NIOSH FIRE FIGHTER FATALITY INVESTIGATION AND PREVENTION PROGRAM

LINE-OF-DUTY DEATH REPORT

Firefighter fatally injured after falling from third floor at residential structure fire – Massachusetts

F2026-08 MA · November 2026

KEY POINTS

- On May 23, 2026, one career firefighter was fatally injured after he fell from a third-floor enclosed porch.
- Renovations to the porches were inconsistent with generally accepted construction standards.
- Fire exposure severely damaged the porch's structural framing, resulting in extensive thermal degradation and reduced structural integrity.
- During overhaul operations, firefighters face greater risk when extensive fire conditions have weakened the structure and poor construction has compromised its structural components.

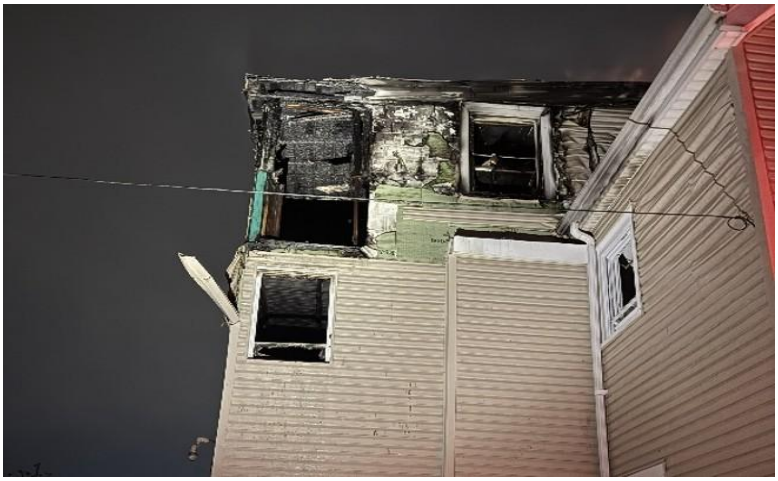


Image 1. View of third-floor enclosed porch/stairway. (Source: Fire department)

- The structure was classified as a single-family residential occupancy but was being used as an unpermitted multi-family occupancy.

SUMMARY

A three-alarm fire in a residential structure caused extensive fire damage to the enclosed rear porches on the second and third floors. The main body of the fire remained concentrated in the rear of the building, significantly compromising the structural integrity of the porch assemblies. While operating on the rear porch, a Rescue 2 firefighter (R2FF) attempted to remove a smoldering section of wall beneath a window. As he pushed and pulled on the wall to dislodge it, the section suddenly broke free. The unexpected release caused the firefighter to lose his balance and fall with the wall section away from the building. He fell approximately 20 ft to an asphalt surface and sustained fatal injuries. *See Table 1 for contributing factors and prevention actions.*

Table 1. Contributing factors and prevention actions

Contributing factor	Prevention action summary
1. Structural risk awareness	Use extreme caution during overhaul when the structure has been subjected to extensive fire and water application.
2. Identification of post-fire hazards	Perform a post-fire building survey to identify and make firefighters aware of structurally-compromised areas, readily-identifiable hazards, and unsafe conditions.
3. Personal protective equipment during overhaul operations	Ensure fire officers and firefighters wear appropriate personal protective equipment during overhaul operations when working in a hazard zone.
4. Unpermitted renovations and poor construction	Ensure the applicable fire and life safety codes are enforced for renovations in residential occupancies.

