the staging area responsibilities. The 8th and 9th Engines and the 4th Truck (1st due on the 2nd Alarm) will report to the Staging Area Manager as a resource to support fire operations and should bring equipment used to support Fire Attack (e.g...hose, search, forcible entry, ventilation fans, 12' and 18' extension ladders)

Floor Above Fire

A 5th Battalion Chief as well as the 10th and 11th Engines, and the 5th Truck shall be deployed on the floor above the fire to assist with evacuation, ventilation and to pre-deploy for possible fire extension and should bring equipment to support these operations. If not utilized, the units will report on conditions to the IC and go to staging.

Base

ICS	Engine	Truck	BC	AC	RS	M	RC
WFHR 2 nd Alarm	6	2	1		1	1	1
Staging	3	1				1	
Floor Above	2	1	1				
Base	1						
Remaining							

First and second alarm units report to the **Incident Commander**. Because of the design of life safety buildings and their ability to support fire fighting operations, few apparatus are required for a High Rise incident. **Base** is the area where 3rd or greater alarm units will respond.

The location of **Base** is designated by the Incident Commander and staffed by the officer and crew of the **12th Engine**.

The **Base Manager** (Officer of the 12th Onscene Engine) is responsible for:

1. Obtain briefing from Incident Commander/Logistics
2. Participate in Logistics Section planning activities
3. Evaluate layout and suitability of previously selected Base location. Make recommendations regarding relocation if appropriate.
4. Request necessary resources and personnel
5. Establish Communications Procedures
6. Establish Base layout and identify/post each function area as appropriate to the incident size and expected duration:
 - a) Crew Ready Area
 - b) Equipment Pool
 - c) Rehabilitation Area
 - d) Apparatus Parking Plan
 - e) Restrooms
7. Provide safety, security and traffic control at Base and Command Post (request SFPD as necessary)
8. Provide facility services - sanitation, lighting and clean up at Base and Command Post
9. Direct crews and equipment to designated locations

SECTION 3. OPERATIONAL PROCEDURES

10. Deliver personnel and equipment to designated locations as required by IC/Operations/Logistics/Staging Area Manager; keep Crews at Base until assigned
11. Coordinate activities with Staging Area Manager and Stairwell/Ground Support Unit Leader
12. Maintain a log of activities and a record of companies and equipment at Base
13. Secure operations and demobilize personnel and equipment as needed
14. Maintain Unit Log (ICS Form 214)

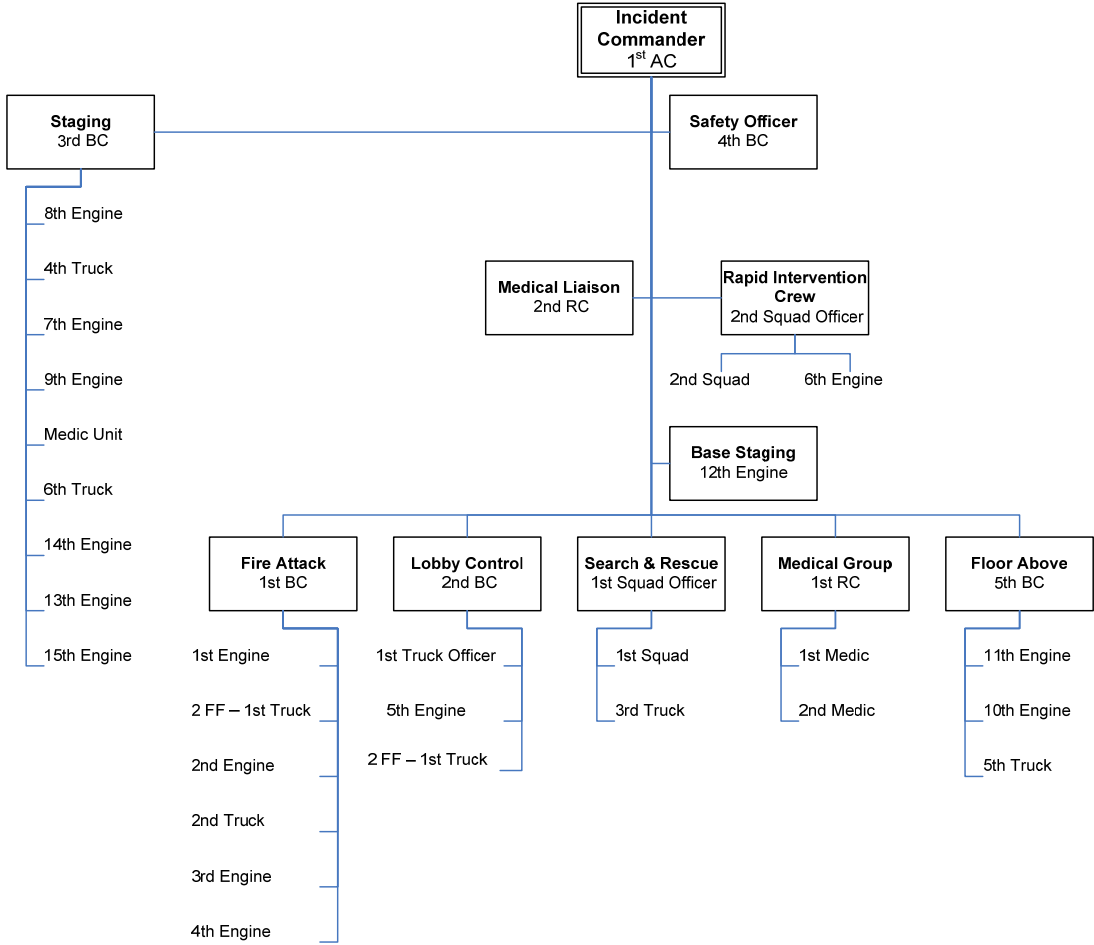
Medical Liason

The **2nd Rescue Captain Onscene** will be the **Medical Liaison** between the **Medical Group** and the Incident Commander. They will be located at the Command Post. The **3rd Onscene Ambulance** will assist the MGS with radio communications, documentation and unit coordination.

Medical communications shall use **B15** as its tactical channel. Other channels will be designated as requested by the Medical Group Supervisor via the IC through DEC (Comm Center). A separate channel (B16) for communication between the **Transport Unit Leader** and DEC shall be designated by DEC (Comm Center).

HIGH RISE THIRD ALARM

# of units Due	Engine	Truck	BC	AC	RS	M	RC
WFHR 1 st Alarm	6	3	4	1	1	2	1
WFHR 2 nd Alarm	6	2	1		1	1	1
WFHR 3 rd Alarm	3	1	1			2	1
TOTAL UNITS	15	6	6	1	2	5	3



THIRD ALARM COMPANIES

UNIT	REPORTS TO:	FUNCTION
13 th Engine Onscene	Staging Manager	Relieve Fire Attack
14 th Engine Onscene	Staging Manager	Relieve Fire Attack
15 th Engine Onscene	Staging Manager	Relieve Fire Attack
6 th Truck Onscene	Staging Manager	Relieve Fire Attack
6 th BC Onscene	IC	Base Manager

13th, 14th, 15th Engines and 6th Truck Onscene shall be assigned to Staging where they will be used to relieve operations companies. The **6th BC Onscene** shall be **Base Manager**. They will report in to the IC and will get an update from the Base Engine Officer and then take over duties from them and assign units based on requests from the IC.

MEDICAL GROUP

UNIT	REPORTS TO:	FUNCTION
3 rd RC Onscene	Medical Liaison	Transport Unit Leader
5 th Medic Unit Onscene	Medical Liaison	Undetermined
6 th Medic Unit Onscene	Medical Liaison	Undetermined

The **3rd ARRIVING RC** will report in to the **Medical Liaison** and assume the **Transport Unit Leader** role or establish another Medical Group as needed. The **5th and 6th Medic** units will report in to the Medical Liaison and await assignment.

INCIDENT COMMANDER

As the incident grows in size the Incident Commander will need to consider:

1. Span of Control (optimum 5 to 1 in ICS)
2. Opening other roles and branches
 - a) Ground/Stair Support (thru Lobby Control)
 - b) Planning
 - c) Logistics
 - d) Medical Branch

- e) Operations (consider the Assistant Chief filling the Operations position to run the fire and using CD2 or CD3 as the Incident Commander)
 - f) Information (PIO)
 - g) Liaison
3. Continual reassessment of objectives and action plan with command staff
 4. Requesting additional radio channels as necessary

HIGH RISE FOURTH AND FIFTH ALARMS

ICS	Engine	Truck	BC	AC	RS	M	RC
WFHR 1 st Alarm	6	3	4	1	1	2	1
WFHR 2 nd Alarm	6	2	1		1	1	1
WFHR 3 rd Alarm	3	1	1			2	1
WFHR 4 th Alarm	5	2				1	1
WFHR 5 th Alarm	4	1					
Total	24	9	6	1	2	6	4

Companies will report to the Base Manager and wait assignment. The IC/Operations will request companies based on the following:

1. Rehabilitation and rotation of companies from Fire Attack
2. Additional support and rotation of companies in Ground/Stair Support
3. Logistical needs
4. Additional Divisions or Medical assistance

SECTION 4. HIGH RISE INCIDENT COMMAND SYSTEM

The High Rise Incident Command System (ICS) has evolved over a period of many years and has been tested and refined through its application during numerous High Rise emergencies.

The ICS is a management system. The system is designed to control and direct the resources committed to an incident. In this manner incident objectives can be accomplished effectively and in priority order. The need is identified by the first arriving officer and the system is established with the arrival of the first alarm assignment and the filling of the basic function of Incident Commander (IC), Fire Attack, Lobby Control, Staging, and Base.

The ICS allows the Incident Commander great flexibility in deploying resources to the maximum advantage. Beyond the basic functions, the IC implements only those elements of the system needed and in the priority that will result in the greatest effectiveness.

As an incident grows in complexity or as additional resources become necessary, the IC can expand the ICS to meet the needs created by the emergency. The specific organizational structure established for any given incident will be based upon the management needs of the incident. Only the functions and positions that are necessary are activated and the IC retains responsibility for the others.

The organization's staff builds from the top down with responsibility and performance placed initially with the Incident Commander. As the need exists, three separate sections can be activated, each with several units which may be established (e.g. operations, logistics, and planning).

The specific organization structure established for any given incident will be based upon the management needs of the incident. The ICS positions filled from existing onscene personnel. None of the positions have a pre-determined rank from which it must be filled. The individuals assigned to the position receive their authority from the position held.

Upon assignment by the Incident Commander, position packets will be supplied to the designated member. These packets contain the necessary information, checklist, forms and supplies required for the execution of the assigned functions. A set of ICS packets is carried in all Chief Officers' vehicles.

COMMAND POST

INCIDENT COMMANDER

LOCATION. The location of the Command Post is at the discretion of the Incident Commander. The decision of where to locate the Command Post should be made after considering where the IC can best control and observe the incident. The Command Post should be isolated at least 200' from the building. The IC should announce the name and location of the Command Post to the Communications Center. The Command Post will become the focal point for:

- Communications (Inform and keep informed)
- Assignments
- Decision Making (ICS)

RESPONSIBILITIES. The Incident Commander (IC) is responsible for:

- The overall management of the incident
- Planning and directing the overall strategy & tactics for the control of the incident
- Establishing the Command Structure and organizational elements necessary to deal with the incident
- Maintaining communications with subordinates
- Determining resource requirements (the ordering and release of resources)
- Working closely with Operation Section (if activated)
- Directing and coordinating staff activities (Information, Safety, and Liaison Officers)

COMMAND STAFF

Safety Officer

RESPONSIBILITIES. The Safety Officer (SO) is a member of the Command Staff. He/She is responsible for monitoring and assessing hazardous and unsafe situations and developing measures for assuring personnel safety. The Safety Officer advises the IC in matters affecting personnel safety and investigates accidents that occur at the incident. The SO is responsible to ensure that fireground hazards and improper operational procedures are identified and mitigated.

The Safety Officer will correct unsafe acts or conditions through the regular line of authority. The Safety Officer or his/her assistants have emergency authority to alter, suspend, or terminate unsafe acts or conditions when imminent danger is involved. The SO must notify the IC immediately of those actions.

In a High Rise fire, a Safety Officer shall be appointed and will report directly to the Incident Commander. Assistant Safety Officers may be appointed as required and will

report directly to the Safety Officer. This position is responsible for the overall safety of personnel assigned to the incident. Until a Safety Officer is assigned the Incident Commander has responsibility for safety.

See Appendix for additional information and checklist for the Incident Safety Officer.

Public Information Officer

RESPONSIBILITIES. The Public Information Officer (PIO) is responsible for developing and releasing information about the incident to the media, to incident personnel and to other appropriate agencies and organizations. The PIO consults with the IC regarding any constraints on the release of information and prepares press releases. Only one Public Information Officer will be assigned for each incident but he/she may have assistants as necessary.

See Appendix for additional information and checklist for the Information Officer.

Liaison Officer

RESPONSIBILITIES. The Liaison Officer serves as an intermediary between the Fire Department and assisting and/or cooperating agencies (e.g. SFPD, RED CROSS, PG&E, WATER DEPT). The Liaison Officer also identifies current or potential interagency needs. Only one Liaison Officer will be assigned for each incident but he/she may have assistants as necessary. The assistants may represent assisting agencies.

See Appendix for additional information and checklist for the Liaison Officer.

OPERATIONS (OPS)

LOCATION. Usually is located on the floor below the fire floor in proximity to the fire suppression activities. His/her location however is optional. The location should allow the Operations Chief to control/observe tactical operations and must provide effective communications with the IC and the Divisions/Groups under his/her supervision. The Ops Chief is mobile and may choose to locate at the Command Post to allow direct communication with the IC, Logistics Chief, and Planning Chief.

RESPONSIBILITIES. Operations is established by the Incident Commander and staffed by a Chief Officer and an Incident Support Specialist (ISS). The Operations Chief (OPS) manages all primary suppression, rescue, evacuation, and medical services operations within the building. OPS reports to and consults with the IC regarding the overall strategy and tactics to be employed. OPS assigns and manages: 1) Staging, 2) Divisions, 3) Groups. OPS supervises these units in performing:

- Fire Attack
- Staging/Rehab
- Rescue/Evacuation

- Medical
- Ventilation
- Salvage
- Overhaul

See Appendix for additional information and checklist for the Operations Chief Position.

STAGING AREA

LOCATION. Usually located two floors below the lowest incident floor. Ideally, the Staging Area should be a large, uncongested location with convenient access to stairways/elevators. Staging personnel must control access to staging and properly route arriving resources. They must also prevent companies from bypassing Staging.

Staging is the area designated inside the building to which units arriving on greater alarms have been ordered to report for assemblage of personnel and equipment.

RESPONSIBILITIES. The Staging Area Manager is responsible for establishing and supervising a Staging Area designed to keep fire suppression forces supplied with immediately available additional personnel and resources. In addition, the Staging Area Manager should staff and operate a fire company rehabilitation area and a medical treatment station to provide for basic medical aid for incident personnel. The Staging Area Manager works directly for the IC/Operations (when activated) and maintains resource levels as directed by them. Anytime reserves fall below the specified level, additional resources, supplies, and equipment are requested by the Staging Area Manager. He/She communicates directly with Logistics or Base when making requests. Equipment/Supplies are transported from Base to Staging by Ground Support personnel and any other personnel reporting to the Staging Area. Personnel and equipment are dispatched to Operations from Staging when requested.

STRATEGY & TACTICS. In order to perform his/her assignment, the Staging Area Manager must accomplish the following tasks:

1. Obtain a situation briefing from the IC/Operations Chief and verify the location of the proposed staging area;
2. Assess the situation, evaluate the proposed location, determine needs, and request needed personnel and resources;
3. Establish communications with IC/Operations and verify staging area location; Communicate Staging Area location also to Logistics/Base and Ground Support Units;
4. Establish the Staging Area layout and post areas:
 - a) reserve personnel
 - b) empty air bottles

- c) rehab area
 - d) first aid station
 - e) reserve equipment area
 - f) full air bottles
5. Maintain level of resources as directed by the IC/OPS Chief and adequate to operate the Staging Area;
 6. Develop an equipment inventory and order specific quantities from Base. Consider the following in order of priority:
 - a) Air bottles
 - b) Fire hose with fittings
 - c) Breathing apparatus (spares)
 - d) Ventilation
 - e) Forcible entry tools
 - f) Salvage equipment
 - g) Overhaul equipment
 - h) Ladders
 - i) Medical equipment
 - j) Ropes
 7. Maintain effective communications link with IC/OPS Chief;
 8. Distribute resources under the directions of the Operations Section;
 9. Brief assigned personnel and appoint to the following functions:
 - a) Company Accounting/Ready Area
 - b) Establish check-in process for arriving/departing crews and record assignments
 - c) Equipment cache (maintain organized equipment area)
 - d) Air Cylinder Exchange/Refill Station
 - e) Rehab Area (rest, rehabilitate, hydrate - Return crews to Ready Area after rehab)
 - f) First Aid Station (Provide basic first aid to incident personnel (If circumstances warrant, the Staging Officer should request the IC to establish a medical group which would be staffed/supplied & directed by the Logistics Section)
 - g) Maintain complete and accurate record of Staging Area activities
 - h) Maintain record of equipment ordered and its delivery

- i) Maintain control of companies assigned to Ready, Reserve, Rehab areas
- j) When directed, secure activities and demobilize

See Appendix for additional information and checklist for Staging Officer.

DIVISIONS

LOCATION. Divisions are the tactical command levels in the ICS organizational structure. Divisions are established on a geographical location basis and are commanded by Battalion Chiefs or Company Officers who concentrate on the areas and tasks needed to meet the overall operational objectives within that specific location (usually a floor).

RESPONSIBILITY. Division Supervisors will report directly to the Incident Commander or to the Operations Chief if established. He/She is responsible for the implementation of the assigned portion of the action plan as directed by IC/OPS, assignment of resources within their Division, and reporting progress within the Division. Individual companies with a Division communicate with their Division Supervisor and should refrain from direct communications with the IC/OPS Chief.

STRATEGY AND TACTICS. In order to accomplish his/her assignment a Division Supervisor must:

1. Obtain assignment and briefing from IC/ OPS Section Chief;
2. Review assignment with subordinate companies and assign tasks;
3. Keep Personnel together and informed of Division Status and assignment;
4. Tasks should be assigned on a company basis. Be specific as to the area of responsibility assigned;
5. Coordinate activities with adjacent Divisions/Groups;
6. Resolve logistic problems within the Division;
7. Keep IC/OPS informed of progress, resource status, conditions, hazardous situations, and special occurrences within Division area of responsibility;
8. Inform IC/OPS Chief if assistance is needed

See Appendix for additional information and checklist for the Division Supervisor.

GROUPS

LOCATION/RESPONSIBILITY. Groups are the functional command levels in the ICS organizational structure. Groups are generally commanded by Battalion Chiefs or Company Officers. Group Supervisors concentrate on specific functions and tasks needed to meet overall objectives (e.g. rescue, salvage, medical, evacuation, ventilation).

Unlike Divisions, Groups are assigned specific tasks by the Incident Commander/OPS Chief. They are not assigned to any specific geographical location. In accomplishing a Group objective, the Group may need to work in more than one Division Area (i.e. performing salvage or ventilation operations on multiple floors). Groups report to Operations if established, if not, they report to the Incident Commander.

STRATEGY & TACTICS. In order to perform the assignment given to his/her Group, the Group Supervisor will:

1. Obtain assignment and briefing from Incident Commander/OPS Chief;
2. Review assignment with subordinates;
3. Develop tactical plan;
4. Identify priorities and resources needed;
5. Establish communication procedures;
6. Keep IC/OPS Chief informed of progress, needs, and special circumstances affecting Group performance;
7. Coordinate activities with adjacent Divisions/Groups;
8. Resolve logistic problems within the Group;
9. Observe all approved High Rise procedures and personnel safety considerations.

See Appendix for additional information and checklist for Group Supervisors.

LOGISTICS

LOCATION. The Logistics Section Chief normally will locate as needed to accomplish his/her responsibilities effectively.

