A high-rise building is spatially three dimensional. The combination of vertical distance, limited access/egress, and occupant movement up, down, or out changes the response requirements for both high-rise occupants and first responders to a degree that is significantly different than those on planar structures. The special circumstances in high-rise environments create the need for a tailored response to active shooter events.

This paper is intended to address those special circumstances.

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ACTIVE SHOOTER

HIGH-RISE BUILDING SCENARIO

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DEFINITIONS

High-Rise Building: A building greater than 75 ft (23 m) above the lowest level of fire department vehicle access.[1] This is typically a seven-story building but may be more or less based upon construction.

Active Shooter: "An individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearms(s) and there is no pattern or method to their selection of victims."[2]

An important distinction from any other type of attack is that an active shooter will only be stopped by intervention, usually by a peace officer.

Note: Many people use "active shooter" as a catch-all term for many events that are different by nature and in the response to them. A formerly active shooter, a barricaded shooter, an armed person, or even a simple "shots-fired" call warrants different responses, which are not covered by this work.

[1] *NFPA 101 Life Safety Code*, National Fire Protection Association, 2012. §3.3.36.7

[2] "Active Shooter: How to Respond," U.S. Department of Homeland Security, October 2008. https://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf

STRUCTURAL CONSIDERATIONS

High-rise buildings differ from lower structures in many ways: in their fire suppression systems, egress requirements including protective stairwell construction, fire resistive doors, time required to evacuate, access to window evacuations, in-building relocation, alarm systems, and public address systems. Differences are also found in local fire department and municipality ordinances. Unlike low-rises, a fire department may allow for partial evacuations or for relocating to a safe area on a floor. Some fire departments may also require an entire building evacuation in case of an alarm, regardless of the alarm cause.

High-rise buildings add a dimension not found in lower buildings; that is the requirement to move vertically—up or down—to the operational area. This vertical dimension creates additional operational areas to address, which include the need for responders to climb significant distances causing fatigue and the use of elevators or some combination of these methods.

A critical factor in the decision to evacuate during an active shooter incident in a high-rise building is that if evacuation requires occupants to descend past the floor on which the shooter is active, there is a higher chance they will encounter the shooter. Therefore, a shooter on a lower floor of a building poses a greater danger to

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HISTORY

While not common, there have been a number of high-rise active shooters. Below are a few examples of high-rise shootings in chronological order.

1/28/1982 — 1 Market Plaza, San Francisco, CA

The active shooter approached the desk of his estranged wife on the 18th floor. After assembling a shotgun, he shot her in the legs and then continued to terrorize the office for 20 minutes chasing people and firing over 20 rounds. Three people were killed, eight wounded. The shooter was shot by police.

7/1/1993 — 101 California Street, San Francisco, CA

An individual made his way to the 34th floor of the building and opened fire after exiting the elevator. He roamed around and, after a fire alarm was pulled, was able to move to the lower floors and continued to shoot. After a building engineer reset the fire alarm, the individual was trapped in the stairwell and committed suicide.

12/9/2006 — Citigroup Center, Chicago, IL

An individual opened fire at a law firm, killing three people and wounding one other. After forcing a security guard at gunpoint to take him to the 38th floor, he chained the office doors behind him. After a 45-minute standoff, SWAT officers killed the shooter. Reports indicated the shooter believed he had been cheated over an invention.

9/1/2010 — Discovery Channel, Silver Springs, MD

A man known for protesting the Discovery Channel's environmental programming, stormed the network's Maryland headquarters carrying a handgun. He held three people hostage for hours until he was shot and killed by police. After the four-hour standoff was isolated, most of the 1,900 occupants were evacuated, including children and adults from the day care center in the high-rise.

9/16/2013 — Washington Navy Yard, Washington, DC

Active shooter killed 12 people and was in turn killed by police.

5/7/2016 — Westfield Montgomery Mall, Bethesda, MD

Active shooter killed two before being arrested.

5/10/2016 — Taunton Mall, Taunton, MA

Active shooter killed two before police killed him. Although not strictly high-rise, there were many similarities such as extensive use of the stairwells. This fact, combined with a vast space and multiple stories, created lessons that can be applied to high-rise active shooter events.

evacuating people than one on a higher floor. Since in most cases occupants will not know where an active shooter is located, the higher a person is in the building, the greater the likelihood they will pass the floor on which the active shooter is operating while they evacuate. The ability to order in-building relocation, to shelter-in-place, or direct people up rather than down and out, can become an effective strategy for building managers.

