SUMMARY REPORT

Boarding Home Fire
Washington, D.C.
January 29, 1985
A Success Story

Prepared by

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The National Fire Protection Association conducted a study of the boarding home fire on Irving Street in Washington, D.C. Unlike other boarding home fires investigated by the NFPA, smoke detectors and an automatic sprinkler system operated preventing serious injuries and deaths. Preliminary "on-site" documentation was performed by Robert Smith, a representative from the NFPA's Washington office. Photographs were provided by Lt. Jack Fletcher, retired, Washington, D.C. Fire Marshal's Office. This report was prepared by the NFPA Fire Investigations and Applied Research Division as part of its continuing effort to document and analyze fire incident details and to report "lessons learned" information for loss prevention purposes.

ABSTRACT

On January 29, 1985, a fire occurred on the first floor of a boarding home located at 1307 Irving Street in Washington, D.C. The fire building was once two single-family dwellings (row-houses) which were combined and converted to a boarding home for group living. The fire, thought to have been caused by smoking materials, involved a couch in the facility's smoking room and a small amount of other materials, before the smoke detectors activation alerted occupants and automatic sprinklers controlled the fire. Although smoke had spread throughout most of the structure, occupants were able to escape with fire department assistance. The only injuries sustained were minor in nature.

The fire is significant because it demonstrates the value that an automatic sprinkler system can have on improving the level of protection in an occupancy with an identified fire problem -- boarding homes.
BACKGROUND

Since 1978, the 44 multiple-death boarding home fires (those that kill three or more persons) reported to NFPA have resulted in 268 deaths. Compared to the estimated boarding home population, these figures indicate that the risk of dying in a multiple-death fire is roughly five times as high in a boarding home than in all other residential properties combined. Further indication of the severity of these fires is that many of the multiple-death boarding home fires kill at least half the occupants.

A typical example of a boarding home fire which the NFPA has investigated occurred in the early morning hours of April 11, 1979. The fire occurred in a community residence facility on Lamont Street in the northwest section of Washington, D.C. The fire, caused by the misuse of smoking materials which ignited a couch in the first floor lounge area, took the lives of 10 occupants and injured 5 others.\(^1\) This tragedy and others have focused national attention on the fire problems unique to boarding homes.\(^2\)

After the Lamont Street tragedy, the District of Columbia government proposed a program to demonstrate how boarding home facilities might be protected using automatic sprinklers. With U.S. Fire Administration funding, Washington, D.C. fire officials located a duplex dwelling unit which had been converted to a boarding home and installed a residential sprinkler system. The property at 1305-1307 Irving Street was selected because it closely resembled the property on Lamont Street.

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The Irving Street Building

Originally, the facility was two single-family dwellings separated from one another by a party wall. This "row-house" setting is found in many large cities and is typical of turn-of-the-century construction techniques for residential occupancies. The structures (see Photo 1) were three stories in height plus a basement and built of ordinary construction with flat roofs. During conversion for use as a boarding home, the party wall separating the two units was breached, providing openings in several places to allow free occupant flow between the units. Openings were cut into the walls of the basement, first and second floors. A 1 3/4-inch solid-core door provided protection against horizontal smoke or fire spread at each opening.

The original front entrances were retained for use by the boarding home occupants (see Figure 1). Two stairways (one adjacent to each unit's back door) led to the basement area. Non-rated doors contributed to separation between the first floor and the basement areas. Two exterior doors led directly to the outside from the basement. Two additional interior stairways serviced the building; one centrally located in each unit. Terminating on the first floor, these stairways were open and provided access to and egress from the second and third floors. An exterior fire escape located on the alley side of 1307 provided a limited secondary means of egress from the second and third floors. During a fire emergency, most occupants would have to travel past the open stairway to reach the fire escape.

The facility's kitchen and dining area were located in the basement of 1307 Irving Street. This unit's first floor contained an office, the housekeeper's bedroom, another bedroom, a living room/lobby area and a smoking area (room of fire origin). Both the second and third floors in this unit housed three bedrooms and a bathroom.
Fuel load in the smoking area was moderate to low. The room was furnished with a sofa, TV, small end table, fan, and a few miscellaneous combustible items. Linoleum tiles covered the subfloor material and a "throw" rug was placed over the tile in the room's most heavily traveled area. Three walls were painted gypsum board and the last wall was masonry with a painted finish. The ceiling also had a painted finish. There was no window in the smoking area; all of the building's doors and windows to the outside were closed at the time of the fire.