RESPONSIBILITIES. High Rise fires often require a large number of personnel and equipment to control. The Incident Commander must anticipate the need to activate and staff support functions that will sustain the fire attack. The Logistics Section, when activated, is responsible to prepare and implement a plan to support the rescue and suppression forces, the building systems, and the Command and General Staff. The Logistics Section is established by the Incident Commander and is staffed by a Chief

Officer and an ISS. The Logistics Section Chief activates (if necessary) and supervises the units within the Logistics Section. The Logistics Chief supervises and coordinates the activities of Lobby Control, Systems Unit, Base, Ground Support Unit, Communications Unit, Water Supply and the Medical Unit. The Logistics Section Chief coordinates with the Staging Area Manager to make sure they are receiving equipment and supplies that are needed. Logistics also must ensure that communication resources at the High Rise incident are being utilized and operating effectively.

STRATEGY AND TACTICS. In order to perform his/her assignment the Logistics Section Chief must accomplish the following:

1. Confirm the operational status and capabilities of the Lobby Control unit, Base, and Ground Support Unit. Ensure these units are staffed appropriately. Logistics supervises and coordinates the activities of these units.
2. Establish, staff, and supervise the Systems Unit, Water Supply Unit, Communications Unit, and Medical Unit when they are needed or when requested by the IC or Ops.
3. Estimate the additional resources needed. Consult and collaborate with Operations and Planning Sections. Resource requirements must be approved by the IC.
4. Coordinate with Staging Officer and maintain personnel/equipment resources at levels as directed by the IC/Operations Section.
5. Establish and maintain an effective equipment and supply system. Air cylinder re-supply and a secure, dependable water supply will be first priorities.
6. When necessary, staff and supply the Staging Area and Base Rehab and first aid stations. Implement a Medical Plan for incident personnel, including an emergency transportation plan.
7. Keep IC informed as to the need for additional alarms in order to maintain appropriate reserve of personnel and equipment.
8. Confirm the operational status of building systems. Implement support, repair, and monitoring actions of same through Lobby Control/Systems Unit.
9. Ensure Communication resources are sufficient, operational, and utilized properly:
 - a) SFFD portables
 - b) Firefighters emergency phones
 - c) Cellular telephones assigned to Battalions/Divisions

- d) Building public address system
- e) Building Control Station telephone

See Appendix for additional information and checklist for Group Supervisors.

LOBBY CONTROL

LOCATION. The Lobby Control Unit is established by the Incident Commander or Logistics Officer. The unit is generally staffed by a first alarm company and a 1st alarm BC in the initial stages of an incident. Expanded incidents require additional personnel to be assigned to Lobby control. The Lobby Control Unit Leader is generally positioned in or adjacent to the lobby area, except as required to perform his/her duties effectively.

RESPONSIBILITIES. The Lobby Control Unit Leader is responsible for:

1. Operating a personnel/crew accounting system for all building entry and exit. Be prepared to provide the IC, Logistics, and Plans Chiefs current information from the personnel accounting process.
2. Operation and control of building elevators and assign properly equipped firefighting personnel to operate elevators.
3. Locate and obtain ground floor access to stairway.
4. Control all building access points and direct personnel to correct stairwell/elevator or route by
 - a) posting security at ground level entrance to each stairway
 - b) monitoring the entering/exit of stairways
 - c) establishing a safe ascent method and route
 - d) facilitating movement of equipment from Base to Staging Area
 - e) obtaining firefighting emergency phones and keys to doors/elevators and issue to personnel as needed
 - f) directing civilians to proper ground level safe areas at least 200' from building
5. Assist at the Building Control Station. In buildings without complex building systems, the Lobby Control Unit may perform basic systems monitoring and control functions.
6. Consult with Building Engineer
 - a) HVAC system
 - b) standpipe system
 - c) sprinkler system

- d) other building Fire Protection Systems and Communications Systems

STRATEGY & TACTICS. Adequate personnel must be assigned to maintain accurate and useful accountability records (The Incident Commander must ensure that the Lobby Control unit is adequately staffed). All ground level access points must be secured or staffed to maintain safe ingress/egress and correct routing of arriving resources. All elevators identified for use must be supplied with trained operators.

The Lobby Control Unit Leader must:

Obtain a briefing from the Incident Commander or the Logistics Section Chief. The briefing should provide or establish the need to identify the following:

1. Current resources
2. Stairwells designated for attack, evacuation, resource movement
3. Elevator status
4. Communications procedures to be used - establish communications
5. with the IC and Logistics/Operations/Ground Support/Base/Staging Area Managers
6. Request personnel staffing appropriate to the incident and building
7. Assess complexity and size.

Establish entry/exit control at all building access points. All points of access into the building should be identified. Primary access point for arriving resources should be identified, marked and controlled. Notify Base Manager and Ground Support Unit of primary access point.

Establish personnel accounting system for personnel entering/exiting the building. The personnel accounting system should provide at a minimum the unit numbers and number of members, and assignment/destination/route (elevator or stair). Optimally, the accounting system would identify individual personnel and specific route. Record keeping should be done in such a manner as to allow effective transfer of information to the Incident Command Post.

Assume control of elevators and provide operators. Elevator operations must include the following actions:

Confirmation of Incident Commander approval for the use of elevators including specific elevator banks.

Control of the elevators using the proper Phase 1 & 2 Firefighter Recall Function.

Provide elevator operators with full protective equipment (SCUBA, extinguisher, Door Opener, flashlight), operational instructions, and communications capability, Firefighter Phone).

Close coordination with the Building Manager and/or Systems Unit to resolve routine and emergency operational problems.

Direct personnel to appropriate stairways/elevator for assignment. Direct evacuees and exiting personnel to safe areas or safe routes from the building. Coordinate with Operations Section to identify specific stairway for arriving resources, stairway being used for evacuation purposes, location of safe areas and medical treatment areas. Communicate this information to Logistics Section. Coordinate with Logistics and identify safe routes to Rehabilitation Areas, Base, and the Command Post.

Maintain unit records and log. Provide personnel accounting records to Plans Section (if established, if not, provide to Command Post) and unit log to the Logistics Section Chief.

See Appendix for additional information and checklist for Group Supervisors.

SYSTEMS

LOCATION. Various locations-determined by Systems unit Leader as required to perform duties effectively.

RESPONSIBILITIES. Large, complex incidents may indicate to the Incident Commander the need to monitor and maintain building and operating control systems more intensely than the basic systems monitoring being performed by Lobby control. This need may arise due to the magnitude of the incident or the fact that incident personnel have identified problems with building systems operating improperly or not operating at all. The Incident Commander may establish a Systems Unit to address these concerns.

The Systems Unit Leader monitors and maintains built-in fire control, life safety, environmental control, and communications systems. These include the HVAC system, electric power, fire suppression water pumps, distribution system and water supply, communications links, detection and alarm system, stairwell pressurization and smoke removal system. The unit leader also monitors and maintains, but does not operate, elevator systems (operation remains Lobby Control function). The Systems Unit Leader reports to the Logistics Section Chief. He/She may respond directly to requests from the Operations Section Chief. The Systems Unit Leader must establish and maintain close liaison with building/facility engineering staff, utility company representatives, and other appropriate technical specialists.

STRATEGY & TACTICS. In order to perform this assignment the Systems Unit Leader will accomplish the following tasks:

Receive briefing and the assigned communications channel from Incident Commander or Logistics Section Chief. This briefing should provide information or direction on the following:

- type of built-in systems and their current performance;
- priorities for the unit identified by the IC/Logistics Chief;
- current incident situation

Assess situation and request needed personnel and resources;

Examine building/facility layout, system display/control panels;

Meet with currently assigned personnel and on-scene building/facility management and engineering staff;

Brief assigned personnel and appoint personnel to monitor system display/control panels - operate controls as directed;

Request response of, and make contact with building engineer, utility company representatives, elevator service personnel, and others as appropriate;

In the event of a major incident, anticipate the failure of important systems by the following actions:

1. have needed technical specialists/assistance enroute or available
2. establish a meeting location for building/facility technical staff and specialists
3. advise the Command Post and Lobby Control of the location
4. communicate and plan with Logistics Section Chief regarding solutions to
5. systems failures so that plans and resources can be anticipated
6. if necessary, assign an SFFD member with communications capabilities to the technical specialist(s) assigned to problem systems

Evaluate the status and operation of the fire and domestic water pumps and water supply - support or repair as required (the Systems Unit monitors and supports the water supply "after the meter") (Coordination with the public water system is handled by the Logistics Section) - the Systems Unit assures that pumps are protected from flooding and power loss, and investigates and remedies any failure of automatic fire suppression systems, and conditions of inadequate water pressure or volume within the building

Evaluate and operate, as required, the HVAC System and the smoke removal and stairwell protection systems - operation of these systems must be closely coordinated with the IC/Operations Section to minimize smoke and fire spread and protect occupants and firefighters;

Evaluate, support, and control as needed the building electrical system and emergency power plant - plant engineers and the utility company personnel should be positioned early in the incident to protect, control, and restore power as required (protect from flooding and damage);

Evaluate and support as needed the public address, telephone, emergency phone and other building communications systems - Systems Unit personnel at system display/control panels may operate these systems as required (adequate personnel must be provided if these system are to be monitored).

See Appendix for additional information and checklist for Group Supervisors.

BASE

LOCATION. The Base Area is an exterior area to which responding apparatus, equipment, and personnel report when responding on greater alarms at High Rise incidents. The location of Base is determined by the Incident Commander (minimum of 200' from incident structure). The Communications Center shall ensure that all responding units are given the location of the Base Area. Base is generally established on Third Alarm and staffed initially by a Chief Officer. First and Second alarm units usually report directly to the Incident commander (3rd alarm companies will usually be sent to Staging). Base is part of the Logistics Section and the Base Manager shall report to the Logistics Section Chief. If Logistics has not been established, then report to the IC.

RESPONSIBILITIES. The Base Manager shall organizing a Base Area layout, identifying and securing vehicle parking and equipment pool areas. The Base Manager will collect and stockpile needed equipment from apparatus, establish a company ready area, and a company rehab area. He/She will manage all operations at Base and maintain a resource level as ordered by the Incident Commander. Additional personnel and equipment resources necessary to maintain that level are requested through the Logistics Section Chief or IC as appropriate. The Base Manager will send crews and equipment to designated locations as ordered. He/She will utilize personnel responding to Lobby/Staging for assignment to assist in resource movement. He/She will advise the Logistics Section Chief of the need to establish a Ground Support Unit and will utilize this unit, once established, for moving resources as appropriate. Obtain traffic control (SFPD), if needed and establish base perimeter security (SFPD), if needed.

STRATEGY & TACTICS. In order to perform this assignment the Base Manager will accomplish the following tasks:

1. Receive a briefing and the assigned communications channel from the Logistics Section Chief or Incident Commander;
2. Assess the situation and area chosen;

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3. Understand the correct communications channel from the Logistics Section Chief or Incident Commander;
4. Contact Incident Commander/Logistics Section Chief/Staging Area Manager and advise when Base is operational;
5. Consult with Logistics Section Chief or Incident Commander and determine resource levels to be kept at Base - order additional resources through the Command Post (IC); Brief assigned personnel and appoint to the following functions:
 - a) Crew Ready Area. Companies assigned to Base shall remain together
 - b) under the control of the Company Officer in the area assigned by Base
 - c) personnel or at their apparatus if unassigned. Unassigned companies in
 - d) Base may be utilized for tasks while at Base;
 - e) Equipment Pool. Base personnel should have equipment collected,
 - f) assigned a priority (high, medium, low), and placed at a designated
 - g) equipment pool location. Ground Support Unit should be
 - h) advised of: 1) location of equipment pick-up point; 2) movement priority
 - i) assignment system being utilized; 3) any specific equipment requests made
 - j) by tactical units;
 - k) Rehab Area. Set up for firefighter rest, rehab, and hydration
6. Establish a parking area for arriving vehicles. Secure SFPD assistance in parking/traffic control and in providing Base security;
7. Establish check-in and check-out procedures. Maintain record of companies and equipment at Base;
8. As required by the Incident Commander, Operations Chief, Logistics Section Chief, and Staging Area Manager send crews and equipment to designated locations. Personnel responding into the Incident building should do so through Lobby Control personnel for proper personnel accounting purposes and to receive instructions regarding proper/safe method of ascent route to be used;
9. Utilize Ground Support Unit for moving supplies and equipment as appropriate.

See Appendix for additional information and checklist for Group Supervisors.

GROUND SUPPORT

LOCATION. Various locations, as determined to effectively perform unit functions. Ground Support Unit is established and reports to the Logistics Section Chief. The unit is staffed by engine and/or truck companies. It may require a large number of personnel to properly staff this unit depending upon: 1) scope of incident; 2) location of fire floor and Staging Area; 3) method chosen to transport equipment to Staging Area (stairwell/elevator); 4) duration of incident.

RESPONSIBILITIES. The Ground Support Unit is responsible for the transport of equipment and supplies from BASE to the Staging Area. This will require hauling equipment by utilizing designated stairwells and, if approved by the Incident Commander, designated elevators. This unit is also responsible for establishing a system that will provide for efficient and sufficient SCBA air cylinder filling/exchange. This is a priority responsibility as the demand for fresh air cylinders by tactical units will be extreme during a High Rise incident. This unit also may be called upon to implement an auxiliary water supply by making hose leads to the operational area via stairwell shafts. When necessary, this unit will implement positive pressure ventilation in the stairwells.

STRATEGY & TACTICS. In order to perform this assignment the Stairwell/Ground Support Unit Leader will accomplish the following tasks:

1. Receive a briefing and the assigned communications channel from the Incident Commander or Logistics Sections Chief;
2. Assess situation and request needed personnel and resources;
3. Establish communications with:
 - a) IC or Ops or Logistics (receive briefing and orders, consult regarding proper/safe method of resource movement & designated stairwell/elevator)
 - b) Staging Area Manager (confirm location of Staging & Staging Area needs)(coordinate with Base)
 - c) Base (determine location of Base and equipment pool location)
 - d) Lobby (consult/advise regarding movement of equipment to Staging)

Advise when Stairwell/Ground Support Unit is operational; Confirm which stairwell has been designated the primary resource stairwell and the designated-use elevators with the IC and Lobby Control;

Determine staffing needs. If resource movement is via stairway a minimum of one firefighter for every two floors is required and anticipate the need to relieve personnel. One officer per four or five members is recommended; Determine equipment needs.

Each member should have SCBA (placed at a readily available place) and a flashlight. Officers shall obtain stairway doors keys, if available and FF emergency phones, if available; Locate, organize and operate SCBA air cylinder refilling and stockpile operation. Coordinate plans with Base Manager, Staging Area Manager, and Service Squad personnel to ensure tactical personnel have adequate supply of fresh air cylinders; Coordinate and supervise the laying of auxiliary water supply lines if it becomes necessary to lead such lines up stairwell shafts. See Appendix for additional information and checklist for Group Supervisors.

COMMUNICATIONS

LOCATION. Communications Unit is generally located in close proximity to the Command Post/Command General Staff or as appropriate to effectively accomplish its mission. The Communications Unit Leader is part of the Logistics Section and reports to the Logistics Section Chief and the Incident Command Post.

RESPONSIBILITIES. When the Incident Commander determines there is a need, he/she may establish a Communications Unit. The need may arise due to: 1) the complexity of the incident; 2) communication equipment failure or unsatisfactory performance; 3) insufficient communication channels; 4) insufficient communication equipment. When activated, the Communications Unit is responsible for developing the Communications Plan for the effective use of external and building communications system equipment. The following resources can generally be utilized in High Rise buildings:

- SFFD portable radios
- Firefighter emergency phones
- Cellular phones assigned to Battalions and Divisions
- Building public address system
- Building Control Station telephone

STRATEGY & TACTICS. In order to perform this assignment, the Communications Unit Leader will accomplish the following tasks:

1. Receive a situation briefing from the Incident Commander or Logistics Section Chief;
2. Assess situation and review current communication system strategy and performance;
3. Determine feasibility of providing the required communication support. For example:
 - a) request additional radio channels from DEC (Comm Center);
 - b) develop radio communication plan;
 - c) issue and distribute available communication equipment (radios, cellular phones, batteries, etc.);

- d) establish message center at Command Post and request, appoint, and coordinate assistants/runners as required.
4. Coordinate with Lobby Control/Systems Unit to determine Building Communication Systems performance and availability of technical specialists to support/repair these systems; Coordinate with Communications Center to provide additional radio channels as required for Command, Operations, Logistics, and Plans; Develop a plan to ensure accountability, distribution, and recovery of communication equipment; Keep Logistics Section Chief and Command Post informed of unit activities and progress.

See Appendix for additional information and checklist for Group Supervisors.

WATER SUPPLY

LOCATION. Various locations, as determined to effectively perform unit functions.

RESPONSIBILITIES. When ordered by the Incident Commander, the Water Supply Officer is responsible to direct water supply operations to the sprinkler and standpipe systems and provide additional sources of water supply and augmentation for use by incident personnel. This may become necessary when building water supply systems fail to provide adequate water flow and pressure for firefighting crews. The Water Supply Unit operates under the direction of the Logistics Section Chief or the Incident Commander if the Logistics Section has not been established.

STRATEGY & TACTICS. In order to perform his/her assignment the Water Supply Officer will:

1. Receive a situation briefing from Logistics Section Chief or the Incident Commander;
2. Establish Communication Procedures;
3. Determine water supplies within incident area
 - a) domestic low pressure water system
 - b) SFFD Emergency Water Supply manual
 - c) Auxiliary Water Supply System-High Pressure System
4. Determine resources and equipment needed to supply water to the incident;
5. Develop a Water Supply Plan for approval of IC/Logistics Section Chief;
6. Direct water supply operations as directed by IC/Logistics Section Chief
 - a) supply standpipe/sprinklers when ordered by IC
 - b) coordinate with Stairwell/Ground Support for laying of hose lines up

- c) stairwell shafts
- 7. Request SF Water Department and AWSS personnel respond to assist.

See Appendix for additional information and checklist for Group Supervisors.

MEDICAL UNIT

LOCATION. Various locations, as determined to effectively perform unit functions.

RESPONSIBILITIES. The Incident Medical Unit Leader is responsible for developing the Incident Medical Emergency Plan. The unit provides first aid to incident personnel in the Staging Area Aid Station and Paramedic-level care at a ground-level location. The unit provides medical evacuation and transport for incident personnel. The Medical Unit Leader reports to the Logistics Section Chief. The unit may also assist the Operations Section in providing limited care to civilian casualties at the incident if they are limited in number. If civilian casualties are extensive the Operations Chief should establish a Medical Group.

STRATEGY & TACTICS. In order to perform this assignment, the Medical Unit Leader will accomplish the following tasks:

1. Obtain a briefing and the assigned communications channel from the Incident Commander;
2. Assess the current situation and request needed resources and personnel;
3. Establish communications with and advise the following of operating location:
 - a) Incident Commander/Logistics Section Chief
 - b) Operations Chief
 - c) Staging Area Manager (coordinate location for First Aid Station at
 - d) Staging)
 - e) Base (coordinate supplying Medical Unit; consult regarding best location
 - f) for Medical Aid Station for incident personnel at ground level)
 - g) Safety Officer
4. Develop an Incident Medical Plan. The plan will include casualty evacuation, treatment, and transportation. Provide the Medical Plan to the Safety Officer and Logistics Section Chief for approval;
5. Establish and staff medical aid stations at:
 - a) Staging Area

- b) Base or at other location at ground level where medical resources can
 - c) organize and operate effectively.
6. Provide medical aid and transportation for personnel assigned to the incident who become injured or ill;
 7. Document and process all records related to injuries, illnesses, or death of personnel assigned to the incident.

It is becoming increasingly important to establish a Medical Unit at major incidents. The Medical Unit will have responsibility for all medical services. The Unit Leader will develop a Medical Plan for the incident. If a Medical Group has been established, the Medical Unit Leader must coordinate all medical services activities at the incident to provide efficient treatment and transport for both civilian and incident personnel casualties. The Medical Plan should provide specific information on medical aid capabilities at the incident location, information on potential hazardous areas or conditions, and provide off-incident locations and procedures for handling serious situations.

See Appendix for additional information and checklist for Group Supervisors.

PLANNING

LOCATION. The Planning Section Chief will locate at or near the Command Post except as needed to perform effectively.