Most security directors and emergency managers have great relationships with their local police and fire departments; some even train with their police tactical response units. But the initial response to any active shooter incident or mass casualty event will most likely be by the patrol officers on duty at the time of the event and that response will focus on stopping the violence. This response focus makes multi-floor room clearing and securing a scene much more difficult and time-consuming because departmental doctrine/policy may require responding officers to first organize themselves before proceeding to confront the attacker(s). Special Weapons and Tactics (SWAT) teams will take more than 10 minutes to respond because they have to be dispatched separately and often are not full-time tactical officers. While there is some movement towards tactical medical response capability, most local fire departments, paramedics, and EMTs will stage until scene security is established, which further delays patient care.

LESSONS LEARNED

Lessons learned from these incidents demand that we consider the following tactics during a high-rise shooter incident.

Elevators will probably be the most important aspect of an active shooter response in a high-rise building. First responders will want immediate access to the elevators in order to get to the shooter in the quickest and most effective way possible. Some suggest having all elevators recalled to the entry most likely to be used by the responding police. This is probably the lobby. Some departments' doctrine/policy requires that police avoid elevators during an active shooter incident response. On the other hand, if a police team is required to run up 10 to 30 floors to reach an active shooter, team members may be exhausted and late from the climb.

Another factor in determining whether to recall elevators will be a sudden call for all elevators to a certain floor. If elevators arrive at or near the shooting floor, people desperate to get off the floor will likely overload them in the rush. This is likely to create both an elevator entrapment, resulting in the elevator becoming disabled and unavailable to first responders.

Elevators sometimes break down at crucial times during incidents and exercises. In some cases, it is operator-error (e.g., the elevator is left unmanned during a controlled operation). Although the elevator doors are supposed to stay open at that floor, they may not. When the doors close, that elevator is no longer available; sometimes until an elevator mechanic can reopen it.

Operators must know how to use the elevator, but also keep in mind the best procedure may be to have an experienced person (e.g., security or engineer) volunteer to accompany them to ensure better outcomes.

For these reasons, recalling elevators using a Fire Recall or other elevator-based responses should be carefully considered and trained.

Manual Fire Pull Stations: In a high-rise building, evacuation or relocation is made more challenging because doors leading from emergency stairwells are usually locked to prevent access to tenant spaces. To allow an individual to escape a stairwell should conditions deteriorate, fire code may require that the doors leading out of an emergency stairwell be unlocked by the alarm system when activated. This could allow a shooter to move from floor to floor using the emergency stairwells to continue shooting.

In the 101 California Street incident, a fire alarm was pulled and the doors unlocked. The shooter moved freely from floor to floor and shot people. An engineer on a nearby floor went to the activated pull alarm and reset it manually. The engineer did not know that there was a shooter in the area. Until the pull alarm was reset, the horns, strobes, and unlocked doors could not be reset.

People who knew there was a shooter in the building then reset the fire alarm from the Fire Control Center in the lobby. With the doors in the fire stair locked, the killer was confined in the emergency stairwell with police coming up the stairs. Trapped, the killer committed suicide.

Smoke alarms can be activated by firearms, fires, or dust, and, depending on their location and jurisdiction, could activate a full or partial evacuation, which may be a surprise or hindrance to responders. Smoke alarms activated in elevator lobbies may cause an elevator recall to the lowest non-fire floor or lobby.

Sprinklers can be activated by concussion, fire, heat, or mechanical means. An activated sprinkler system can add considerably to the chaos, damage, danger, and other issues related to the event. Activated sprinklers will also activate fire alarms, including strobes and horns.

In-Building Relocation: While occupants' instincts to an emergency may be to evacuate, that could be a potentially fatal response in a high-rise. Without clear instruction, occupants may unwittingly move towards the fire, active shooter, etc. Thus building managers and tenant employers must recognize that it may be best to shelter-in-place or move up versus down and out.

Alerts for Active Shooters: The prompt alerting of occupants for an active shooter in a high-rise is critical because the event is likely to end within minutes. While most high-rises have no specific active shooter alerting system, there may be a public address system. Absent a specific active shooter alert and warning system, the public address system should be quickly activated to alert all occupants to the whereabouts of the shooter and his/her ongoing movements. It is not reasonable to expect an occupant to properly respond to an active shooter if the shooter's presence and position is not known.