Fire Protection

The building's sprinkler system was completed and designed to conform to criteria established in a proposed revision for the 1980 edition of NFPA 13D, "Sprinkler Systems, One- and Two-Family Dwellings."\(^3\) The system's single supply riser was fed by the domestic water supply from each unit in the duplex facility. Water from the riser went to sprinklers zoned according to the building's two original dwelling units. The system was hydraulically designed to deliver .08 gpm per square foot for one-sprinkler operation and .06 gpm per square foot for three-sprinkler operation.\(^4\) Flow tests indicated the municipal water supply had a static pressure of 60 psi and residual pressure of 48 psi while flowing approximately 21 gpm. The supply piping was

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\(^3\)To date, no edition of NFPA 13D (1975, 1980, or 1984 - the most current stipulated edition) has the application of 13D sprinkler technology to residential occupancies, other than one and two-family dwellings and mobile homes, i.e. boarding homes, rooming houses, multi-family dwellings, etc. Use of a 13D-type system in this facility was approved by the Authority Having Jurisdiction.

\(^4\)At the time of design and installation, the 1975 edition of NFPA 13D was the applicable installation standard for one- and two-family dwellings. The original proposed revisions for the 1980 edition, as published in the Technical Committee Report, were the basis for the sprinkler system design. The 1980 edition of NFPA 13D, as finally adopted, required a flow of 18 gpm from one sprinkler and 13 gpm from each of two sprinklers flowing.
copper-type M and the maximum protected area per head was 150 square feet. Each side of the duplex had a 3/4-inch water supply metered through a 5/8-inch water meter.

All areas in the building were sprinklered. This coverage included closets, toilets, and foyer areas.

The sprinkler system contained 135°F standard pendent sprinklers with 3/8-inch discharge orifices and standard sensitivity fusible links. These sprinklers were used because "Listed Residential Sprinklers" were not available at the time of installation. After the fire, the building owner replaced all the sprinklers with new Listed Residential Sprinklers.

Water flow alarm bells were provided both inside the building and on its exterior. These bells were electrically operated and interlocked with a flow switch mounted in the sprinkler riser (see Figures 1 and 2). Smoke detectors were also provided to assist in occupant early warning. The single station, AC powered smoke detectors were mounted on the ceiling of each resident's bedroom. The last means for early warning was the manual pull-box alarm system. Pull stations were provided on each floor and these were interlocked with alarm bells also provided on each floor.

The Occupants

At the time of the fire, the boarding home was occupied by 10 elderly mentally impaired individuals. The residents ranged from 59 to 82 years of age. Five females lived on the second floor and four males had third floor rooms. The husband and wife "housekeeping" team were in their 50's. They

5 Current "Listed Residential Sprinklers" are evaluated by Underwriters Laboratories in accordance with UL 1626 which requires increased sensitivity (quick response) and superior water distribution characteristics compared to standard sprinklers.

6 The first residential sprinkler listed by UL for use in NFPA 13D systems was listed in April 1981.
lived on the first floor along with one male resident. Except for the resident suspected of accidentally starting the fire, occupants were in their respective rooms the evening of the fire.

As a standard practice the Washington, D.C. Fire Department performed annual supervised evacuation drills in this and all other boarding homes.

FIRE INCIDENT

On Tuesday, January 29, 1985 at approximately 2300 hours, the staff housekeeper and his wife were sleeping in their first floor room when they were awakened by a noise thought to be the alarm from a second floor smoke detector. Upon opening their room door, the housekeeper discovered that the sofa in the smoking area adjacent to their room was on fire. He immediately called the fire department, instructed his wife to leave the building, and began to evacuate occupants. As the housekeeper's wife was leaving, she noted that water was discharging from the sprinkler in the smoking area. Having cleared the first floor of its occupants, the housekeeper attempted to remove the smoldering sofa and carry it outside the building. During removal, a cushion apparently flared up causing the housekeeper to leave the sofa in the lobby.

The Washington, D.C. Fire Department received the alarm at 2258 hours and responded with four engines, two trucks, a rescue vehicle and a chief. Upon their arrival, fire fighters observed smoke coming from within the building and heard sprinkler alarm bells and smoke detectors operating. They found some residents on the front porch and immediately began rescue of the remaining occupants. Since the single sprinkler head operation had controlled the fire, only a 1 1/2-inch handline was used to extinguish the remaining fire in the smoldering seat cushion and a section of rug. These burning materials were in the lobby and adjacent to the smoking area.
Casualties and Damage

Ten of the occupants were taken to the hospital (7 by ambulance and 3 by private vehicle) for observation due to their exposure to smoke. One of the residents received minor burns; she was thought to have been involved in the ignition scenario. All occupants returned to the home early the following morning.

