

ALTERNATE FLOOR RECALL PROVISIONS FOR ELEVATORS SHOULD BE MAINTAINED

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ABSTRACT

When Firefighters Service for elevators was first introduced into the A17.1 Safety Code for Elevators and Escalators, recall of elevators was only to a designated level. Input from local and state authorities, as well as from the major building codes, however, led to deliberations by the code making body that resulted in code rules for alternate floor recall provisions to be incorporated in the ASME/ANSI A17.1 Safety Code for Elevators and Escalators.

Background information that resulted in A17.1 code rules requiring alternate floor recall is provided. This information provides insight to the code requirements and the rationale for adoption of same.

Although there are some points of view that feel that the alternate floor requirement be rescinded, there are valid arguments for preserving the alternate floor code provisions.

INTRODUCTION

The ASME/ANSI A17.1 Safety Code for Elevators and Escalators, (hereinafter referred to as A17.1) was not silent on elevator operation by firefighters. In 1969, supplement "c" to the 1965 A17.1 Code covered fire operation of elevators in Appendix E. Not content with having firefighters operation in the Appendix, A17.1 formed an ad hoc fire committee in 1971 to promulgate rules for inclusion in the code proper and eliminate Appendix E. Supplement "b" to the 1971 code was issued in 1973 and contained an expanded Section 211 that covered firefighters operation. The need to keep abreast with changing technology, methods and emergency use of elevators resulted in the ad hoc committee becoming a permanent standing committee.

Supplement "b" called for return of elevators to the designated level and did not recognize an alternate floor. The designated level is defined as the main floor or other level that best serves the needs of emergency personnel for fire fighting or rescue purposes. Many jurisdictions, however, did not agree with A17.1's viewpoint and mandated alternate floor provisions. As a result, the alternate floor requirement became a much discussed agenda item for the Emergency Operations Committee.

In the 1981 edition of A17.1, the code was changed to require alternate floor recall provisions. This change came only after extensive deliberations.

RATIONALE

It is not pre-ordained that the designated level has the lowest fuel load of any other floor in the building. This may be the case in some major, high rise office buildings, but it certainly is not applicable to many other buildings, such as apartments, hotels, showrooms or buildings with elaborate reception areas. But, even if it were a fact, a fire bomb launched by a radical element can suddenly provide an enormous fuel load on an otherwise sterile floor.

It should also be remembered that the preponderance of buildings have elevators without an express zone. We should not be deluded, therefore, into believing the contrary. In the event that there are express zones, it is still safer to park away from any potential fire floor. If in a particular building, there are circumstances where it is not desirable for elevators to park above an express zone, then a local variance should be obtained. This would be more appropriate than eliminating the alternate floor altogether. There is already a precedence for this action. In those relatively few

buildings where double-deck elevators are installed, the local firefighters normally specify the manner in which these elevators will be utilized. It is feared that if the mandatory alternate floor requirement is repealed and made permissive, than many buildings would ultimately revert to the early code requirements that only required return to the designated level.

What is often overlooked is the fact that if the elevators are returned to an alternate level, the firefighters have not lost control of the elevators. If conditions dictate that the designated level can provide safe egress, there is no reason why the firefighters cannot exercise the option of calling the elevators to the designated level by turning the required three position keyed switch to the "on" position. The key switch over-rides the alternate floor and will return all elevators to the designated level -- even though the elevators may be parked at a floor above an express zone.

There is often the argument that the designated level is also the location of the central command station, and as a result, elevators should be returned to this point. It would be difficult to effectively utilize a designated level central command station if the designated level is engulfed in a rapidly spreading fire such as the one that destroyed the main floor of the MGM Hotel. The usually accepted emergency procedures are not relevant when the fire is at the main floor. Elevators that are returned to, or parked at the main floor are of no value if it means possible loss of life.

Further, the presence of sprinklers is not a panacea for occupant safety. In severe fires, sprinkler action may reduce the heat to 300 to 400 degrees F. Life is not tenable at those temperatures. It may also be assumed that sprinklers will reduce the probability of a large fire, but one cannot rule out the possibility that smoke in dangerous quantities may be produced (McGuire).

Although sprinkler manufacturers say that sprinklers have been proven effective in stopping fire in a large number of buildings, smoke control advocates note that smoke, not the flames themselves cause the majority of fire deaths and say that sprinklers allow too much smoke to develop before the area gets hot enough to start the water flow (Miller).

Per the NFPA, smoke can knock you senseless in one little breath. Smoke is the killer. More deaths result from smoke than fire. Why then, if there is smoke at the designated level, should we ignore this and return elevators to this potential killer. A return to an alternate floor is a better idea.

The effectiveness of smoke detectors for the recall function has also been questioned because of the possibility that smoke may be present on floors above and/or below the fire floor. A17.1 code has addressed this by indicating that the first smoke detector activation determines what floor the elevators are returned to. This is based on the fact that it is highly improbable that the smoke detectors on floors other than the fire floor would be activated beforehand.

As a corollary to the smoke detectors that are now required to initiate elevator recall, it has been cited that the water flow switch associated with the on-floor sprinkler system is more positive. First, smoke detectors were chosen in order to initiate elevator recall as soon as possible in order to prevent the elevators from being used by building occupants during a fire. Second, sprinklers are not foolproof. A study of 26,309 fires in sprinklered buildings in the U.S. and Britain over 15 years found that the sprinklers either failed to operate or failed to control the fires in 11% of the cases (Penn, 1981).

COMMENTARY

It should be noted that no one combination of life safety features can be correct for all buildings. For those rare exceptions, a scheme that provides balanced protection will provide a greater degree of safety to the occupants. Sprinklers, therefore, should be an adjunct to the smoke detector system that is now a code requirement. Sprinklers and smoke detectors can complement each other, thus providing the ultimate in elevator recall safety when used in conjunction with an alternate floor.

It is difficult to conceive why the alternate floor should be abandoned when it is providing an unparalleled measure of safety. There are thousands of buildings that now have the alternate floor. Are we suddenly going to say that this concept is not correct? There is no background to justify such an action; especially when we now have systems in place that provide occupant safety by keeping elevators away from a potential fire floor.

CONCLUSION

Retain the alternate floor requirement as presently required by the A17.1 Elevator Safety Code.

REFERENCES

ASME/ANSI A17.1 Safety Code for Elevators and Escalators

McGuire, John, *Report on Control of Smoke Movement in High Buildings*.

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