RESPONSIBILITIES. When a High Rise fire cannot be controlled by initial attack resources an Incident Commander may choose to establish a Planning Section. The Planning Section Chief must implement actions to track resources and incident status. The Planning Section Chief is responsible for the collection, evaluation, dissemination, and use of information regarding the development of the incident and the status of resources.

Information needs would include data existent prior to the incident in addition to that which is gathered at the scene. Information is needed to: 1) Assess current situation; 2) Predict probable course of incident events; 3) Prepare and provide to the IC alternatives for strategic and tactical operations for containment of the incident; 4) Develop Incident Action Plan for the next operational phase of the incident as defined by the IC.

STRATEGY & TACTICS. In order to perform this assignment the Planning Section Chief will:

1. Establish a Situation Status Unit and a Resource Status Unit
 - a) Situation Status is obtained from the IC, Operations, and Systems Unit or

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- b) Lobby control
 - c) Initial Resource Status information is obtained from the IC, Operations,
 - d) Lobby Control, and Base.
2. Utilize Technical Specialists who have specialized knowledge and expertise.
 3. Using information gathered advise IC on the current situation, predict probable course of events, and prepare alternate strategies and tactics for the incident.
 4. Establish a Documentation Unit.
 5. Supervise and coordinate the activities of Situation Status, Resource Status, the Documentation Unit, and available Technical Specialists. Sit/Stat and Re/Stat are normally staffed with Chiefs Aides.

SITUATION STATUS (SIT/STAT). This unit is responsible for the collection and organization of all incident information and the evaluation, analysis, and dissemination of the information for use by incident personnel. This unit maintains a roster of command personnel. Sit/Stat also creates and displays a diagram of the current incident situation. This diagram should depict the concerned structure, pertinent structure components, and fire location. The diagram should identify where specific companies are assigned, Divisional boundaries, command officers and resources in reserve.

RESOURCE STATUS (RE/STAT). This unit is responsible for maintaining a current roster of the resources (Primary and Support units) assigned to the incident and their status. This is achieved by overseeing the check-in of all resources and maintaining a status keeping system indicating current location and status of all resources.

DOCUMENTATION. This unit is responsible to provide a comprehensive, chronological record of the incident activities, which will be preserved, for legal, analytical, and historical purposes.

TECHNICAL SPECIALISTS. Individuals that have technical areas of responsibility. They may be Fire Department members (e.g. Fire Prevention) or those not associated with the Department such as engineers or building management. Other examples of technical specialists are: Hazardous Materials Team, Environmental Impact (DPH), Structural Engineer, Building Engineer.

See Appendix for additional information and checklist for Group Supervisors.

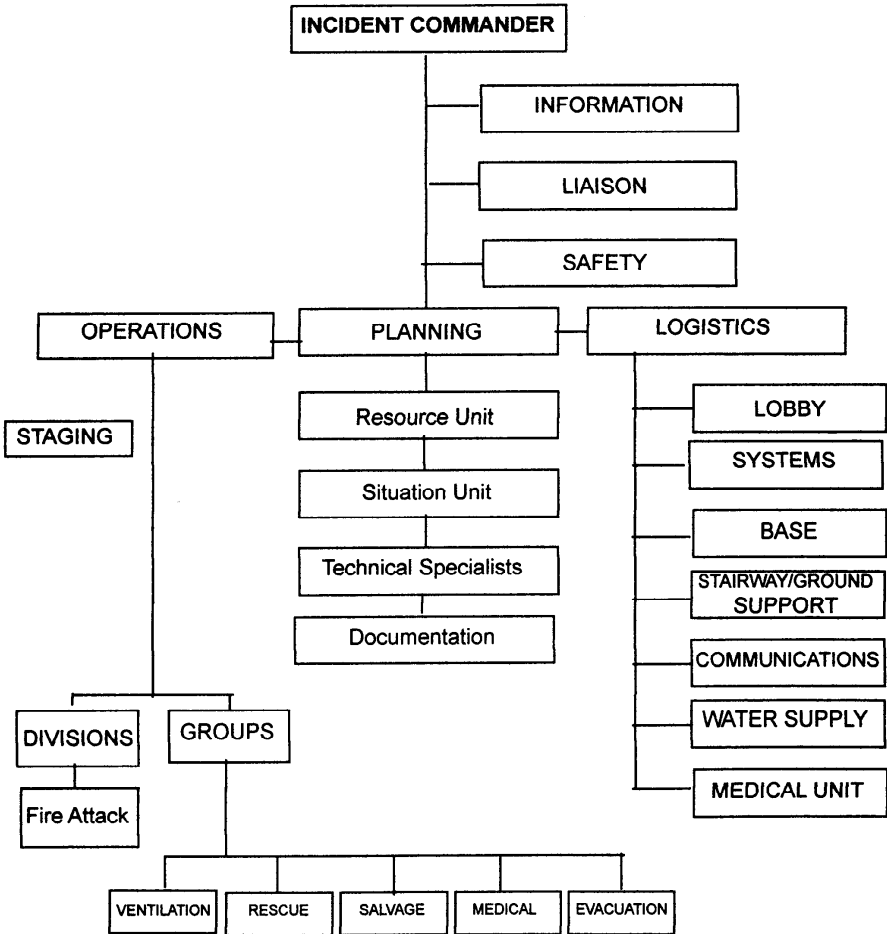
SECTION 5. APPENDICES

APPENDIX A: INCIDENT COMMAND SYSTEM CHECKLISTS

INCIDENT COMMANDER

THE INCIDENT COMMANDER IS RESPONSIBLE FOR INCIDENT ACTIVITIES INCLUDING THE DEVELOPMENT AND IMPLEMENTATION OF STRATEGIC DECISIONS AND FOR THE ORDER AND RELEASE OF RESOUECES.

Radio designation: "COMMAND"
Channel: BATTALION "TACTICAL" CHANNEL (A7-A16)
FIREGROUND "COMMAND" CHANNEL (A7-A16)
"COMMAND" CHANNEL (A4-A6) / "CONTROL" CHANNEL (A1-A2)



INCIDENT COMMANDER

OBTAIN INCIDENT SITUATION BRIEFING

ESTABLISH COMMAND POST (minimum 200' from building)

MANAGE TOTAL INCIDENT OPERATIONS AND
ESTABLISH COMMAND ORGANIZATION

ASSESS SITUATION, DETERMINE SCOPE OF INCIDENT
AND PRIORITIZE THE PROBLEM

- RESCUE
- FIRE ATTACK
- SALVAGE
- FIRE BEHAVIOR, SPREAD, LAPPING
- VENTILATION

EVALUATE OVERALL STRATEGY ON A CONTINUAL BASIS
CONSULT W/OPS, LOGISTICS, PLANS, COMMAND STAFF

DETERMINE ADEQUACY OF RESOURCES-ORDER AS NECESSARY

DIRECT ACTIVITIES AND MAINTAIN COMMUNICATIONS WITH
COMMAND STAFF, OPERATIONS, LOGISTICS, AND PLANS

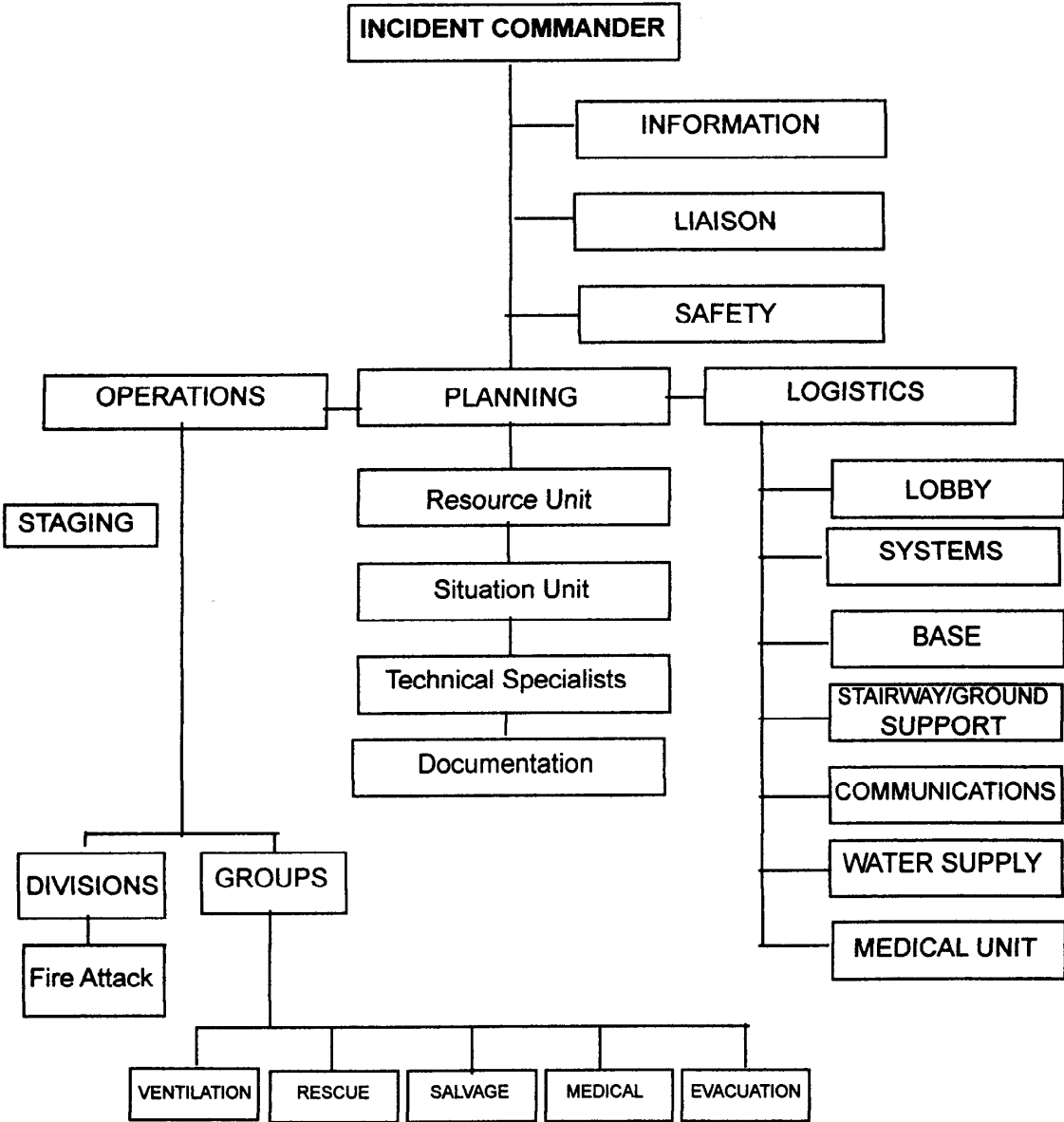
APPROVE RELEASE OF RESOURCES

SAFETY OFFICER

THE SAFETY OFFICER IS RESPONSIBLE FOR MONITORING AND ASSESSING HAZARDOUS AND UNSAFE CONDITIONS. THE SAFETY OFFICER WILL CORRECT UNSAFE ACTS THROUGH THE CHAIN OF COMMAND OR DIRECT ACTION.

Radio designation: "SAFETY"

Channel: FIREGROUND "COMMAND" CHANNEL (A7-A16)



SAFETY OFFICER CHECKLIST

This checklist is provided to the Safety Officer in order to assist in Safety Management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of the incident/

When the position is activated, the Safety Officer will:

1. Receive a briefing from the Incident Commander.
2. Don full protective equipment and portable radio.
3. Assess situation/ observe overall scene.
4. Identify hazardous and/or unsafe conditions that are associated with the incident.
5. Identify potentially hazardous situations that may develop.
6. Determine need for Assistant Safety Officers and review
7. Incident Action Plan (IAP) if available.
8. Keep all personnel informed of existing and potential hazards.
9. Correct unsafe acts or conditions. Assure proper use of safety equipment. Use emergency authority if required.
10. Participate in planning meetings.
11. Insure personnel accountability system is implemented.
12. Investigate accidents that have occurred within the incident area.
13. Brief IC on regular basis on all issues involving health and safety and his/her actions.

THE SAFETY OFFICER IS A MEMBER OF THE COMMAND STAFF AND REPORTS DIRECTLY TO THE INCIDENT COMMANDER.

SAFETY OFFICER

The Safety Officer is responsible for monitoring incident activities to insure that safe work practices and procedures are implemented and heeded. The following is provided as general guidance for the Safety Officer.

1. Monitor the fire ground for Hazards, Unsafe Acts, Improper operational activities.
 - a) Observe apparatus placement in relation to potential collapse zones and falling debris.
 - b) Ensure apparatus and hose protected from falling debris.
 - c) Burn time of building (Out of control one or more floors greater than 20 minutes)
 - d) Structural integrity of building or fire floor.
 - e) Prohibit the use of elevators until deemed safe by the Incident Commander.
 - f) Personnel Accountability and Rehab procedures in place.
 - g) Tape off high hazard areas.
2. Determine Health and Safety Issues.
 - a) Survey Incident environment and operations as appropriate.
 - b) Conduct personnel interviews.
 - c) Make recommendations to IC on identified issues.
 - d) Prepare Safety Message if required.
 - e) Advise incident personnel in matters affecting personnel safety.
 - f) Coordinate with appropriate supervisory personnel.
3. Investigate or coordinate investigations of accidents involving fire suppression personnel that occur within the incident area.
 - a) Obtain notification of accident.
 - b) Interview personnel involved.
 - c) Inspect accident scene.
 - d) Photograph scene as necessary.
 - e) Collect all equipment involved in accident for later analysis if necessary.
 - f) Reconstruct accident events.
 - g) Identify root cause and contributing factors.

- h) Develop an accident report, which includes injured personnel, summary of accident, cause, contributing factors, and corrective actions.

ITEMS FOR CONSIDERATION FOR UNSAFE ACTS, POTENTIAL HAZARDS, AND IMPROPER OPERATIONAL ACTIVITIES.

1. UNSAFE ACTS

- a) Personnel not in proper protective equipment.
- b) No backup lines.
- c) Opposing hose streams.
- d) Exterior streams with interior crews.
- e) Using elevators prior to determining if safe to use.
- f) Aerial ladders overloaded or improperly positioned.

2. HAZARDS

- a) Potential collapse zones.
- b) Falling glass and debris.
- c) Excessive water buildup in building.
- d) Burn time in relation to construction type.
- e) Overhaul being done without proper lighting or ventilation.
- f) Structural integrity of building compromised. (Cracks, groans, smoke or water through cracks).
- g) Voids/open holes/other physical hazards around building.
- h) Vehicular and pedestrian traffic not secured around fire scene.
- i) Failure of high pressure hose lines.

3. IMPROPER OPERATIONAL PROCEDURES

- a) Incident Command System not established.
- b) Crews freelancing.
- c) Insufficient number of radio channels for incident.
- d) Inadequate resources available for incident.
- e) Inadequate number of attack lines or GPM flows.
- f) Personnel accountability system not established.
- g) Rehab not established.
- h) Opposing attack lines or improper use of aerial ladders.

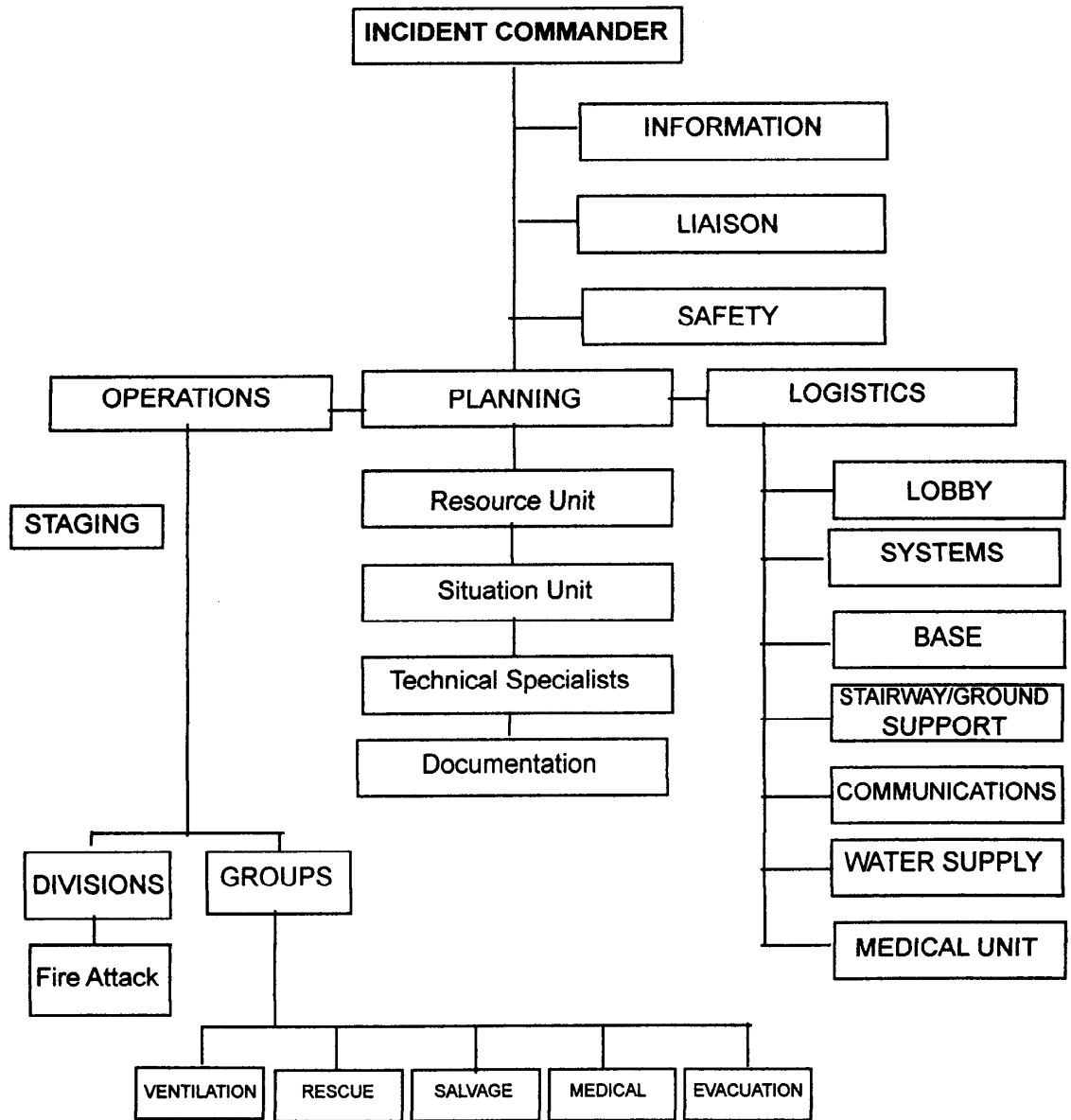
- i) Standby rescue crews not assigned.
- j) No Safety Officer assigned.
- k) No safe entry zones established for fire suppression personnel.

THE SAFETY OFFICER IS A COMMAND STAFF OFFICER AND REPORTS
DIRECTLY TO THE INCIDENT COMMANDER

INFORMATION OFFICER

THE INFORMATION OFFICER IS RESPONSIBLE FOR THE FORMULATION AND RELEASE OF INFORMATION ABOUT THE INCIDENT TO THE NEWS MEDIA AND OTHER APPROPRIATE AGENCIES.