Property damage to the building was minimal. The minor fire damage occurred in the smoking room, including: the sofa, a section of the noncombustible wall behind the sofa, a small part of rug under the sofa, TV, and the lamp stand next to the sofa (see Photos 2 & 3). When the housekeeper attempted to move the sofa, minor fire damage was extended to the lobby area; some charring and discoloration of paint on the walls occurred. Most smoke damage in the building was minor and could be removed by washing (see Photo 4). Water damage occurred in the smoking room, in the lobby area, and to the basement ceiling directly below these areas. The total fire loss was estimated at $1,000.00.

ANALYSIS

Investigators from the Washington, D.C. Fire Department determined that the fire started in the first floor smoking area. As evidenced by burn patterns, a cigarette apparently ignited the sofa's seat. Once established, the fire smoldered for an undetermined period of time accumulating smoke and heat in the 5 1/2 by 10 foot smoking area. Soon the smoke began to migrate to other areas through the door opening. Since the open stairway was adjacent to this opening, smoke traveled to the second and third floors. Smoke continued to accumulate on these floors and eventually penetrated into one of the occupants' rooms where it activated a smoke detector which alerted the housekeeping team. At about this time, the sprinkler system activated and
began to control the fire. After calling the fire department and initiating evacuation, the housekeeper attempted to remove the smoldering sofa and it apparently flared up near the lobby where he left it. Thus, the fire area was extended slightly.

First floor occupants were able to leave through the main entrance; however, smoke conditions delayed the upper floor occupants from evacuating. They had to be aided by fire department personnel who removed all occupants through the interior stairs.

Discussion

The sprinkler system provided in the Irving Street boarding home was designed and installed while the technology for residential sprinklers was still evolving. The system's designers adopted requirements for minimum water flow and coverage areas from the proposed revisions to the 1975 edition of NFPA 13D. They specified small orifice sprinkler heads to attain desired water flows and connected the sprinkler system to the domestic water supply. Since approved residential sprinkler hardware was not available, the innovative system installed in the Irving Street boarding home contained sprinklers normally used in standard sprinkler systems. As a result, the sprinklers installed had response times and water discharge characteristics typical of standard sprinklers.

This is significant in terms of the equipment's ability to function as a "Life Safety Sprinkler System." During the development of residential sprinklers, Factory Mutual performed independent tests using standard sensitivity sprinkler heads. These tests showed that, under certain circumstances, small orifice/standard sensitivity sprinkler heads (such as

those used in the Irving Street system) reacted too slowly and did not provide sufficient water to maintain a tenable atmosphere.

Nonetheless this system, like most NFPA 13 sprinkler systems, was able to place water on the fire and prevent its extension from the area of origin. Further, the system's activation maintained a relatively tenable atmosphere throughout the building and permitted the successful escape of all building occupants. Since this is specifically the intent of a "Life Safety" sprinkler system, the Irving Street system might appear comparable to a system installed in accordance with NFPA 13D. This is not the case, however.

The fire in the Irving Street facility was not a "worst case" scenario for a boarding home or even a standard dwelling. Small room size, noncombustible interior finish, light fire loading and degree of ventilation resulted in a fire which a standard sprinkler head could control before untenable conditions were reached.

Changes in one or more of these parameters could occur in other residential settings resulting in a fire which could greatly tax a standard sprinkler's ability to maintain tenable conditions. Therefore, the importance of providing residential sprinklers in order to achieve the Life Safety objectives associated with a residential sprinkler installation should not be overlooked.

The dramatic difference between the Lamont Street fatal fire and this incident illustrates the value that a properly designed sprinkler system can have in protecting occupants of boarding homes -- an identified problem occupancy. Even though these properties were nearly identical, the fire scenarios similar, and the mobility of occupants nearly the same, the outcome was quite different. There is little doubt that, had it not been for early detection of the fire by the smoke detector and operation of the sprinkler system, more lives could have been lost in this fire.
All witnesses to this fire agree that the operation of the sprinkler system averted another tragedy. Howard E. Dixon, Deputy Fire Chief, made the following statement about the fire:

"The major factor in this scenario was the activated sprinkler head which contained the fire to its area of origin and prevented even heavier smoke conditions on the upper, occupied floors. The sounding of the smoke detectors alerted the residents of the approaching danger."
APPENDICES
AUTOMATIC SPRINKLER THAT ACTUATED
- OTHER AUTOMATIC SPRINKLERS
+ FIRE ORIGIN
+ LOCATION OF SMOLENDERING SOFA
AFTER BEING MOVED

SPRINKLER ALARM BELL
△ FA FIRE ALARM BELL
□ PS PULL STATION

FIGURE - 1  1307-1305 IRVING STREET
Fire in Boarding Home: A Success Story

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Unlike other boarding home fires investigated by the NFPA, smoke detectors and an automatic sprinkler system operated in this one, preventing serious injuries and deaths. The fire is significant because it demonstrates the importance that an automatic sprinkler system can have in improving the level of protection in boarding homes — occupancies with an identified fire problem.

On January 29, 1985, a fire occurred on the first floor of a boarding home located at 1307 Irving Street in Washington, DC. The building documentation was done by Robert Smith, a representative from the NFPA’s Washington office. Lt. Jack Fletcher (retired), formerly with the Washington, DC, Fire Marshal’s Office, provided the photographs.

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had once been two single-family dwellings (row houses) that had been combined and converted to a boarding home for group living. The fire, which is believed to have been caused by accidental misuse of smoking materials, had involved a couch in the facility's smoking room and a small amount of other combustible materials before the activation of smoke detectors alerted the occupants and automatic sprinklers controlled the fire. Although smoke had spread throughout most of the structure, the occupants were able to escape, with fire department assistance. The only injuries sustained were minor.

Background

Since 1978, 44 multiple-death boarding home fires (those that kill three or more persons) have been reported to the NFPA; these fires have resulted in 268 deaths. In relation to the estimated boarding home population of two million persons, these figures indicate that the risk of dying in a multiple-death fire is roughly five times higher in a boarding home than in all other types of residential properties combined. To further indicate the severity of these fires, many of the multiple-death boarding home fires killed at least half the occupants.

A typical example of a boarding home fire investigated by the NFPA occurred in the early morning hours of April 11, 1979. The incident took place in a duplex community residence facility on Lamont Street in the northwest section of Washington, DC. The fire, caused by misuse of smoking materials that ignited a couch in the first-floor lounge area, traveled up an open stairway and took the lives of 10 occupants, injuring 5 others. This tragedy and others have focused national attention on the fire problems unique to boarding homes.  

After the Lamont Street tragedy, the District of Columbia government proposed a program to demonstrate how boarding home facilities might be protected by the use of automatic sprinklers. With US Fire Administration funding, Washington, DC, fire officials located a duplex dwelling unit that had been converted to a boarding home and installed a residential sprinkler system. The property at 1305–1307 Irving Street was selected because it closely resembled the property at Lamont Street.


The Irving Street Building

Originally, the facility consisted of two single-family dwellings separated by a party wall. This "row house" arrangement can be found in many large American cities and is typical of turn-of-the-century construction of residential occupancies. The structures, three stories high plus basement, were of ordinary construction and had flat roofs. During the buildings' conversion for use as a single boarding home, the party wall separating the two units was breached, providing openings in several places that would allow the occupants to move freely between the units. These openings were cut into the walls of the basement, first, and second floors. A 1¾-inch solid-core door at each opening provided protection against horizontal smoke or fire spread.

Both of the original front entrances were retained. Two stairways, one adjacent to each unit's back door, led to the basement areas. Non-rated doors contributed to the separation between the first floor and the basement areas. Two exterior doors led directly from the basement to the outside. Two additional interior stairways, one centrally located in each unit, serviced the building. Terminating on the first floor, these stairways were open and provided access to the second and third floors. An exterior fire escape located on the alley side of the 1307 Irving Street building provided a limited secondary means of egress from the second and third floors. During a fire emergency, most of the occupants would have had to travel past the open stairway to reach the fire escape.

The facility's kitchen and dining area were located in the basement of 1307 Irving Street. This unit's first floor contained an office, the housekeeper's bedroom, another bedroom, a living room/lobby area, and a smoking area (the room of fire origin). The second and third floors in this unit each housed three bedrooms and a bathroom.

The fuel load in the smoking area was moderate to low. The room was furnished with a couch, television set, small end table, fan, and a few miscellaneous combustible items. Linoleum tiles covered the subfloor material and a "throw" rug was placed over the tile in the room's most heavily traveled area. Three walls were of painted gypsumboard and the fourth was of masonry with a painted finish. The ceiling also had a painted finish. There was no window in the smoking area. All of the building's windows and doors to the outside were closed at the time of the fire.

