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MAY NEWSLETTER- LIFE AND DEATH DECISION-MAKING

Evacuating People from Burning Buildings

There are several strategies for evacuating people from a burning building. 1. There is a strategy of removing people at the same time as you fight the fire; 2. there is another strategy of removing people and not fighting the fire; 3. and finally there is a high rise strategy of not removing all the people and fighting the fire. This is called a defend in place strategy. This article will examine these three strategies for evacuating people from a burning building.

1. Evacuating people and fighting the fire strategy During a fire, if resources are available, the chief's strategy may be to fight the fire and evacuate the people from the burning building at the same time. Only a large fire department can conduct firefighting, and



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evacuation of a building at the same time. Engine company firefighters stretch the hose and extinguish the fire while ladder company firefighters may perform rescue and evacuation. This strategy may be carried out when the burning building is a low-rise building and there is not large number of people to be removed. The people are removed from the proximity of the fire during the initial stages of the fire. And if the fire is not extinguished, all the occupants may have to be removed during the firefighting operation. The ordinary, brick and joist construction or wood constructed building is combustible and cannot be depended upon to stop spreading flame or smoke.

2. Evacuating people and not fighting the fire. If the fire chief of a small rural department does not have the resources he can not evacuate people from a fire and conduct fire extinguishments operations at the same time. To conduct rescue and firefighting you need large number of firefighters on the scene, a good water supply and close hydrant spacing and at least three pumpers. In a small rural department with a single pumper response, manned by two or three firefighters, in an area where there is no hydrant system, when arriving at a structure fire beyond the control of a single hose line, the strategy may have to be to evacuating people, without firefighting. All three firefighters may rescue people until reinforcements arrive.
3. Fighting the fire and not evacuating the building. A high rise is generally defined as a building over 75 feet in height. During a high rise building fire, people cannot be evacuated from the burning building. This is because: one, there are too many people in the high rise building; and, two, removing all the occupants of a high rise building could take several hours; So the strategy of a fire chief at a burning high rise building must be “defend in place strategy. This, “defend in place strategy , means firefighters fight the fire without evacuating all the people. In a high rise office building the fire service uses a partial defend in place strategy. In a high rise residence building the fire service used a total defend in place strategy.



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Evacuating people from high rise office buildings

During a high-rise office building blaze we must fight the fire while most of the people remain inside the burning building. The fire chief orders the people on the fire floor and the floor above to leave and instructs all other people to remain in the building unless smoke is building up on there floor. They should notify the chief if smoke is seeping onto the floor and that floor will be ordered evacuated by firefighters. In order to use a defend- in place firefighting strategy the building must be fire resistive construction, have automatic sprinklers and be compartmented with wall and floors to resist smoke spread. Floors and rooms inside a fire resistive building must become areas of refuge free of flame and smoke. in order for people to remain during a fire. Since the collapse of the world trade center towers, the defend in place strategy is questionable. The strategy of high-rise firefighting depends on three factors. **One**, The building is fire resistive-smoke and fire will be confined to one floor; **Two**, the fire is of a size that can be extinguished by firefighters less than 2500 square feet; and **Three**, the people in the building will comply with the instructions of the fire chief. In my opinion none of the above are true today. Today's high rise buildings with central air system are not fire and smoke resistive, firefighters can not extinguish fires in large area office floors-10 and 20 thousand square feet and finally, people will not comply with the chiefs instructions after the world trade center fire and collapse.

Evacuating people from high-rise residence buildings

During a high rise residential building blaze we must fight the fire while all people in the building remain in the burning building. The strategy for evacuating people from a high-rise residence building is different than the strategy of evacuating people from a high-rise office building. A high rise residence building, like a commercial building, is defined as a building over 75 feet; and a high rise residence is required to be fire resistive construction. In a residence building the apartment walls and floors can resist the spread of flame and smoke. In a high-rise residence building there is no open floor design. Each floor in a residence building is subdivided into apartments. If the door to the apartment is closed after the person leaves the burning



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apartment, flame and smoke will be confined to the apartment of fire origin and can not spread throughout the floor. So, during a fire in a high-rise residence, the fire chief orders all people to remain inside their apartments while the fire is extinguished. People are not ordered to leave the fire floor nor the floor above the fire. This is a “Total- defend- in -place- strategy”. It is unlike the “ partial, defend- in -place strategy” used in a high-rise office buildings.

Area of refuge-Evacuating people horizontally

When you remove people from the danger of a spreading fire in a burning building you usually take them down a stairway, or down fire department ladders, below the fire. If a person is old, injured or disabled taking them usually one or two floors below a fire and leaving them there they will be safe. Note: this was not the case at the world trade center on 9-11-01, which had floors, constructed of lightweight bar joists. Fire, heat and smoke rise upward, so people are taken down a stair or ladder below the fire, heat and smoke. However, there are some times when you do not take them down below the fire, but instead move people in a horizontal direction away from the fire, behind a fire resistive barrier into an “area of refuge”. This is horizontal people evacuation. This is the evacuation strategy used in high-rise buildings such as, hospitals, schools, places of public assembly and prisons that are constructed into separate structures. These buildings are constructed into fire resistive sections. Fire resistive walls and doors which can stop flame and smoke subdivide each section of the building. When a fire occurs in one section people are taken from that section into another, and fire resistive door closed to the section where the fire is burning to restrict its spread. Once in the safe area of refuge the people may or may not be taken down the stairs to the street.

Method of evacuating people from fire danger

There are priorities on how firefighters should assist people from a burning building. People should always be removed from a burning building using the safest possible way. A firefighter can increase the victim’s risk of death and injury by the way the person is removed



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from the fire. Fire photos sometimes show firefighters erroneously taking a person from a safe location, at a window or fire escape on the floor below the fire, onto a shaky aerial ladder 50 feet above ground

There is a priority of how people should be rescued from a burning building based on safety of the victim being removed. The method of removing people from a fire in priority of safety is: use the smoke proof tower first. If not available, use an enclosed stairway or next, a fire escape. Using an aerial platform is safer than taking a person down an aerial ladder; the last resort is a rope rescue.

Questions

1. Which one is not a strategy for evacuating people from a burning building?
 - A. Remove people and fight the fire
 - B. Remove people and not fight the fire
 - C. Do not remove people and fight the fire
 - D. Do not remove people and do not fight the fire

Answer _____

2. True or False - A fire chief of a small rural department with limited resources may have to evacuate people and not fight the fire.

Answer _____

3. Which is an untrue statement regarding a high rise building?



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- A. A high rise is generally considered a building over 75 feet high
- B. All people can not be evacuated because there are too many occupants
- C. All people can not be evacuated because it takes too much time
- D. The defend- in place strategy can not be used in a high rise building

Answer_____

4. Which one of the following is an untrue statement?

- A. Total defend-in-place strategy is used in a high rise residence building
- B. Partial defend in place strategy is used in a high rise office building
- C. During a partial defend-in-place evacuation people on the fire floor and the floor above are ordered to leave
- D. People on other floors besides the fire floor and the floor above in a high rise office building during a fire are not evacuated even when smoke enters their floor.

Answer_____

5. True or False - Horizontal evacuation is not conducted during a fire in a hospital or nursing home.

Answer_____

Answers: 1.D; 2. True; 3.D; 4.D; 5. False