Radio designation: "INFORMATION"
 Channel: FIREGROUND "COMMAND" CHANNEL (A7-A16)



INFORMATION OFFICER CHECKLIST

This checklist is provided to the Information Officer in order to assist him/her in Information management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

When the position is activated, the Information Officer will:

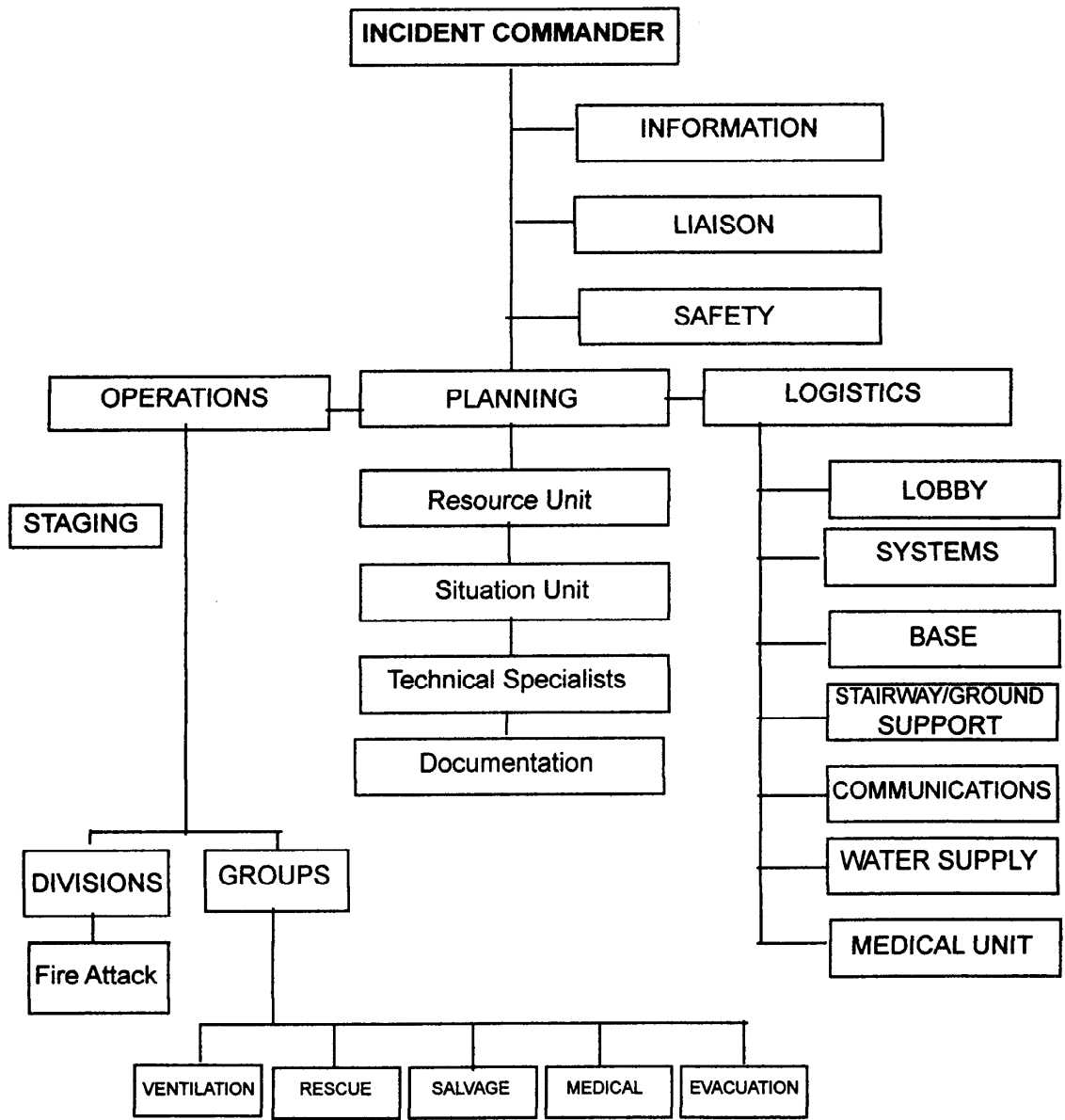
1. Receive a briefing from the Incident Commander.
2. When required, designate a media briefing area. This area should be in a secure place away from the Command Post and other incident activities.
3. Act as liaison between media and the Incident Commander and arrange for interviews with incident personnel.
4. Observe constraints imposed by the Incident Commander on the release of information.
5. Prepare initial information summary.
6. Attend necessary meetings to update information.
7. Arrange and prepare press briefings. Provide escort service to the media and VIPs.
8. Receive approval for release of information from the Incident Commander and transmit news releases to the media.
9. Prepare Post-Incident releases and/or summary
10. information for use by media.
11. Perform other duties as directed. Forward all reports to the I.C.
12. Maintain log of activities.

THE INFORMATION OFFICER IS A COMMAND STAFF OFFICER AND REPORTS DIRECTLY TO THE INCIDENT COMMANDER.

Liaison Officer

THE LIAISON OFFICER IS THE POINT OF CONTACT FOR ASSISTING COOPERATING AGENCY REPRESENTATIVES INCLUDING OTHER FIRE AGENCIES, RED CROSS, SFPD, PG&E, BUILDING DEPARTMENT, HEALTH DEPARTMENT AND ALL OTHERS.

Radio designation: "LIAISON"
 Channel: FIREGROUND "COMMAND" CHANNEL (A7-A16)



LIAISON OFFICER CHECKLIST

The Liaison officer is the point of contact for the assisting and cooperating agency representatives. This includes representatives from other fire agencies, Red Cross, Public Works, PG&E, Pacific Bell, Police, Building Dept., Health Dept. and all others.

This checklist is provided to the Liaison Officer in order to assist him/her in Liaison management. The checklist is not to be considered as a complete list of responsibilities.

It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

When the position is activated the Liaison Officer will:

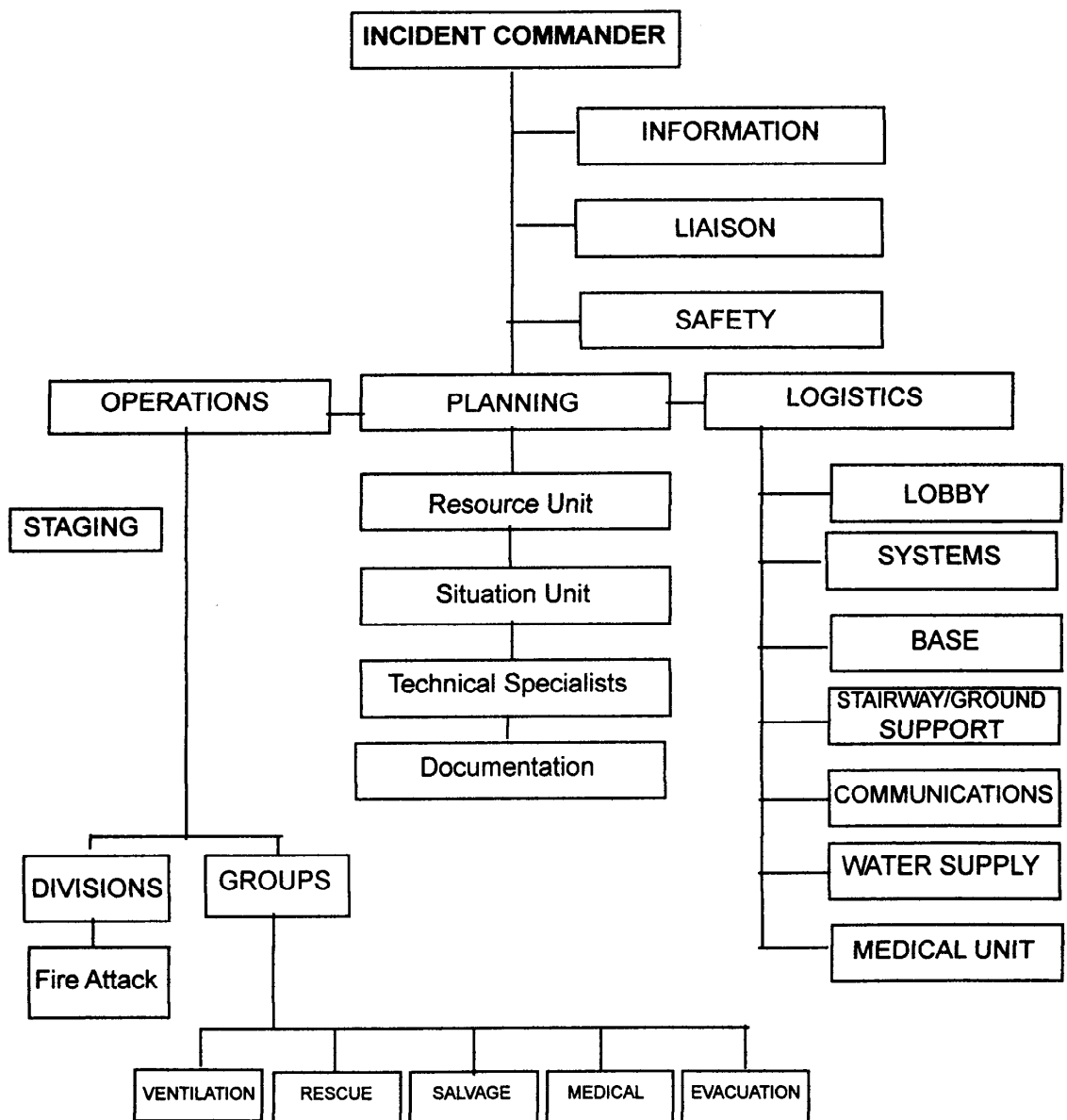
1. Receive a briefing from the Incident Commander.
2. Assess the situation.
3. Provide a point of contact for assisting/cooperating agencies representatives.
4. When required, arrange for meetings between agency representatives and appropriate incident personnel.
5. Establish a continual communications link between yourself and the I.C. and between yourself and other liaison counterparts.
6. Respond to requests from incident personnel for information or services required of assisting/cooperating agencies.
7. Provide agency representatives with equipment, as required.
8. Perform other duties as directed.
9. Maintain a log of activities.

THE LIAISON OFFICER IS A COMMAND STAFF OFFICER AND REPORTS DIRECTLY TO THE INCIDENT COMMANDER.

OPERATIONS OFFICER

THE OPERATIONS CHIEF IS RESPONSIBLE FOR THE MANGEMENT OF ALL OPERATIONS DIRECTLY APPLICABLE TOT HE PRIMARY MISSION, HE/SHE ACTIVATES AND SUPERVISES ELEMENTS IN ACCORDANCE WITH THE ACTION PLAN.

Radio designation: "OPERATIONS"
 Channel: BATTALION "TACTICAL" CHANNEL (A7-A16)
 FIREGROUND "COMMAND" CHANNEL (A7-A16)



OPERATIONS SECTION CHIEF CHECKLIST

This checklist is provided to the Operations Section Chief in order to assist him/her in Operations management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

When an Operations Section is established, the Operations Chief will:

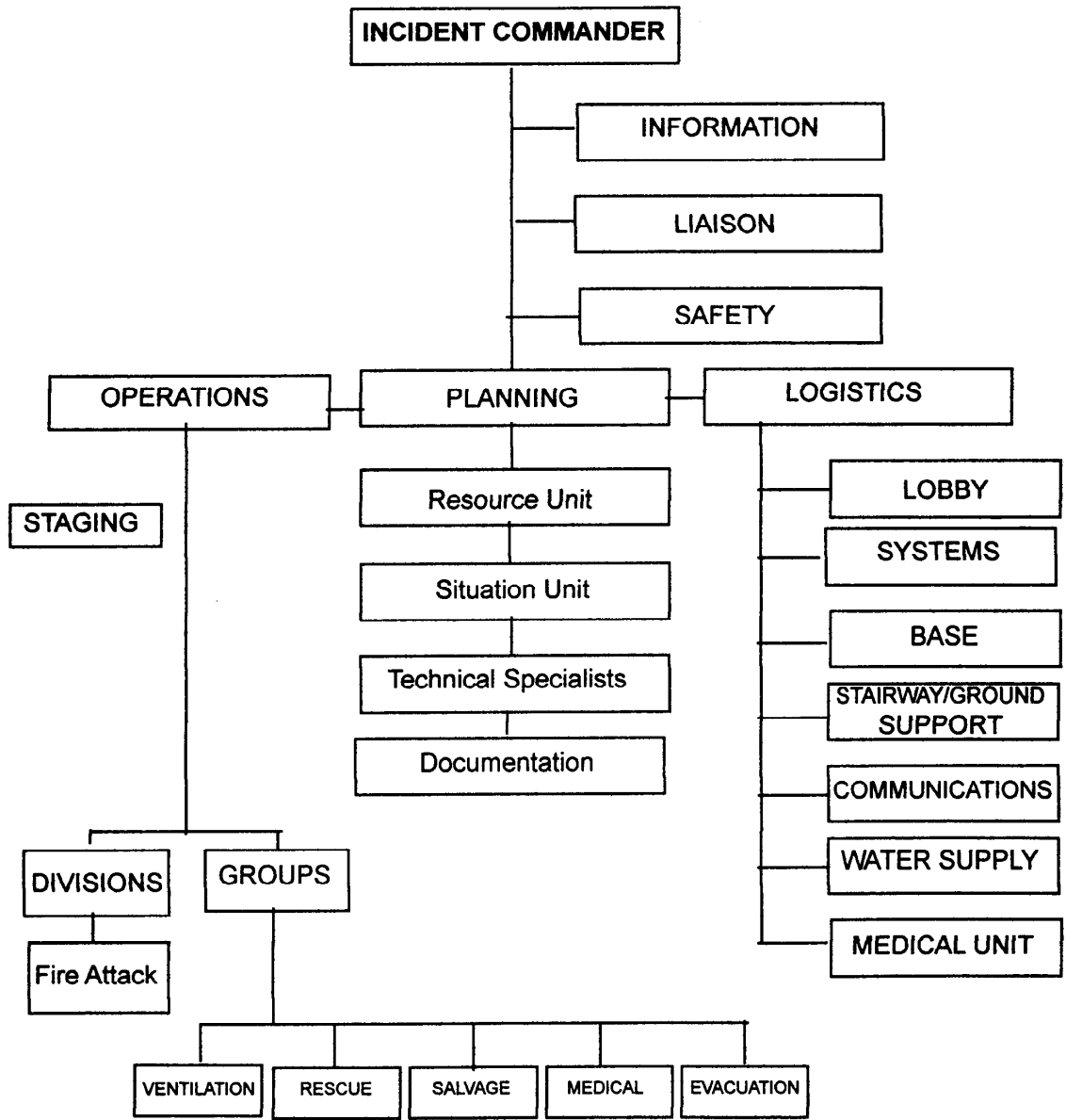
1. Receive a briefing from the Incident Commander.
2. Supervise and direct all tactical operations.
3. Assign/Supervise Division and Group Supervisors.
4. Establish communications with Division/Group Supervisors and the Incident Commander.
5. Request periodic progress updates from the Divisions, Groups, and Single Resources, which are under his/her supervision.
6. Establish and staff Staging Areas as needed.
7. Consult and collaborate with Planning and Logistics Chiefs
8. Determine immediate and anticipated tactical needs and request additional resources.
9. Communicate these needs to the IC and Logistics.
10. Develop Operations segment of the Incident Action Plan.
11. Modify the Action Plan as necessary to meet changing conditions, keeping the IC informed of changes.
12. Keep IC informed of any special conditions or activities.

THE OPERATIONS CHIEF REPORTS TO THE INCIDENT COMMANDER.

STAGING AREA MANAGER

THE STAGING AREA MANAGER IS RESPONSIBLE FOR DOCUMENTING THE CHECK-IN OF COMPANIES AND THE ESTABLISHMENT OF EQUIPMENT AND PERSONNEL RESERVES IN SUPPORT OF OPERATIONS

Radio designation: "STAGING"
CHANNEL: BATTALION "TACTICAL" CHANNEL (A7-A16)
FIREGROUND "COMMAND" CHANNEL (A7-A16)
Monitored by assigned Chiefs Aide or Company



STAGING AREA OFFICER CHECKLIST

This checklist is provided to the Staging Area Officer in order to assist him/her in Staging Area Management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

When assigned as a Staging Area Supervisor, the Staging Officer will:

1. Receive a situation briefing from the Incident Commander/Operations Chief.
2. Assess Situation.
3. Establish Communications link with IC & Operations. Advise when staging is operational.
4. Locate, Prepare, and Identify location of Staging Area. Establish Staging Area layout.
5. Manage All Staging Area Activities

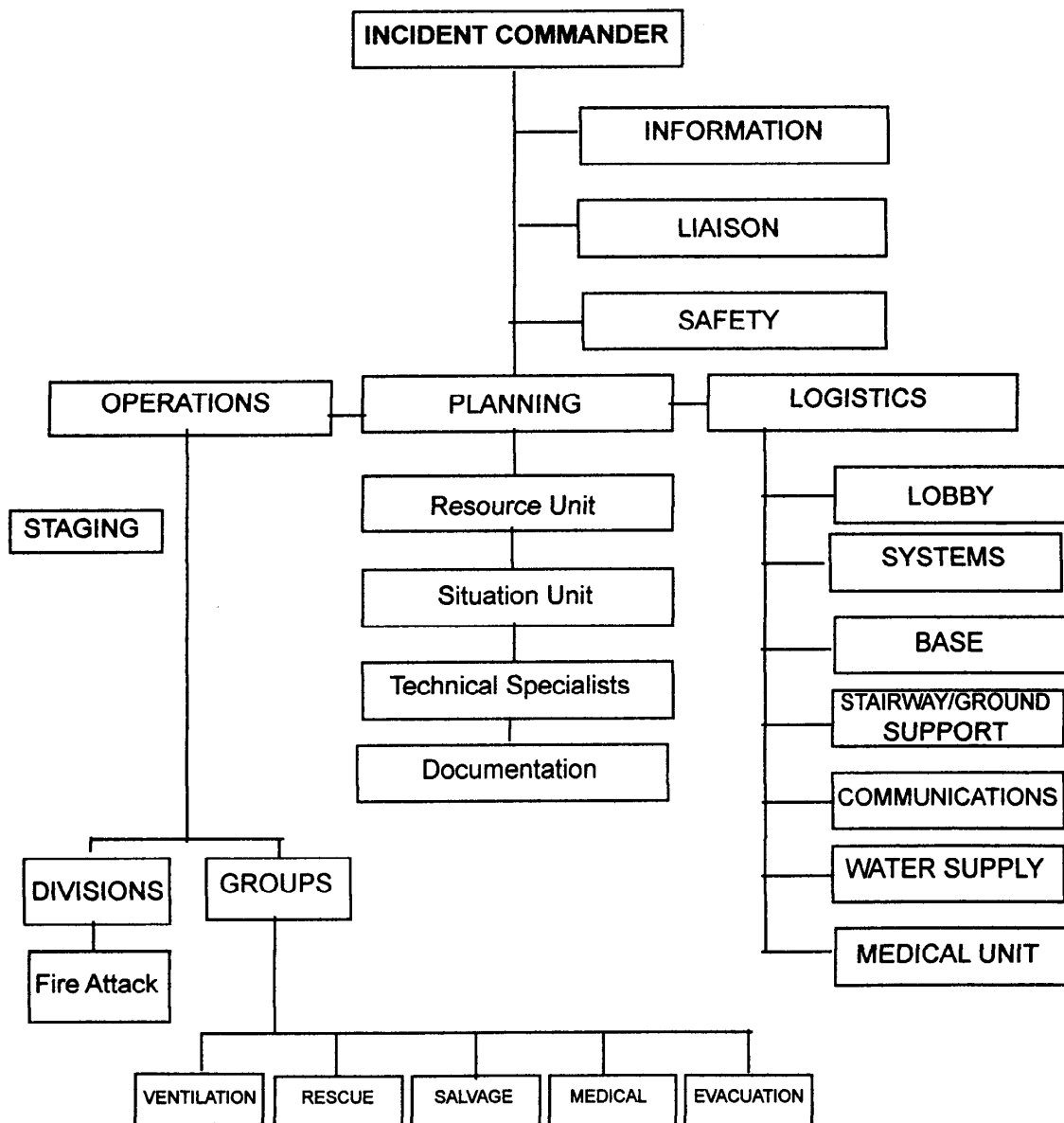
Reserve Personnel Area	- Rehab Area
Reserve Equipment Area	- First Aid Area
Air Cylinder Exchange/Refill Station	- Check-in/Check out Procedure
6. Establish Crew Accountability System (fire crews kept at Staging until assigned).
7. Maintain level of resources as directed by IC/Ops.
8. Coordinate with Logistics/Base when ordering resources to Staging.
9. Maintained control of companies assigned.
10. Maintain Staging Area in orderly condition.
11. Respond to requests for resource assignments from IC/Ops Chief.
12. Maintain log of activities; resources reporting; orders received etc.