RECOMMENDATIONS

Depending on the exact location, makeup of the building, and agreed protocols with local police, fire, and EMS responders, the following actions are recommended.

Silencing Fire Alarms: Building managers, engineers, security, and first responders should be capable of silencing, resetting, or otherwise addressing alarms activated not as a result of fire, but for other reasons such as active shooter. Additionally, tenants should be encouraged NOT to activate fire alarms in case of an active shooter as that will likely confuse and delay rather than assist the response. In most cases, it will be left to the responding agency to make a request to disable, acknowledge, or turn off a fire alarm of any type.

Relocking Doors: With appropriate safeguards, a mechanism for relocking the emergency stairwell doors can be an effective option. Fire alarms activated during an active shooter event will usually open all the doors in an emergency stairwell, making it possible to reenter a building during an emergency. During an active shooter event, occupants may choose to use mechanical means or physical barricades to prevent access to their spaces.

Alerts for Active Shooters: The most critical aspect of an active shooter incident in a high-rise for occupants is to realize that such an incident is underway and then respond quickly and calmly. Methods for discovering and alerting occupants to an active shooter incident should be practiced.

Immediately upon discovery of an active shooter, building managers should attempt to:

1. Notify tenants using as many methods as possible as quickly as possible. This may include announcements on a speaker system, phone calls, and mass notification systems.
2. Reduce or eliminate the options for a shooter to move in the facility. This may include: fire recalling elevators, closing and locking doors, advising tenants to secure their spaces, and other methods for restricting the shooter's movement.

In-Building Relocation: Building management and tenant employers should plan and train for moving occupants up or down in addition to full evacuation. The shelter-in-place procedure must be planned, trained, and drilled in order to keep personnel safe.

Reporting to First Responders, building management should:

1. Develop procedures to gather information regarding the location and description of the shooter, location of injured people, and other important information for first responder's use.
2. Prepare to receive armed police officers and have procedures in place to speed their response to the location of the active shooter. Elevator keys for use in Fire Mode, maps of the facility, advice on elevator use, and guides should be immediately available. (Entry kits with all necessary items for first responders upon arrival.)
3. Prepare plans in such a manner as to be able to communicate, offer solutions, suggest equipment plans or ideas, or direct or accompany responders. This is crucial because in many cases building staff believe that they are not needed or capable of assisting once the police or fire department arrive. In fact, additional efforts and assistance from building staff are essential. The method for offering advice or capabilities to responders must be tailored to the situation. To the extent possible, building managers should understand and be able to use Incident Command principles during an emergency response.
4. Prepare for blood control of victims to be initiated as soon as is practicable. It cannot be predicted when EMS units will enter a building following an event. Therefore, it is critical blood controlling items, such as clotting gauze and tourniquets that could make the difference between life and death, are kept on-site at any high-rise building.

Training is the cornerstone of an effective and sustainable program for responding to a high-rise active shooter incident. In many locations, limited budget, concern for alarming tenants, and the inability to replicate real emergency conditions combine to reduce or eliminate training on this issue.

Training deficits can be mitigated by the use of small-scale tabletops or discussion-based exercises, computer simulations, "what if" conversations, and the realization that this issue is of vital interest to occupants. It is no longer a taboo subject, but one for which tenants are clamoring for information. The "teachable moment" has arrived, and with some ingenuity and energy, we can implement modern response procedures. Notably, New York City enacted law regarding high-rise emergency response including active shooter (3RCNY §6-02), and additionally other state and local regulations apply (e.g., OSHA Standard 29 CFR 1910.34, 29 CFR 1910.38, NFPA 101, NFPA 1600).

CONCLUSION

The most important aspect of an active shooter situation occurring in a high-rise building is the insight of how verticality changes the approach. In many cases, the building management and tenant employers' staff will be more acutely aware of this fact than responders. This is because they maintain the elevators, stairwells, and other high-rise features on a daily basis, where responders may not. It is important for building managers and tenant employers to work together to put procedures in place that will assist occupant response and responders when an active shooter incident occurs. This can be done by cooperating with local public safety agencies and ensuring they have access and familiarity with your structure. You can further prepare your facility's staff by crafting pre-scripted messages to be read over the public address system to help reduce the confusion and stress related to violent events. Finally, the most important thing that can be done is to train your personnel to conduct the actions necessary to survive any active shooter situation. Practice these exercises regularly.

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