Fire Protection

The building's sprinkler system was completed and designed to conform to criteria established in a proposed revision for the 1980 Edition of NFPA 13D. Sprinkler Systems for One- and Two-Family Dwellings. The system's single supply riser was fed by the domestic water supply from each unit in the duplex facility. Water from the riser went to sprinklers zoned according to the building's two original dwelling units. The system was hydraulically designed to deliver .06 gallons per minute (gpm) per square foot for one-sprinkler operation and .06 gpm per square foot for three-sprinkler operation. Flow

3 To date, no edition of NFPA 13D (1975, 1980, or 1984 — the most current stipulated edition) contains the application of 13D sprinkler technology to residential occupancies other than one- and two-family dwellings and mobile homes — i.e., the boarding homes, rooming houses, multifamily dwellings, etc. Use of a 13D-type sprinkler system in this facility was approved by the authority having jurisdiction.

4 At the time the system was designed, the 1975 Edition of NFPA 13D was the applicable installation standard for one- and two-family dwellings. The original proposed revisions for the 1980 Edition, as published in the Technical Committee Report, were the basis for the sprinkler system design. The 1980 Edition of NFPA 13D, as finally adopted, required a flow of 15 gpm from one sprinkler and 13 gpm from each of two sprinklers flowing.

Figure 2. Details of the riser.
tests indicated the municipal water supply had a static pressure of 60 pounds per square inch (psi) and residual pressure of 48 psi while flowing approximately 21 gpm. The supply piping was copper-type M and the maximum protected area per head was 150 square feet. Each side of the duplex had a ¾-inch water supply metered through a ¾-inch water meter.

All areas in the building were sprinklered, including the closets, bathrooms, and foyer areas.

The sprinkler system included 135°F standard pendent sprinklers with ¾-inch discharge orifices and standard sensitivity fusible links. These sprinklers were used because “Listed Residential Sprinklers” were not available at the time of installation.\(^5\)\(^6\) After the fire, the building owner replaced all the sprinklers with new Listed Residential Sprinklers.

Waterflow alarm bells were provided both inside the building and on its exterior. These bells were electrically operated and interlocked with a flow switch mounted in the sprinkler riser. (See Figures 1 and 2.) Smoke detectors were also provided to assist in occupant early warning. The single-station, AC-powered smoke detectors were mounted on the ceiling of each resident’s bedroom. A third means for early warning of occupants was the manual pull-box alarm system. Pull stations were provided on each floor; these were interlocked with alarm bells also provided on each floor.

The Occupants

At the time of the fire, the boarding home was occupied by 10 elderly, mentally impaired residents ranging from 59 to 82 years of age. Five females lived on the second floor and four males had third-floor rooms. The husband and wife staff “housekeeping” team were in their fifties. They lived on the first floor, along with one male resident. Except for the resident suspected of accidentally starting the fire, all of the occupants were in their respective rooms on the evening of the fire.

As a standard practice, the Washington, DC, Fire Department performed annual, supervised evacuation drills in this and all other boarding homes.

The Fire

On Tuesday, January 29, 1985 at approximately 11:00 pm, the staff housekeeper and his wife were asleep in their first-floor room when they were awakened by a noise they thought was the alarm from a second-floor smoke detector. Opening their room door, the housekeeper discovered that the couch in the smoking area adjacent to their room was on fire. He immediately telephoned the fire department, instructed his wife to leave the building, and began to evacuate the occupants. As the housekeeper’s wife was leaving, she noted that water was discharging from the sprinkler in the smoking area. After clearing the first floor of its occupants, the housekeeper attempted to remove the smoldering couch and carry it outside the building. While he was doing this, the fire apparently flared up in a cushion, forcing the housekeeper to leave the couch in the lobby.

The Washington, DC, Fire Department received the alarm at 10:58 pm and responded with four engines, two trucks, a rescue vehicle, and a chief. On their arrival, firefighters saw smoke coming from the interior of the building and heard sprinkler alarm bells and smoke detectors operating. They found some residents on the front porch and immediately began to rescue the remaining occupants. Because the

The couch that was involved in the fire.
single sprinkler-head activation had controlled the fire, only a 1½-inch handline was needed to extinguish the remaining fires in the smoldering couch seat cushion and a section of the rug. These burning materials were in the lobby, adjacent to the smoking area.