THE STAGING OFFICER REPORTS TO THE OPERATIONS SECTION CHIEF OR DIRECTLY TO THE INCIDENT COMMANDER IF AN OPERATIONS SECTION HAS NOT BEEN ESTABLISHED

DIVISION SUPERVISOR

THE DIVISION SUPERVISOR IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE ASSIGNED PORTION OF THE ACTION PLAN, ASSIGNMENT OF RESOURCES, AND REPORTING OF PROGRESS WITHIN THE DIVISION AT A SPECIFIC GEOGRAPHICAL LOCATION.

Radio designation: "DIVISION" (FLOOR #/LOCATION)
 Channel: BATTALION "TACTICAL" CHANNEL (A7-A16)



DIVISION SUPERVISOR CHECKLIST

When assigned as a Division Supervisor, the Division Supervisor will:

1. Receive a situation briefing from the IC/Operations Section Chief.
2. Command Geographical Functions.
3. Keep personnel together and informed of changes in status and assignment.
4. Assign tasks on a company basis. Be specific as to the area of responsibility.
5. Continually evaluate conditions of the Division and keep IC/Operations Section Chief informed.
6. Coordinate activities with adjacent Divisions/Groups.

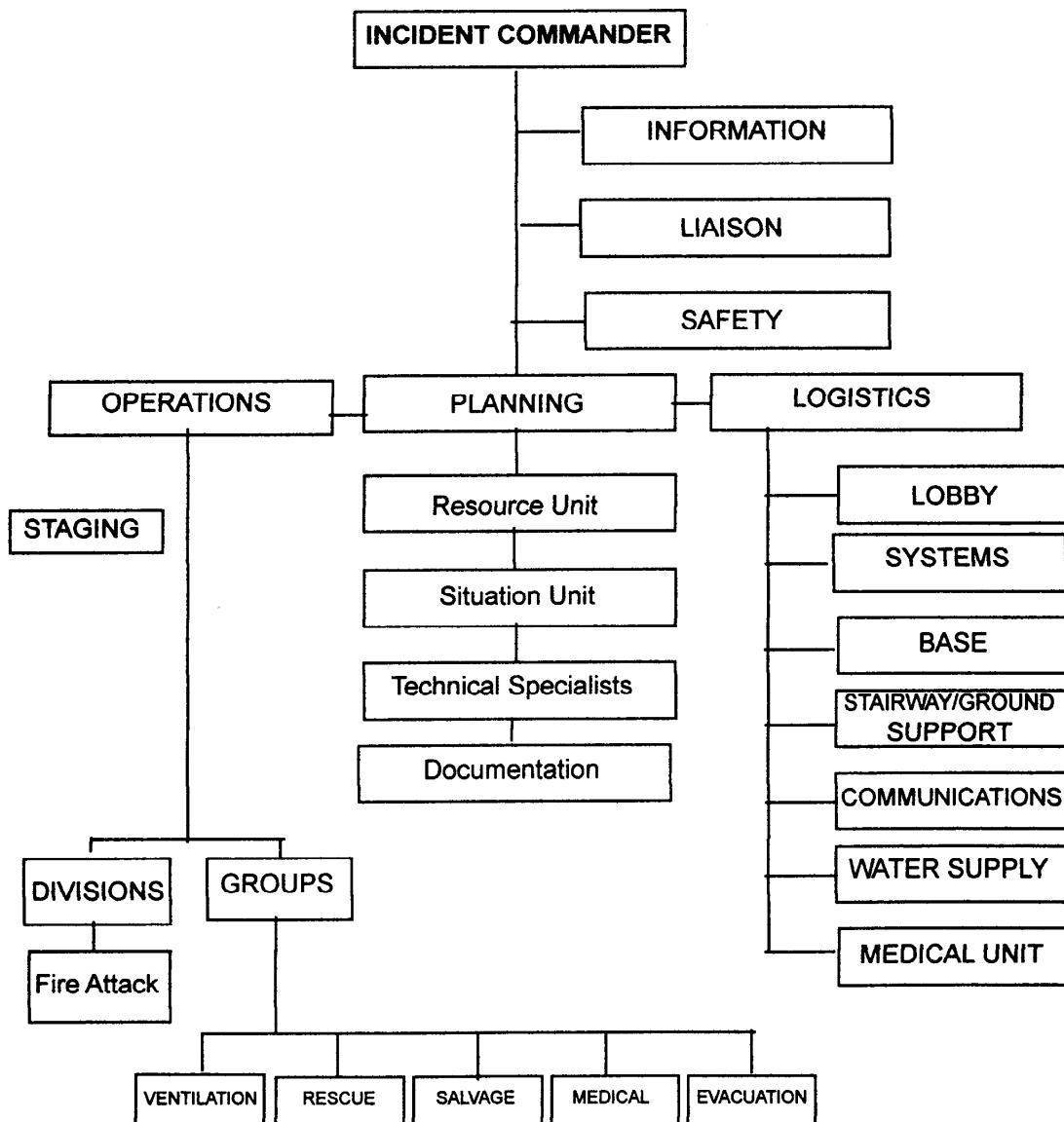
DIVISION SUPERVISORS REPORT TO THE OPERATIONS SECTION CHIEF OR DIRECTLY TO THE INCIDENT COMMANDER IF AN OPERATIONS SECTION HAS NOT BEEN ESTABLISHED.

GROUPS

VENTILATION

THE VENTILATION GROUP SUPERVISOR IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE PORTION OF THE ACTION PLAN ASSIGNED BY THE INCIDENT COMMANDER/OPERATIONS CHIEF, THE ASSIGNMENT OF RESOURCES, AND THE REPORTING OF PROGRESS OF THE VENTILATION GROUP.

Radio designation: "VENTILATION GROUP"
Channel: BATTALION "TACTICAL" CHANNEL (A7-A16)



VENTILATION GROUP SUPERVISOR CHECKLIST

When assigned a Ventilation Group Supervisor:

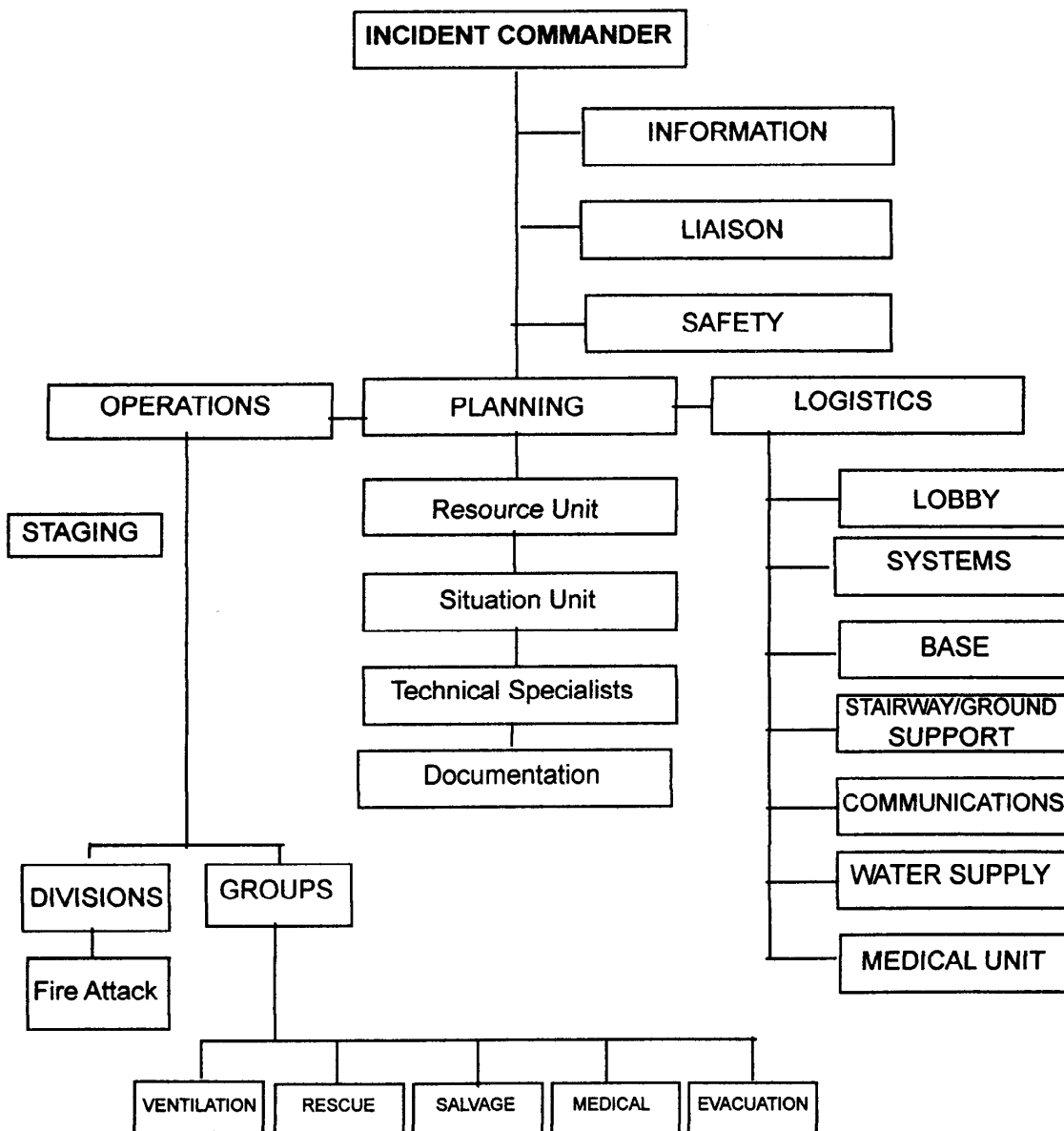
1. Receive situation briefing from IC/Operations Section Chief.
2. Establish communication procedures.
3. Identify ventilation needs and check all floors above the fire.
4. Assess dangerous situations (backdraft, evacuation routes, etc.)
5. Coordinate activities with adjacent Divisions/Groups.
6. Consider various ventilation options:
 - a) Building HVAC System (Consult with IC/Ops/Lobby Control/Systems)
 - b) Vertical Ventilation via a stair shaft that exits to the roof
 - c) Use of Positive Pressure Ventilation (Smoke Blowers)
 - d) Horizontal Ventilation (Windows are NOT to be broken without approval from the Incident Commander). Advise Operations if windows are to be broken.

VENTILATION GROUP SUPERVISOR REPORTS TO THE OPERATIONS SECTION CHIEF OR DIRECTLY TO THE INCIDENT COMMANDER IF AN OPERATIONS SECTION HAS NOT BEEN ESTABLISHED.

RESCUE

THE RESCUE GROUP SUPERVISOR IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE PORTION OF THE ACTION PLAN ASSIGNED BY THE INCIDENT COMMANDER/OPERATIONS CHIEF, THE ASSIGNMENT OF RESOURCES AND REPORTING PROGRESS OF THE RESCUE GROUP.

Radio designation: "RESCUE GROUP"
 Channel: BATTALION "TACTICAL" CHANNEL (A7-A16)



RESCUE GROUP SUPERVISOR

When assigned as Rescue Group Supervisor:

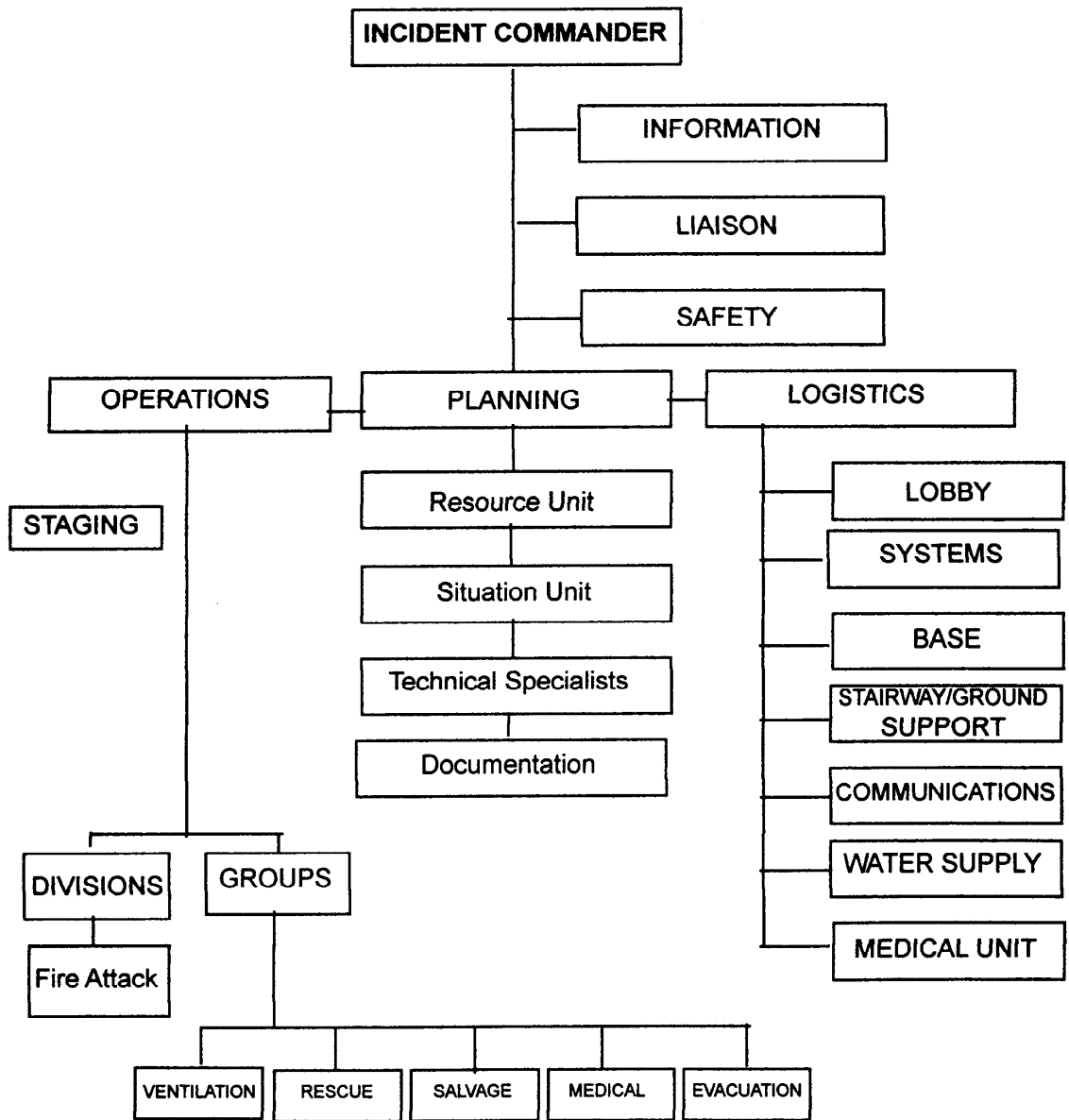
1. Receive situation briefing from IC/Operations Section Chief.
2. Identify Rescue priorities.
3. Inform subordinates regarding strategy, tactics, and assignments.
4. Number of floors to be searched and course taken
5. Smoke conditions
6. Marking signals and equipment required
7. Establish communication method with Operations and within Rescue Group.
8. Coordinate activities with adjacent Divisions/Groups.
9. Determine need for resources.
10. Report resource status changes as required.
11. Request progress reports from team leaders.
12. Notify Operations Section Chief upon completion of search activities on each floor/area.

RESCUE GROUP SUPERVISOR REPORTS TO THE OPERATIONS SECTION CHIEF OR DIRECTLY TO THE INCIDENT COMMANDER IF AN OPERATIONS SECTION HAS NOT BEEN ESTABLISHED.

SALVAGE

THE SALVAGE GROUP SUPERVISOR IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE PORTION OF THE ACTION PLAN ASSIGNED BY THE INCIDENT COMMANDER/OPERATIONS CHIEF, THE ASSIGNMENT OF RESOURCES AND REPORTING PROGRESS OF THE SALVAGE GROUP.

Radio designation: "SALVAGE GROUP"
 Channel: BATTALION "TACTICAL" CHANNEL (A7-A16)



SALVAGE GROUP SUPERVISOR CHECKLIST

When assigned as Salvage Group Supervisor:

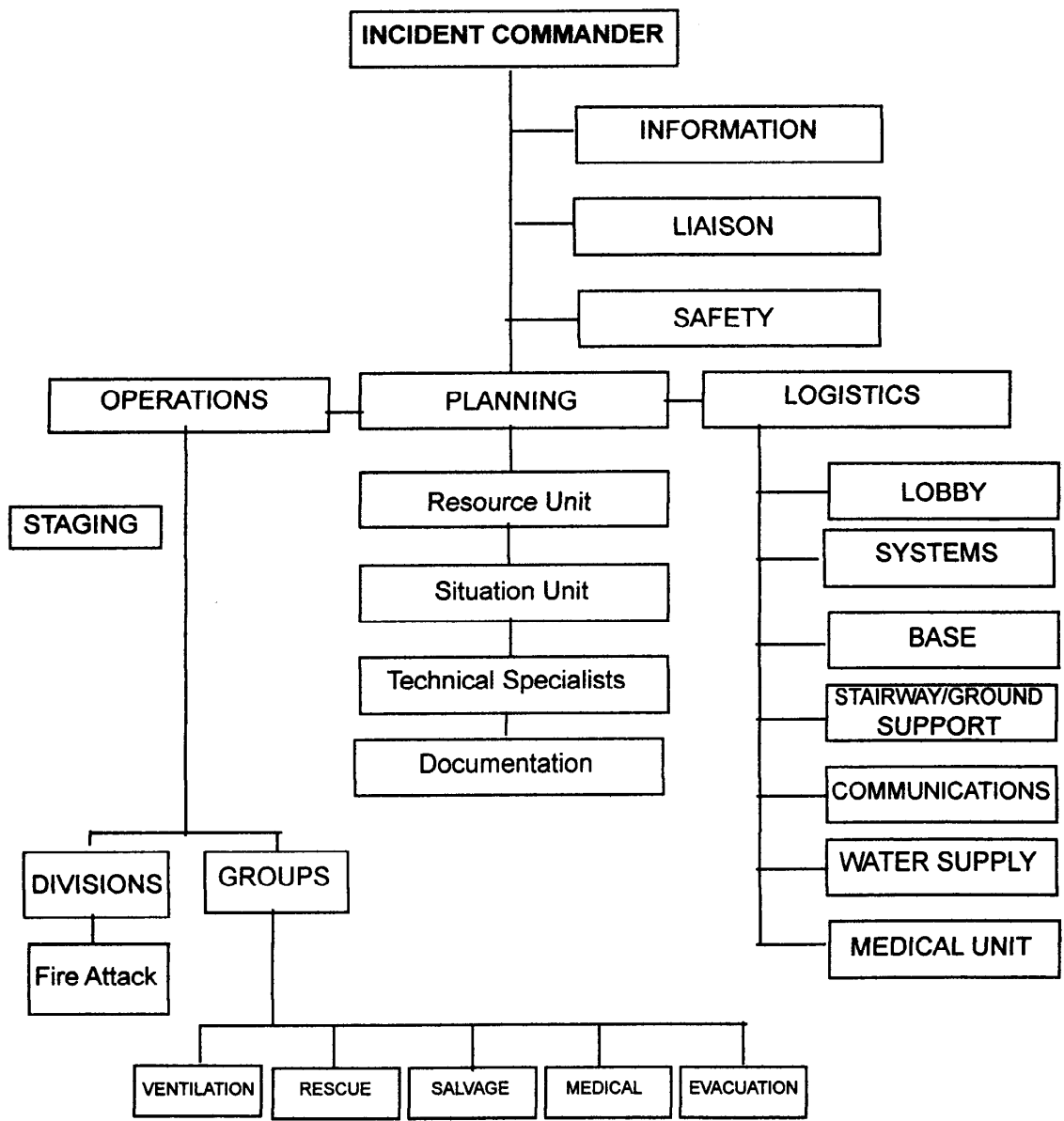
1. Receive situation briefing from IC/Operations Section Chief.
2. Establish communication procedures.
3. Coordinate all salvage operations.
4. Assess situation and determine need for resources.
5. Obtain needed equipment.
6. Inform subordinates regarding strategy, tactics, and assignments.
7. Request periodic status reports from officers assigned to your group.
8. Maintain log of activities and pertinent information.

SALVAGE GROUP SUPERVISOR REPORTS TO THE OPERATIONS SECTION CHIEF OR DIRECTLY TO THE INCIDENT COMMANDER OF AN OPERATIONS SECTION HAS NOT BEEN ESTABLISHED.

