

A supplement to the *NFPA Journal*

Fire Investigation Summary

North York

**Residential High-Rise
North York, Ontario
January 6, 1995**



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**National Fire
Protection Association**

At approximately 5 a.m. on Friday, January 6, 1995, a fire in a North York, Ontario, residential high-rise building resulted in the deaths of six residents. All were found on upper stories in exit stairways. The fire appeared to have been ignited by the improper disposal of smoking materials and initially involved a couch in a fifth-floor apartment. The fire caused severe damage to the apartment and to an exit access corridor. The loss was estimated at \$1 million, Canadian (\$730,000, U.S.).

After unsuccessfully attempting to extinguish the fire, the occupant in the apartment of fire origin left without closing the dwelling unit door to the corridor. Fire and smoke passed through the open door into the exit access corridor and made that corridor untenable for many fifth-floor residents. The residents who did not escape early in the incident stayed in their apartments until they were rescued by fire fighters. The combination of closed doors and noncombustible walls prevented untenable conditions and deaths from occurring in other fifth-floor apartments.

The door to one of the building's two exit stairways was heavily damaged by the fire, and the door to the other exit stairway was held open by a fire department hoseline used during the fire suppression operations. As a result, smoke entered both stairways. Natural stack effect moved the smoke vertically through the stairways, elevator shafts, and heating, ventilation, and air conditioning ducts. On the upper floors, the smoke passed through open doors and seeped past closed

doors. As a result, smoke accumulated to varying degrees in exit access corridors and in apartments.

In many instances, the smoke spreading through the building made occupants aware of the fire. However, the smoke also made the exit stairways untenable, prevented residents from escaping, and caused the death of six residents.

The smoke that spread throughout the floors above the fire had a significant effect on the occupants of these floors.

The communication of specific information to residents in the building was not effective in this incident. No one in the building was trained to use the emergency voice alarm communication system so it was not used during the initial stages of the fire. When the emergency voice alarm communication system was used at some point later in the fire, many residents did not hear or could not understand the messages. Residents in the

building turned on radios and TVs hoping that they could receive useful information, but little was provided.

Without guidance that could be communicated through the use of the emergency voice alarm communication system or information from other sources, residents made decisions based on their personal knowledge, experience, and the cues they were receiving. Once aware of the fire, some residents attempted to evacuate early in the incident and were successful. Other residents who attempted to minutes later were unable to do so. Some residents moved through worsening smoke conditions only to be forced to abandon their attempted escape and seek refuge in apartments. Many residents who sought refuge in their apartments or in

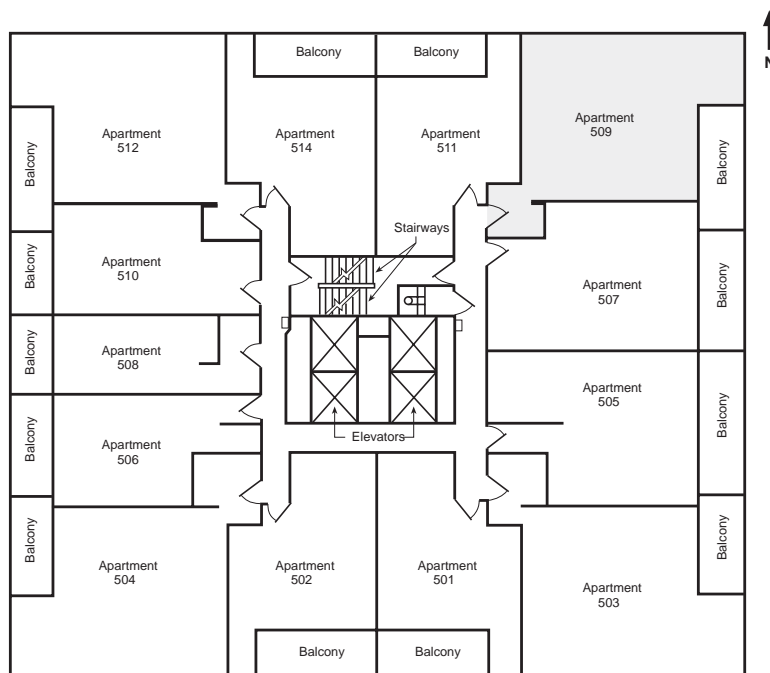
apartments of other residents were able to stay safely in the apartments where they were rescued by fire department personnel. Some residents moved from the apartments to their balconies. In many instances, the people who remained in their apartments or moved to the balconies were exposed to less risk to their safety than those who attempted to escape. However, those residents that left upon activation of the alarm bells were able to get out of the building safely.

The events in this incident point directly to the importance of being able to reliably communicate information to residents and the need for resident training so that residents are able to make an educated decision on whether to evacuate or to stay in place during a fire emergency.

The 1994 edition of the Life Safety Code® contains several requirements for existing apartment buildings that, if enforced, could have changed the outcome of this incident. The code requires that all high-rise apartment buildings be fully sprinklered or that the buildings have smokeproof enclosures for the exit stairways. In addition, the code requires that the doors between living units and corridors be self-closing and have latches to keep the doors tightly closed. These fire protection features would have minimized smoke development or smoke spread within the building.

Based on the NFPA's investigation and analysis of this fire, the following significant factors were considered as having contributed to the loss of life and property in this incident:

- Lack of automatic sprinkler protection
- Lack of door self-closing devices on apartment entrance doors
- Vertical smoke movement due to stack effect
- Staff who were not trained with respect to managing fire emergencies in the building for which they were responsible
- Lack of fire safety training for building residents
- Voice communication equipment that could not transmit messages that were understood by residents



5th FLOOR ARRANGEMENT

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The National Fire Protection Association's Fire Investigations Department documents some of the most significant fires and incidents throughout the world. The objective of these investigations, and the subsequent reports that are prepared, is to determine what lessons can be learned from these incidents. This information is then made available to the fire safety community to be used in developing future codes and standards and to modify fire ground operations.

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