Casualties and Damage

Because of their exposure to smoke, ten of the occupants were taken to the hospital for observation, seven by ambulance and three by private vehicle. One of the residents suffered minor burns; she was thought to have been involved in the ignition scenario. All of the occupants returned to the home early the following morning.

Property damage to the building was minimal. The minor fire damage, which occurred in the smoking room, included the couch, a section of the noncombustible wall behind the couch, plus a small part of the rug under the couch, the television set, and the lamp stand next to the sofa. When the housekeeper attempted to move the couch, minor fire damage was extended to the lobby area; some charring and discoloration of paint occurred on the walls. Most of the smoke damage in the building was minor and was removed by washing. Water damage occurred in the smoking room, in the lobby area, and on the basement ceiling directly below these areas. The total fire loss was estimated at $1,000.

Analysis

Investigators from the Washington, DC, Fire Department determined that the fire started in the first-floor smoking area. Burn patterns provided evidence that a cigarette had apparently ignited the couch's seat. Once established, the fire had smoldered for an undetermined period of time, during which smoke and heat accumulated in the 5½-by-10-foot smoking area. Soon the smoke began to migrate to other areas through the door opening. Since the open stairway was adjacent to this opening, smoke then traveled up to the second and third floors. Smoke continued to accumulate on these floors and eventually penetrated into one of the occupants' rooms, where it activated a smoke detector that alerted the housekeeping team. At about this time, the sprinkler system activated and began to control the fire. After telephoning the fire department and initiating evacuation, the housekeeper attempted to remove the smoldering couch. When he reached the lobby, the fire apparently flared up in a cushion and he left the couch there. Thus, the fire area was extended slightly.

First-floor occupants were able to leave through the main entrance; however, smoke conditions delayed the upper-floor occupants from evacuating. They had to be aided by fire department personnel, who assisted all of these occupants down the interior stairs and out of the building through the main entrance.

Discussion

The sprinkler system provided in the Irving Street boarding home was designed and installed while the technology for residential sprinklers was still evolving. The system's designers adopted requirements for minimum waterflow and coverage areas from the proposed revisions to the 1975 Edition of NFPA 13D. They specified small orifice sprinkler heads to attain desired waterflows and connected the sprinkler system to the domestic water supply. Since approved residential sprinkler hardware was not available, the innovative system installed in the Irving Street boarding home contained sprinklers normally used in standard sprinkler systems. As a result, the sprinklers installed had response times and water discharge characteristics typical of standard sprinklers.
This is significant in terms of the equipment’s ability to function as a “Life Safety Sprinkler System.” During the development of residential sprinklers, Factory Mutual performed independent tests using standard sensitivity sprinkler heads. These tests showed that, under certain circumstances, small orifice/standard sensitivity sprinkler heads (such as those used in the Irving Street system) reacted too slowly and did not provide sufficient water to maintain a tenable atmosphere.

Nonetheless this system, like most NFPA 13 sprinkler systems, was able to place water on the fire and prevent its extension from the area of origin. Further, the system’s activation maintained a relatively tenable atmosphere throughout the building and permitted the successful escape of all the building’s occupants. Since this is specifically the intent of a “Life Safety Sprinkler System,” the Irving Street system might appear comparable to a system installed in accordance with NFPA 13D. This is not the case, however.

The fire in the Irving Street facility was not a “worst case” scenario for a boarding home or even a standard dwelling. Small room size, noncombustible interior finish, light fire loading, and degree of ventilation resulted in a fire that a standard sprinkler head could control before untenable conditions were reached.

Changes in one or more of these parameters could occur in other residential settings, resulting in a fire that could greatly tax a standard sprinkler’s ability to maintain tenable conditions. Therefore, the importance of providing residential sprinklers in order to achieve the life safety objectives associated with a residential sprinkler installation should not be overlooked.

The dramatic difference between the fatal Lamont Street fire and this fire illustrates the value that a properly designed sprinkler system can have in protecting occupants of boarding homes — an identified problem occupancy. Even though these properties were nearly identical, the fire scenarios similar, and the mobility of occupants nearly the same, the outcome was quite different. There is little doubt that, had it not been for early detection of the fire by the smoke detector and operation of the sprinkler system, more lives could have been lost in this fire.

All the witnesses to this fire agree that the operation of the sprinkler system averted another tragedy. Howard E. Dixon, Deputy Fire Chief, made the following statement about the fire:

The major factor in this scenario was the activated sprinkler head which contained the fire to its area of origin and prevented even heavier smoke conditions on the upper, occupied floors. The sounding of smoke detectors alerted the residents of the approaching danger.

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