MEDICAL

THE MEDICAL GROUP SUPERVISOR IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE PORTION OF THE ACTION PLAN ASSIGNED BY THE INCIDENT COMMANDER/OPERATIONS CHIEF, THE ASSIGNMENT OF RESOURCES AND THE REPORTING OF PROGRESS OF THE MEDICAL GROUP.

Radio designation: "MEDICAL GROUP"
 Channel: BATTALION "TACTICAL" CHANNEL (A7-A16)



MEDICAL GROUP SUPERVISOR CHECKLIST

When assigned as Medical Group Supervisor:

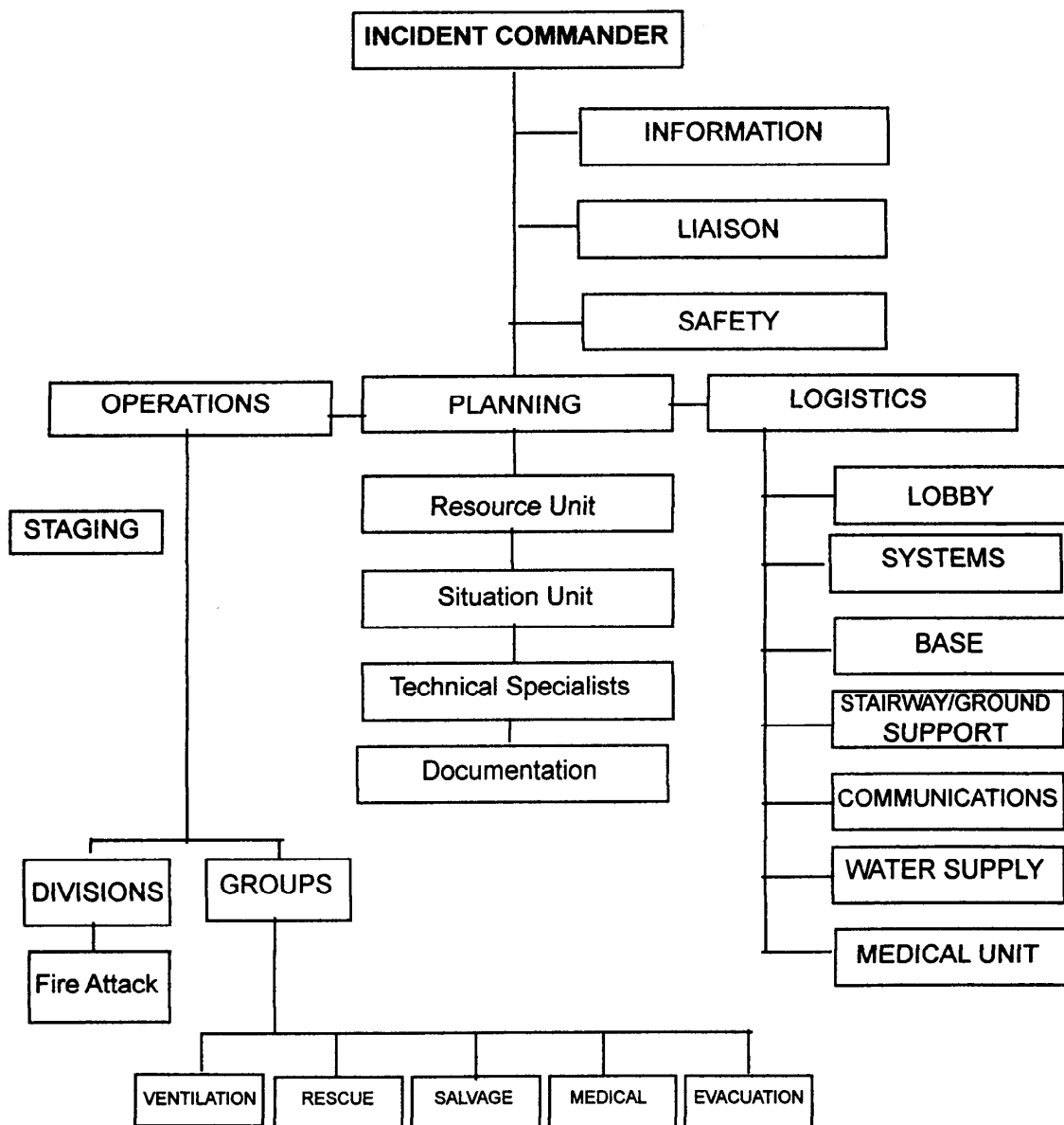
1. Receive situation briefing from the IC/Operations Section Chief.
2. Establish communication procedures.
3. Assess situation.
4. Appoint and brief staff, as needed
 - a) Triage Team Leader
 - b) Treatment Team Leader
 - c) Transportation Team Leader
 - d) Morgue Team Leader
5. Establish communications procedure with team leaders and request periodic progress reports.
6. Coordinate location of Triage, Treatment, Ambulance Loading, and Morgue Areas with team leaders.
7. Establish coordination with Rescue and Evacuation Group Supervisors.
8. Contact coroner via chain of command if necessary.

THE MEDICAL GROUP SUPERVISOR REPORTS TO THE OPERATIONS SECTION CHIEF OR DIRECTLY TO THE INCIDENT COMMANDER IF AN OPERATIONS SECTION HAS NOT BEEN ESTABLISHED.

EVACUATION

THE EVACUATION GROUP SUPERVISOR IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE PORTION OF THE ACTION PLAN ASSIGNED BY THE INCIDENT COMMANDER/OPERATIONS CHIEF, THE ASSIGNMENT OF RESOURCES AND THE REPORTING OF PROGRESS OF THE EVACUATION GROUP.

Radio Designation: "EVACUATION GROUP"
 Channel: BATTALION "TACTICAL" CHANNEL (A7-A16)



EVACUATION GROUP SUPERVISOR CHECKLIST

When assigned as Evacuation Group Supervisor:

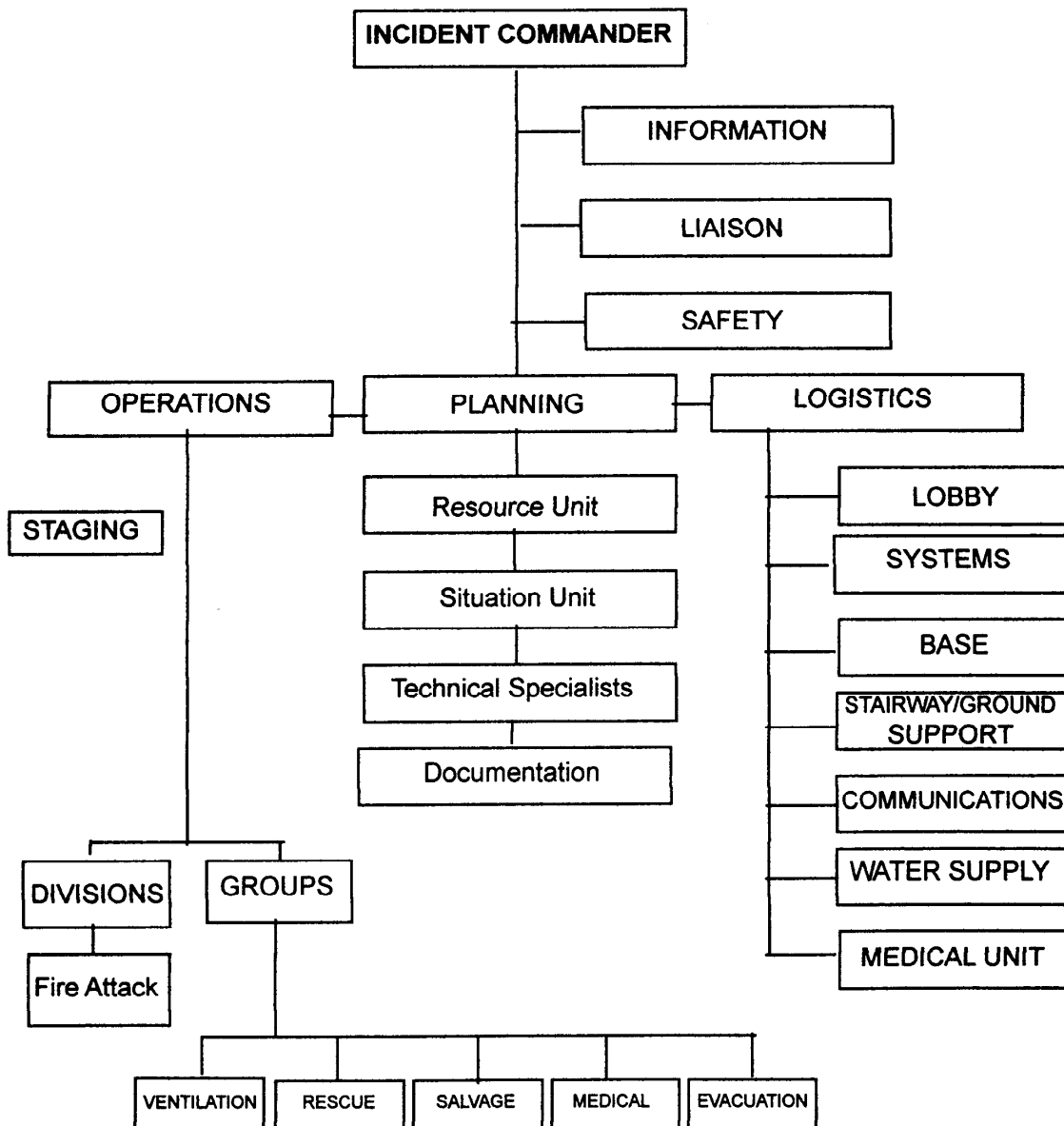
1. Receive situation briefing from the IC/Operations Section Chief.
2. Establish communication procedures.
3. Establish priorities:
4. Ambulatory or non-ambulatory
5. Relocate to safe area or total evacuation
6. Establish a safe location and route of travel for evacuees
7. Use the non-injured to assist the injured during evacuation.
8. Coordinate activities with adjacent Divisions/Groups. Keep Operations Section Chief informed of Groups progress (Stairwell being used/conditions encountered).
9. Request progress reports from team leaders.

THE EVACUATION GROUP SUPERVISOR REPORTS TO THE OPERATIONS SECTION CHIEF OR DIRECTLY TO THE INCIDENT COMMANDER IF AN OPERATIONS SECTION HAS NOT BEEN ESTABLISHED.

LOGISTICS

THE LOGISTICS CHIEF IS RESPONSIBLE FOR PREPARING AND IMPLEMENTING A PLAN TO SUPPORT THE RESCUE AND SUPPRESSION FORCES, THE BUILDING SYSTEMS AND THE COMMAND AND GENERAL STAFF.

Radio designation: "LOGISTICS"
 Channel: "LOGISTICS TACTICAL" CHANNEL (A7-A16)
 FIREGROUND "COMMAND" CHANNEL (A7-A16) Chief
 Aide Monitors



LOGISTICS SECTION CHIEF CHECKLIST

This checklist is provided to the Logistics Section Chief in order to assist him/her in Logistics management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident

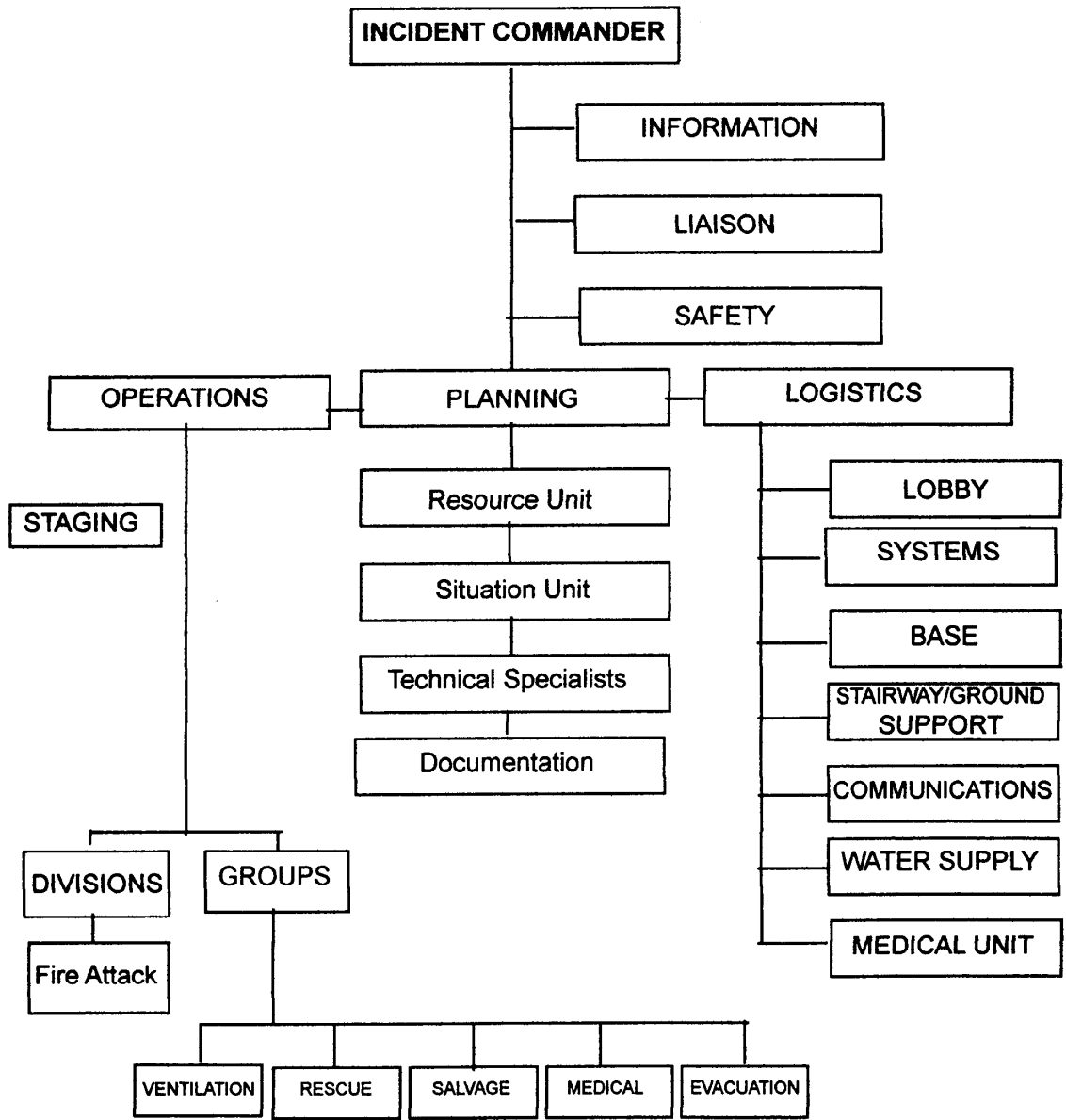
When this section is activated the Logistics Section Chief will:

1. Receive a situation briefing from the Incident Commander.
2. Designate units in the Logistics Section to be activated.
3. Establish Communications Procedures for Logistics Section.
4. Develop Plan for Logistics System. Establish and supervise the activities of Lobby Control, Base, Stairwell/Ground Support, etc.
5. Establish and supervise other Logistical Units as needed (Systems, Communications, Water Supply, Medical Unit)
6. Determine Resource levels needed for:
 - a) Operations activities
 - b) Logistics activities
 - c) Reserves
7. Coordinate with Staging Officer to ensure proper flow of personnel and equipment to Staging Area.
8. Coordinate with Incident Commander and request additional resources as needed.
9. Perform other duties as required by the Incident Commander.
10. Maintain a log of activities.

THE LOGISTICS SECTION CHIEF REPORTS DIRECTLY TO THE INCIDENT COMMANDER.

LOBBY CONTROL

Radio designation: "LOBBY CONTROL"
Channel: "LOGISTICS TACTICAL" CHANNEL (A7-A16)



LOBBY CONTROL UNIT LEADER CHECKLIST

This checklist is provided to the Lobby Control Unit Leader in order to assist him/her in managing Lobby Control activities. The checklist is not to be considered as a complete list of responsibilities. Some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

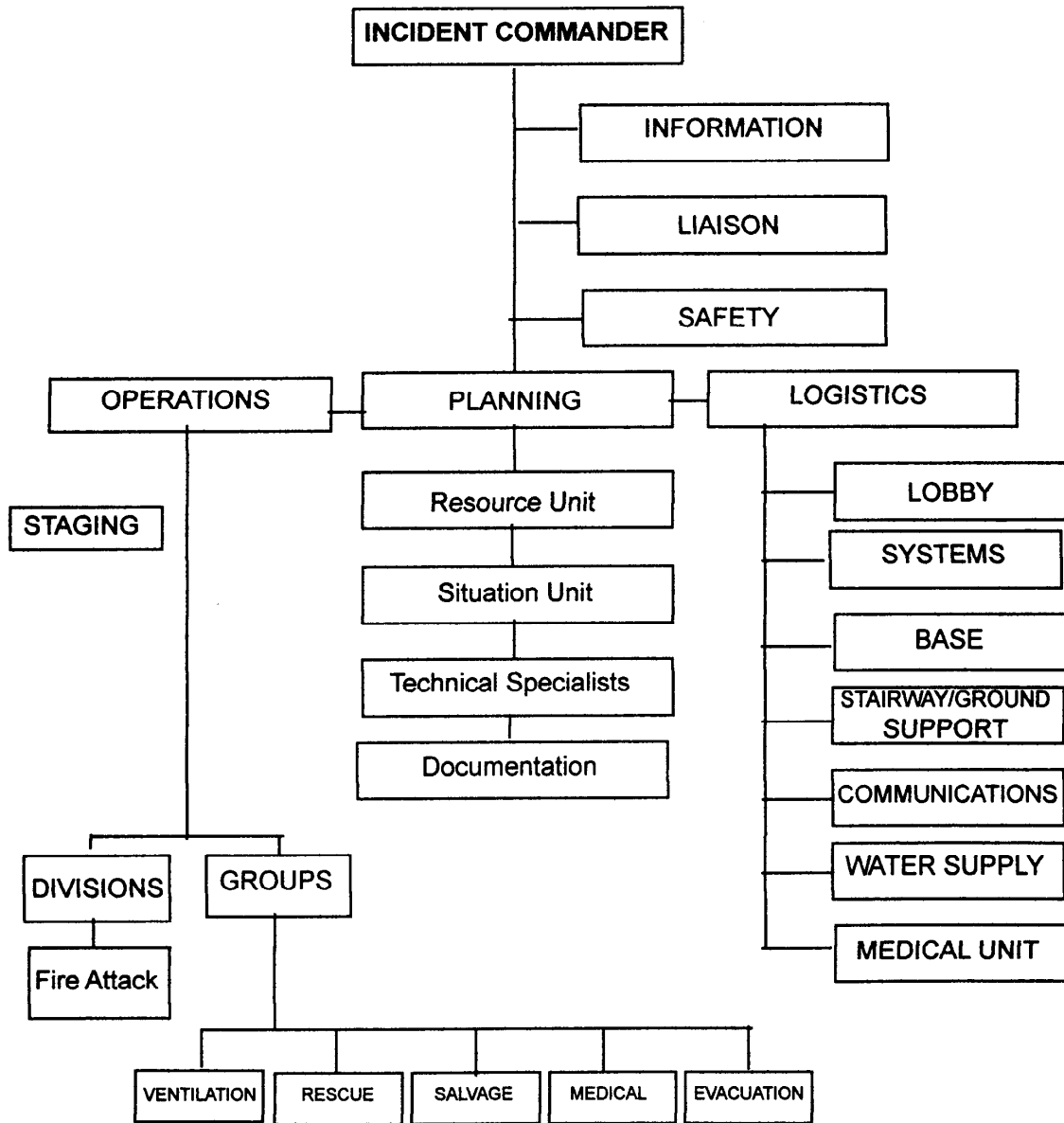
The officer assigned, as Lobby Control Unit Leader will:

1. Receive a situation briefing from the Incident Commander or Logistics Section Chief.
2. Assess situation and establish Lobby Control position.
3. Determine Communications Procedures.
4. Establish entry/exit control at all building access points.
5. Establish personnel accounting system for personnel entering/exiting building
6. Assume control of elevators and provide operators.
7. Assign officer to perform basic systems monitoring and control functions and to monitor activities at the Building Control Station. Contact Building
8. Engineer to assist with:
 - a) Fire Alarm Panel
 - b) Phone Systems
 - c) Elevator Status
 - d) HVAC System
 - e) Stairwell Doors
 - f) Water Supply Systems
 - g) Public Address System
9. Provide briefings and information to the Incident Command Post.
10. Direct personnel to appropriate stairways/elevator for assignment (fire attack, evacuation, resource movement). Maintain, issue, retrieve keys & firefighter phones as necessary. Direct evacuees and exiting personnel to safe areas or routes from the building.
11. Maintain unit records and log of activities.

**LOBBY CONTROL UNIT LEADER REPORTS TO INCIDENT COMMAND POST
AND LOGISTICS SECTION CHIEF**

SYSTEMS

Radio designation: "SYSTEMS"
Channel: "LOGISTICS TACTICAL" CHANNEL (A7-A16)



SYSTEMS UNIT LEADER CHECKLIST

This checklist is provided to the Systems Unit Leader in order to assist him/her in Building Systems Management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

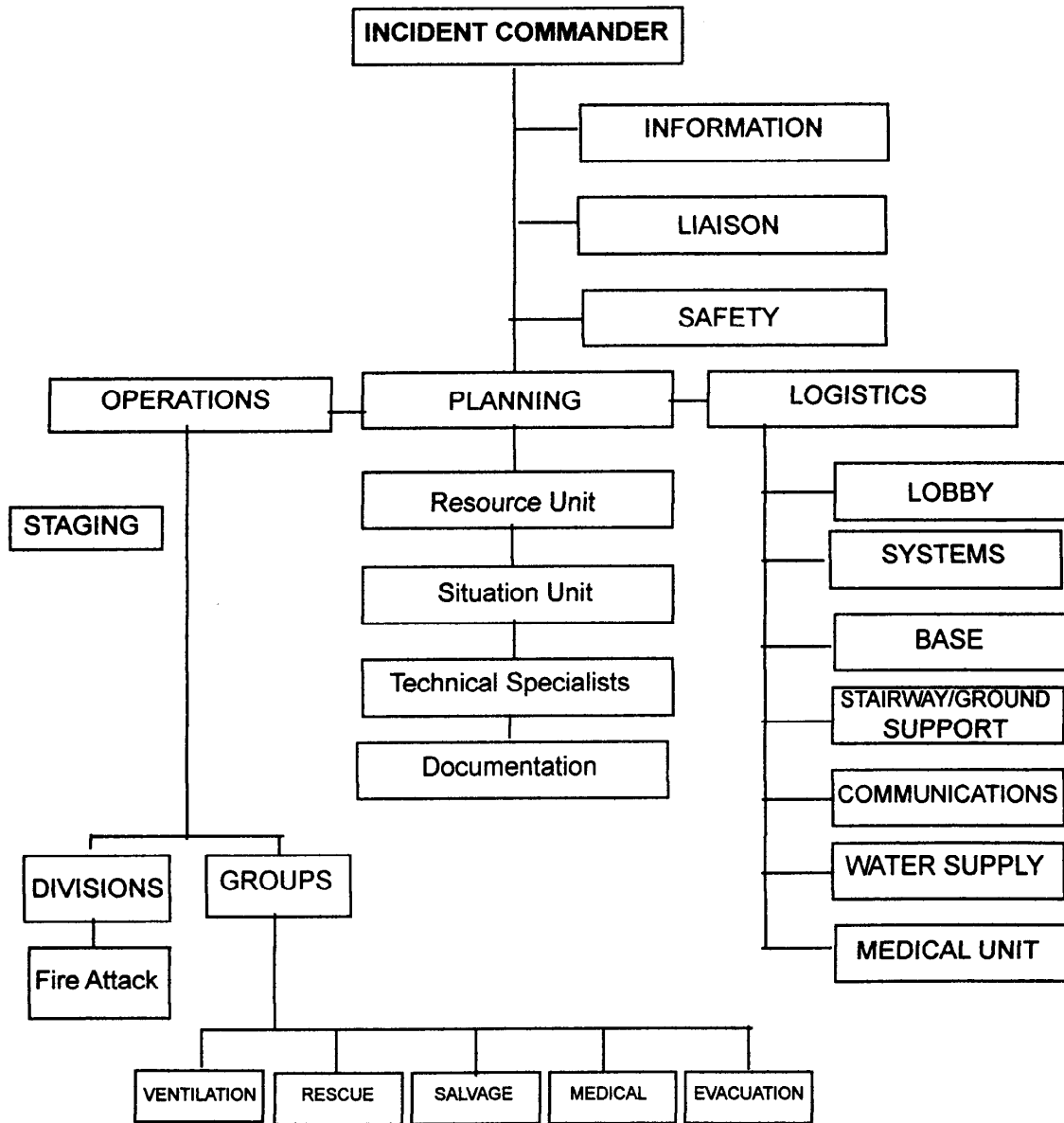
When this unit is activated the Systems Unit Leader will:

1. Receive a situation briefing from the Incident Commander/Logistics Section Chief.
2. Assess current situation and request personnel and resources.
3. Establish Unit Communications Procedures.
4. Request response, and make contact with, the Building/Facility Engineer, utility company representatives, elevator service personnel and others as appropriate.
5. Appoint personnel to monitor and operate building system display/control panels and building communication systems.
6. Evaluate status and operation of the fire and domestic water pumps and water supply. Support or repair as required.
7. Evaluate and operate as required the HVAC System and the smoke removal and stairwell protection systems.
8. Evaluate, support, and control as needed the building electrical system and emergency power plant.
9. Evaluate and support as needed the public address, telephone, emergency phone, and other communications systems.
10. Coordinate unit activities with Lobby Control. Keep the IC/Operations/Logistics Chiefs advised of unit activities. Maintain a Unit Log.

THE SYSTEMS UNIT LEADER REPORTS TO THE INCIDENT COMMAND POST AND THE LOGISTICS SECTION CHIEF.

BASE

Radio designation: "BASE"
Channel: "LOGISTICS TACTICAL" CHANNEL (A7-A16)



BASE MANAGER CHECKLIST

This checklist is provided to the Base Manager in order to assist him/her in Base Area management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

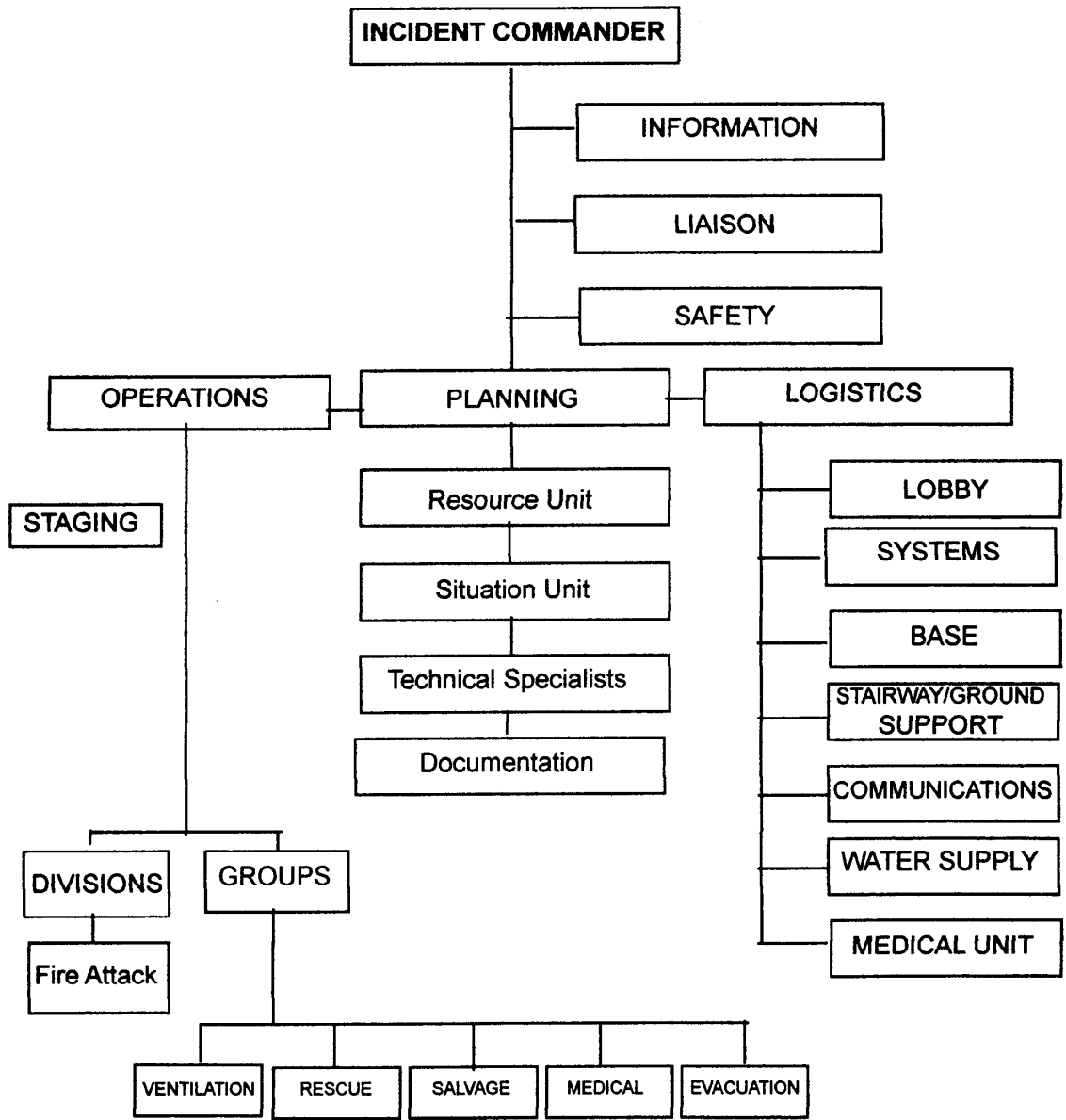
The person assigned, as the Base Manager will:

1. Receive a situation briefing from the Incident Commander/Logistics Chief.
2. Verify Base location with IC/Logistics Chief (minimum 200' from structure).
3. Establish Communications Procedures.
4. Determine personnel and resources needed to perform Base functions and request support from IC/Logistics Chief.
5. Establish Base Area layout and establish check-in/check-out procedures.
6. Request SFPD to assist in Traffic Control/Parking Plan/Base Security.
7. Instruct responding Companies as to where to park. Maintain the area in an orderly condition.
8. Determine resource levels to be kept at Base from IC/Logistics Chief and order as appropriate through the Command Post (IC).
9. Manage all activities at Base. Obtain necessary equipment and supplies.
 - a) Crew Ready Area
 - b) Equipment Pool
 - c) Rehab Area
10. Deliver personnel and equipment to designated locations as required by
11. IC/Operations Chief/Logistics Chief/Staging Area Manager. Keep Firefighting Crews at Base until assigned.
12. Coordinate activities with Staging Area Manager and Stairwell/Ground Support Unit Leader.
13. Maintain a log of activities and a record of companies and equipment at Base.

THE BASE MANAGER REPORTS TO THE LOGISTICS SECTION CHIEF OR DIRECTLY TO THE INCIDENT COMMANDER IF A LOGISTICS SECTION HAS NOT BEEN ESTABLISHED.

GROUND SUPPORT UNIT

Radio designation: "GROUND SUPPORT"
Channel: "LOGISTICS TACTICAL" CHANNEL (A7-A16)



GROUND SUPPORT UNIT LEADER CHECKLIST

This checklist is provided to the Stairwell/Ground Support Unit Leader in order to assist him/her in performing support activities during a High Rise incident. The checklist is not to be considered as a complete list of responsibilities. Some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

When this unit is activated the Stairwell/Ground Support Unit Leader will:

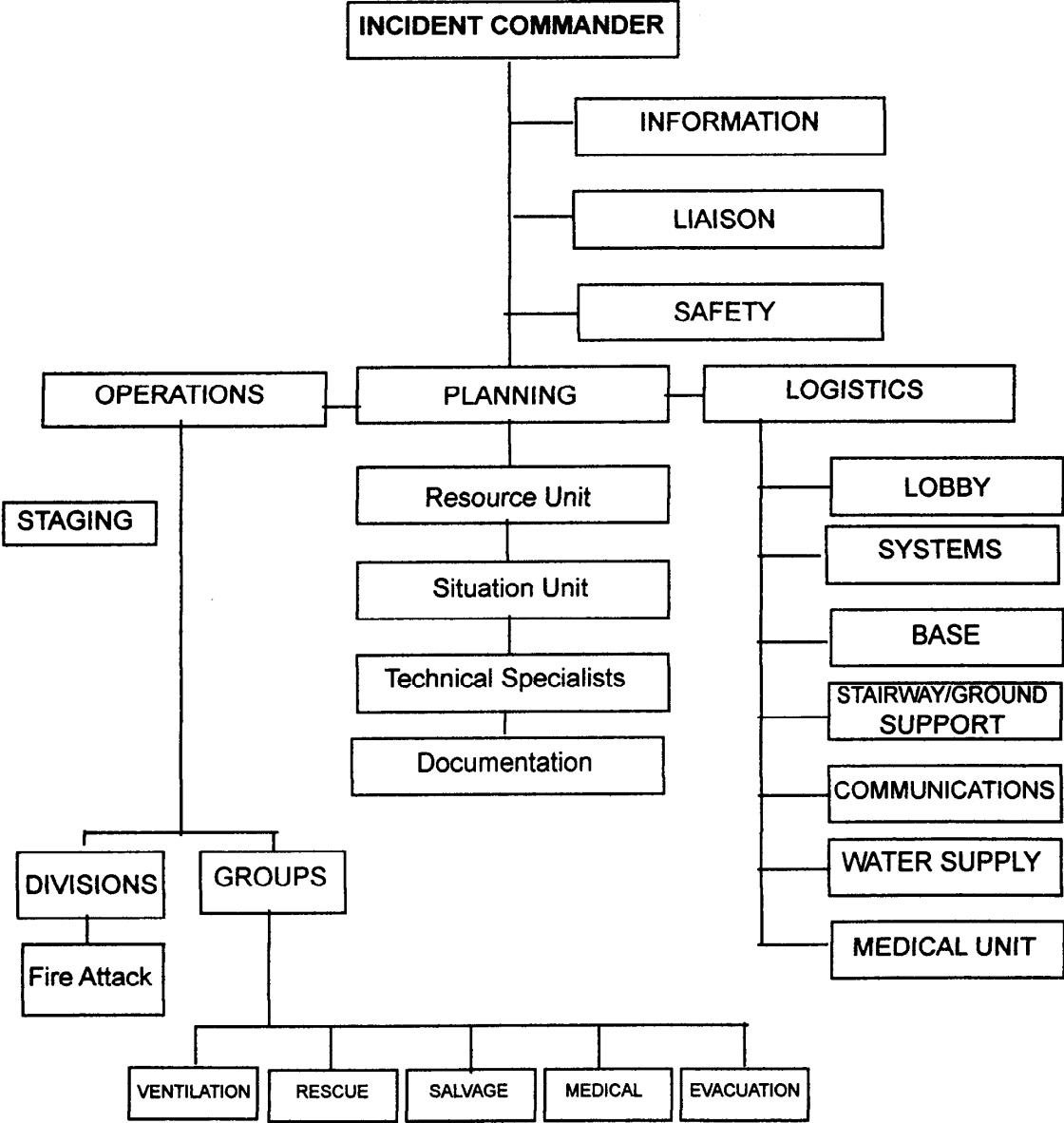
1. Receive a situation briefing from the Incident Commander or Logistics Section Chief.
2. Assess situation and establish Communications Procedures.
3. Identify method(s) to be used for resource movement:
 - a) identify stairwell to be used
 - b) identify elevator(s) to be used (when approved by IC).
4. Coordinate with Lobby Control/Base Manager/Staging Manager and move priority equipment from Base to Staging Area.
5. Position and brief personnel:
 - a) Stairway - one carrier to every two floors
 - b) Stairway/elevator - one officer per 4 or 5 members
 - c) Elevator - coordinate with Lobby Control personnel (IC must approve).
6. Provide personnel proper equipment
 - a) SCBA
 - b) Flashlight
 - c) Communication Capability (Phone/Officers Radio)
7. Locate, organize, operate SCBA air cylinder refilling/exchange/delivery system for tactical personnel. Coordinate with Base, Staging, and Service Squad.
8. Anticipate resource needs: 1) to implement positive pressure ventilation instairwells; 2) to implement auxiliary water supply system as directed by IC.
9. Require periodic status checks from personnel and relay to Logistics Chief.

APPENDIX A: INCIDENT COMMAND SYSTEM CHECKLISTS

THE STAIRWELL/GROUND SUPPORT UNIT LEADER REPORTS TO THE LOGISTICS SECTION CHIEF OR TO THE INCIDENT COMMANDER IF LOGISTICS SECTION HAS NOT BEEN ESTABLISHED.

COMMUNICATIONS UNIT

Radio designation: "COMMUNICATIONS"
Channel: "LOGISTICS TACTICAL" CHANNEL (A7-A16)



COMMUNICATIONS UNIT LEADER CHECKLIST

This checklist is provided to the Communications Unit Leader in order to assist him/her in Communication Systems Management. This checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

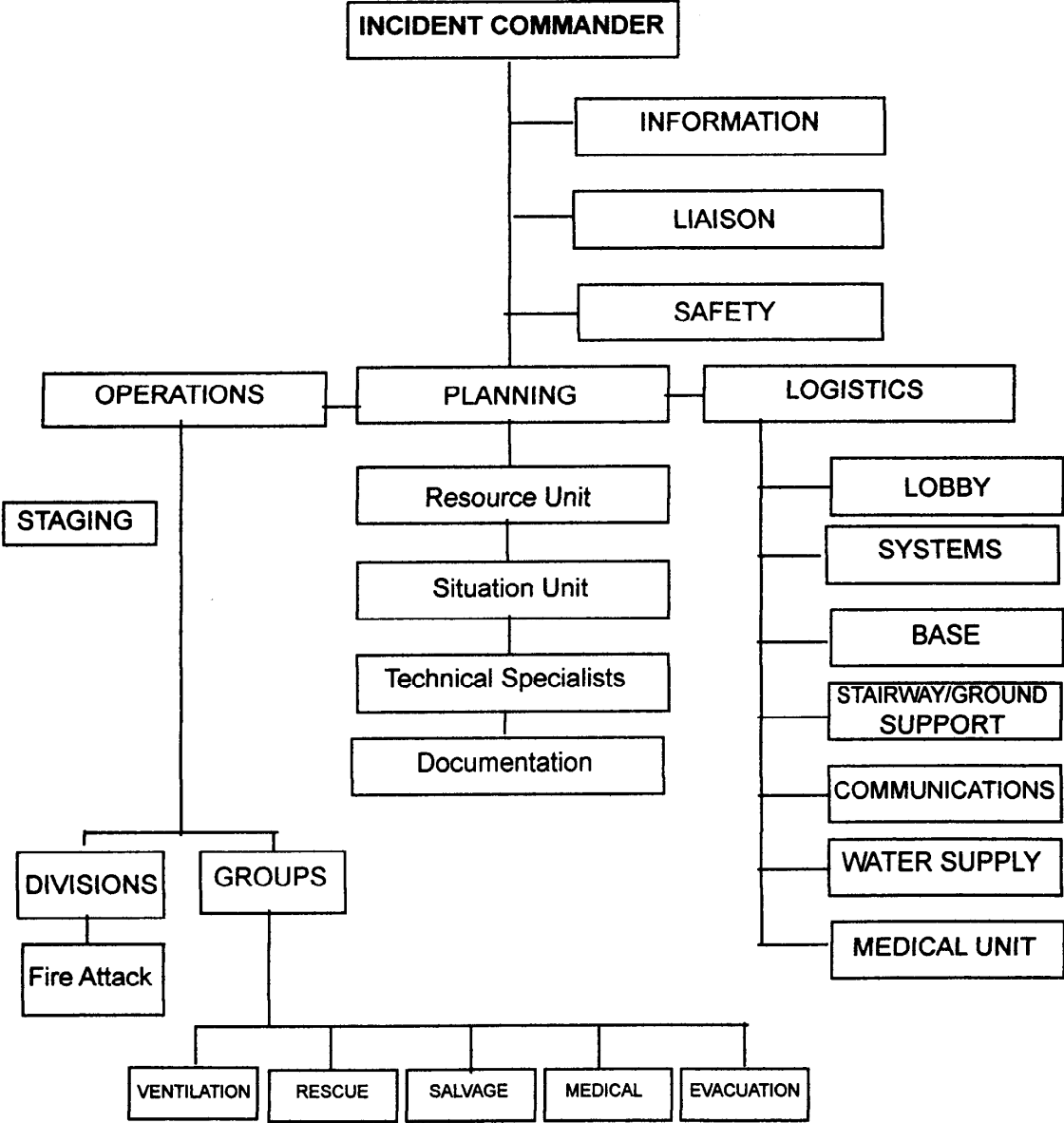
When this unit is activated the Communications Unit Leader will:

1. Receive a situation briefing from the Incident Commander or the Logistics Section Chief.
2. Assess situation and current communication systems performance.
3. Determine communication needs, equipment, limitations.
4. Prepare and implement Communications Plan to provide required communications support.
5. Determine need for assistants/runners.
6. Coordinate with Lobby Control and Systems Unit (if established). Request assistance from building staff and/or technical specialists in maintaining building communication systems.
7. Identify and provide necessary radio channels. Coordinate with Communications Center.
8. Collect, distribute, document, and recover communication equipment, which may include portable radios, cellular phones, and batteries.
9. Monitor the operations of communication systems.
10. Maintain log of unit activities. Keep Command Post/Logistics Section Chief informed of unit activities.

THE COMMUNICATIONS UNIT LEADER REPORTS TO THE INCIDENT COMMAND POST AND LOGISTICS SECTION CHIEF.

WATER SUPPLY

Radio designation: "WATER SUPPLY"
Channel: "LOGISTICS TACTICAL" CHANNEL (A7-A16)



WATER SUPPLY OFFICER CHECKLIST

This checklist is provided to the Water Supply Officer in order to assist him/her in Water Supply management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

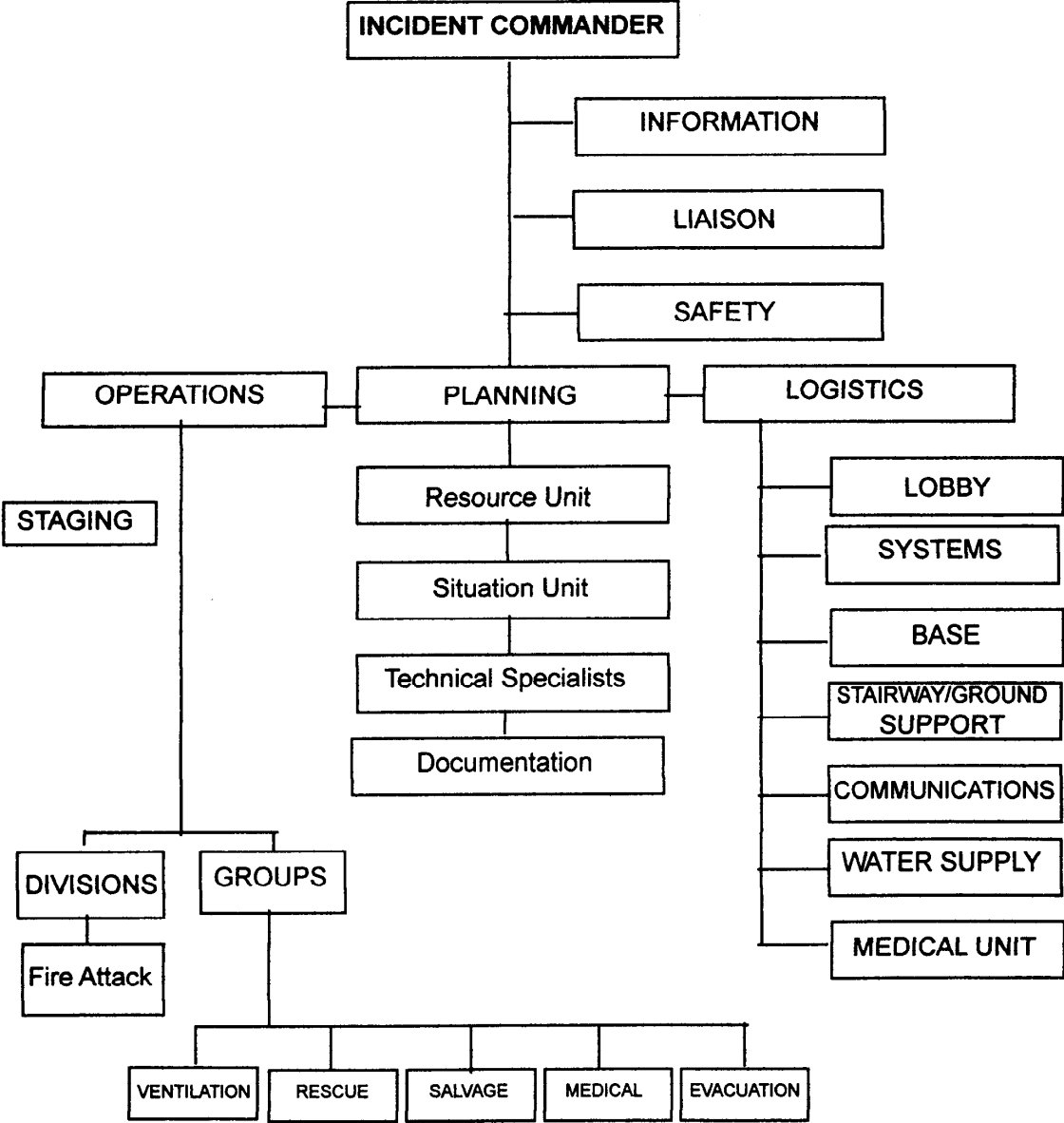
The officer assigned, as Water Supply Officer will:

1. Receive a situation briefing from the Incident Commander/Logistics Section Chief.
2. Establish Communication Procedures.
3. Determine the water supplies available within the incident area.
4. Review the SFFD Emergency Water Supply Manual and/or the SFFD Auxiliary Water Supply System (AWSS)-High Pressure System Maps. These information sources are carried in all Chief Officer's vehicles.
5. Determine resources and equipment needed to supply water to the incident.
6. Formulate a water supply plan for approval of the IC/Logistics Section Chief.
7. Order equipment and resources as needed (Incident Commander).
8. Request response of SF Water Department and AWSS personnel to assist.
9. Direct water supply operations as approved by the IC/Logistics Section Chief.
10. Maintain log of activities.

THE WATER SUPPLY OFFICER REPORTS TO THE LOGISTICS SECTION CHIEF OR TO THE INCIDENT COMMANDER IF A LOGISTICS SECTION HAS NOT BEEN ESTABLISHED.

MEDICAL UNIT

Radio designation: "MEDICAL UNIT"
Channel: "LOGISTICS TACTICAL" CHANNEL (A7-A16)



MEDICAL UNIT LEADER CHECKLIST

This checklist is provided to the Medical Unit Leader in order to assist him/her in Medical Services management. The checklist is not to be considered as a complete list of responsibilities. It should be noted that some of the activities that are listed only have to be performed one time during the incident while others are ongoing or repetitive for the duration of an incident.

When this unit is activated the Medical Unit Leader will:

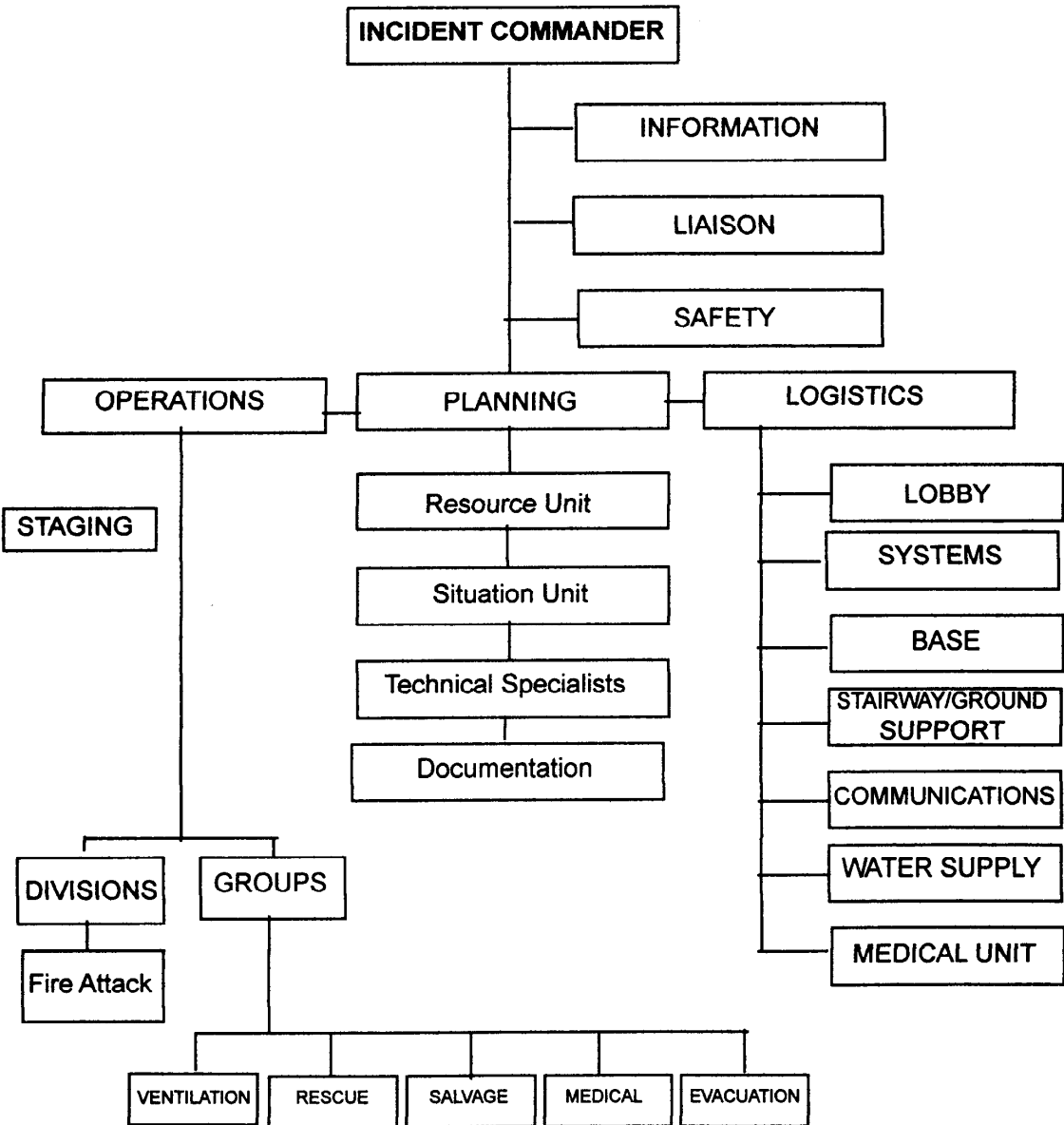
1. Receive situation briefing from the Incident Commander/Logistics Section Chief.
2. Establish Communication Procedures.
3. Assess current situation and request needed resources and personnel.
4. Coordinate activities with Logistics Chief/Operations Chief/Staging Area Manager/Base Manager/Safety Officer.
5. Develop Incident Medical Plan for approval of Logistics Section Chief and the Safety Officer.
6. Establish Medical Aid Stations
 - a) Staging
 - b) Base or at appropriate ground level location
7. Provide medical aid and transportation for personnel assigned to incident.
8. Coordinate activities with Operations/Medical Group Supervisor (if activated).
9. Document and process all records related to injuries, illnesses, or deaths of personnel assigned to the incident.
10. Maintain log of activities.

**THE MEDICAL UNIT LEADER REPORTS TO THE INCIDENT COMMAND POST AND
THE LOGISTICS SECTION CHIEF**

PLANNING

THE PLANNING CHIEF IS RESPONSIBLE FOR THE COLLECTION, EVALUATION, DISSEMINATION AND USE OF INFORMATION CONCERNING THE INCIDENT INCLUDING RESOURCE STATUS, SITUATION STATUS, PROVIDE INCIDENT COMMANDER ALTERNATIVES AND PREDICT COURSE OF INCIDENT EVENTS.

Radio designation: "PLANNING"
Channel: FIREGROUND "COMMAND" CHANNEL (A7-A16))



PLANNING SECTION CHIEF CHECKLIST

The Planning Section Chief is responsible for the collection, evaluation, dissemination, and use of information regarding the development of the incident and status of resources. Because planning is an ongoing function, data is continually needed to:

1. Understand the current situation
2. Predict the probable course of incident events
3. Prepare alternative strategies and tactics for the incident

Data should include facts existent prior to the incident and information which is gathered at the incident scene.

This checklist is provided to the Planning Chief in order to assist him/her in planning management. The officer assigned, as Section Chief will:

1. Receive situation briefing from the Incident Commander.
2. Assist the IC in planning overall strategy for containment of incident.
3. Establish communication procedures within Planning Section.
4. Develop Incident Action Plan (IAP) with alternatives in consultation with the Incident Commander utilizing available information and expertise.
5. Appoint and brief staff, as needed
 - a) Situation Unit Leader
 - b) Resource Unit Leader
 - c) Technical Specialists
6. Coordinate with Logistics Section Chief to exchange resource status information and determine if current resources are sufficient or determine the need for additional resources. Advise IC.
7. Provide periodic predictions on incident potential.
8. Compile and display situation and resource status data.
9. Advise Command Staff of any significant changes in incident status.
10. Supervise Plans Section and perform other duties as required by the IC.

PLANNING CHIEF REPORTS DIRECTLY TO THE INCIDENT COMMANDER

APPENDIX B 2½ INCH HOSELINE PROCEDURES FOR HIGH RISE

This is the SFFD standard for a High Rise hose lead in a commercial occupancy. Due to the open compartment, center core configurations, and fire load of these buildings, the greater GPM that this hose lead offers will significantly affect the fire fight in favor of the firefighters. It is also an option for the first in officer in cases such as residential (compartmentalized) High Rises when:

1. The fire is not confined to the apartment of origin and has extended to the public hallway.
2. The wind is affecting the behavior of the fire and small lines are not making any head way

In these conditions, it becomes critical to have a **charged** hand line prior to advancing onto the fire floor at the entry point, which would be the door in the attack stairwell at the fire floor. This creates a margin of safety should conditions rapidly change upon entry.

The first step in effecting a proper hose pack stretch is beginning the stretch from the proper location, which is the floor below the fire floor in commercial occupancies. Firefighters must exercise discipline and initiate the hose line stretch from a safe position where control of the standpipe outlet valve can be maintained.

This practice also gives the attack team a safe place to retreat to while maintaining water flow. Therefore, it is critical to always hook up at least one floor below, even if this requires a longer hose stretch. Once again, the longer hose stretch is facilitated by the use of a 2 1/2-inch hand line because of the minimal friction loss associated with this size hand line.

Size-Up

- Verification of the Attack Stairwell
- Stairwell preferences:
 - Roof access that can be vented
 - Smokeproof tower preferred
 - Stairwell checked for trapped/evacuating occupants up to the roof
- Verification of distance to fire location from entry point (door in attack stairwell on the fire floor)



Photo 1

- Establish length of lead (150' is starting point) from standpipe on floor below to fire location above
- Preplanning layout problems:
 - o On floor below
 - o Problems with stairwells with a gap between the stairs and the wall
 - o Narrow stairwells or landings

Connecting Hose Lengths

- Hose packs are laid out on the floor in the public hallway on the floor below with the male couplings facing toward the fire floor (Photo 1)
- One hose pack has the shutoff and tip pre-attached and should be the lead length
- Velcro straps are removed (keep straps to later lock bale of shutoff if extending)
- Hose packs are connected together (Photo 2)



Photo 2

Engine Officer #1

- Evaluates conditions and floor layout on floor below (Locates other stairwells and if there is an access stairs between floors shared by single company)
- Will lead the attack onto the fire floor behind FFs #3 & #4
- Updates Fire Attack chief of entry on fire floor and water on the fire
- Communicates with Engine Officer #2 for advancement of hose as necessary
 1. Engine Officer #2
- Evaluates conditions from fire floor entry point to fire
- Sizes up any forcible entry needs or use of master building keys and calls for truck assistance as necessary



Photo 3

- Assists with hose lead, remaining at stairwell door updating Fire Attack on attack stairwell conditions(see Fig 1)
- Will relieve Engine Officer #1 as needed

Firefighter #1

- Positioned at the standpipe outlet valve
- Flush the standpipe outlet to clear debris and sediment (don eye protection – due to debris bouncing off other surfaces back towards firefighter) (Photo 3)
- Remove the female coupling from the last hose length and stand on a few extra feet of hose (Photo 4)
- Signal FF #2 to begin layout
- Attach 3” x 2 ½” reducer, Standpipe Pressure Gage (SPG), 45 degree couplings (if used) and female hose coupling (Photo 5)
- Assist other FFs with hose layout as necessary
- Open valve slowly and fully when Officer #1 calls for water
- Standby at outlet valve and make adjustments to pressure once nozzle is fully open and **flowing**



Photo 4

- Relieves FF#4 as necessary
- Updates Engine Officer #2 if:
 - o Water pressure is inadequate
 - o smoke banks down to floor below fire in attack stairwell
- 1. Firefighter #2



Photo 5

- Hands the female coupling and a few extra feet of hose from the last hose length to FF #1 at the standpipe outlet
- Finds the midpoint on the last hose length and stretches it onto the floor below ideally straight away from the entrance stairwell into a hallway or room (Photos 6 & 7)
- Adjusts to the floor below landing and checks hose as it is charged
- Assists with pulling hose as needed once charged
- Relieves FF#3 as necessary



Firefighter #3

- Grabs the coupling between the 1st and 2nd lengths of hose and walks up stairwell to landing on fire floor (Photo 8)



Photo 8

- Checks layout to ensure hose is to the outside of stairwell at turns to eliminate kinks until reaching fire floor landing and then lays out towards interior of turn going up past fire floor landing (Photo 9)
- Adjusts to the fire floor landing and then holds the hose in place prior to charging
- Dons SCBA mask and backs up FF #4 on the nozzle pulling hose as necessary
- Relieved by FF # 2 below the fire floor landing



Photo 9

Firefighter #4

- Picks up the lead hose pack with shut off and tip and places on shoulder
- Advances to fire floor landing along with FF #3 not paying out any hose from shoulder
- Places hose pack on stairwell, 3-4 steps up from landing with the shutoff and tip facing the outside of the stairwell
- Finds the midpoint of hose and stretches out lead along stairwell above fire floor (Photos 10 & 11)

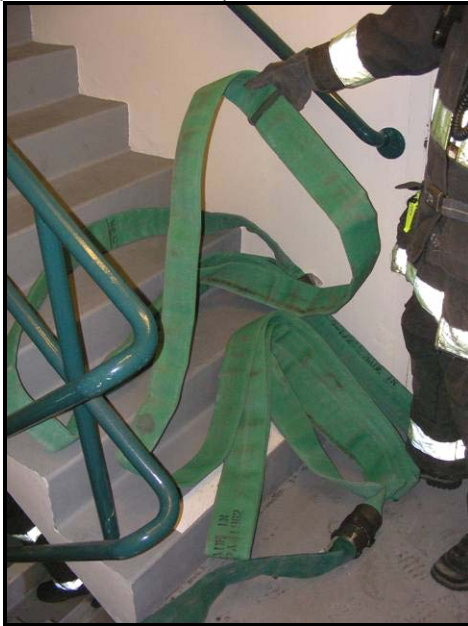


Photo 10



Photo 11

- Lays out line going up the stairs on the interior of the stairs and the hose going down the stairs on the outside of the stairs to eliminate kinks.
- Holds hose at high point of stairwell before charging
- Adjusts to nozzle and drains out air from line (Photo 12)
- Dons SCBA mask and then leads hose lead onto fire floor to fire
- Relieved by FF #1 at standpipe outlet



Photo 12