BACKGROUND

Table 2. Fire department information

Category	Information
Department type	Career
Divisions	Two line and two staff divisions
Districts	10
Jurisdiction	48 square miles of land and 41 square miles of water
Population	675,000 residents with over 1.5 million visitors during special events
Average response	106,000 calls for service annually
Personnel	1,620
Shifts	Four
Shift type	42-hour work week consisting of 24 hours on, 48 hours off, 24 hours on, and 96 hours off
Shift staffing	Total daily staffing of 265 (Division 1=140 and Division 2=125)
Leadership	One fire commissioner/fire chief, chief of operations field services, chief of operations support services, deputy commissioner labor relations, human resource and legal, deputy commissioner administration and finance

Apparatus, staffing, and communications

At 20:06, the following units were dispatched for a residential structure fire (see Table 3):

Table 3: Initial units dispatched

Apparatus	Staffing	On-scene arrival
Engine 17 (E17)	4	20:08
Ladder 7 (L7)	4	20:08
Engine 18 (E18)	4	20:10
Ladder 4 (L4)	4	20:09
Engine 21 (E21)	4	20:10
District 7	2	20:10
Engine 14 (E14)	4	20:15
Rescue 2 (R2)	4	20:15

The city operates a public safety answering point known as the Fire Alarm Office (FAO) which dispatches all emergency and non-emergency fire calls. Once units arrive on scene and confirm active fire conditions, FAO deploys additional resources, including a rapid intervention team (RIT) chief, a RIT ladder, an accountability chief, a tower unit, a rehabilitation unit, and a drone unit.

Training, education, and professional development

The fire department provides initial recruit training through its in-house fire academy. The 16-week program prepares recruits to earn NFPA 1010 Firefighter I and II certifications. The curriculum emphasizes essential firefighting competencies, including fire suppression operations, search and rescue, physical fitness, and endurance. Recruits also complete Hazardous Materials Operations training and earn Pro Board® certification through instruction provided by the International Association of Fire Fighters (IAFF).

The academy culminates in a 13-evolution, fireground-specific functional skills obstacle course that evaluates each recruit's ability to perform critical firefighting tasks under realistic, high-stress conditions. After graduating from the fire academy, recruits who do not already hold emergency medical technician (EMT) certification complete an eight-week EMT course.

Each year, every fire district participates in a back-to-basics training program that emphasizes realistic live-fire exercises involving multiple frontline fire companies and chief officers. The fire department also partners with municipal, state, and federal fire and law enforcement agencies to deliver specialized training, conduct multi-agency exercises, and support professional development. These collaborative efforts strengthen interagency coordination, promote the exchange of best practices, and enhance regional emergency response capabilities. Fire officers participate in a fire college professional education program, specifically designed for company officers. These programs strengthen leadership skills, enhance operational decision-making, and prepare officers to effectively manage personnel, emergency incidents, and daily fire service operations.

R2FF had 24 years of total fire service with advanced experience and training in fire suppression and specialized technical rescue. District 7 (initial incident commander) had 14 years of total fire service at the department. He was recently promoted to District chief. Division 2 (second incident commander) had 40 years of total fire service experience and was promoted to deputy chief in 2007.

Cause of death

The report from the Commonwealth of Massachusetts Office of the Medical Examiner stated that the cause of death was multiple blunt force injuries to the body including the head, neck, and torso.

Building construction

This incident involved a Type V wood-frame residential structure built in 1900. The three-story residence contained 2,186 sq ft of living space, on a 3,910 sq ft lot. The structure contained six bedrooms, two full bathrooms, and one half bathroom. It featured a gable roof, a full basement, and vinyl exterior siding installed over foam plastic insultation attached to wood siding. A narrow driveway on Side Bravo extended from the street to a detached two-car garage located behind the structure.



Image 2. View of Side Alpha, pre-fire. (Source: Fire department)



Image 3. View of the rear of the same structural design, without porch and stairway, as seen on the neighboring house. (Source: NIOSH).



Image 4. View of the rear of the structure showing the added porch and stairway. (Source: Fire department).



Figure 1, 2, 3: Diagrams of 1st, 2nd and 3rd floors of structure, L-R. (Source: Fire department)

Rear enclosed porch/stairway

The structure's rear contained a three-story enclosed porch/stairway, including a roof assembly. A structural engineer conducted a post-fire inspection. The structural engineer concluded that the porch/stairway was originally constructed as an open structure with handrails and was subsequently enclosed. The structural engineer also concluded that the shed roof above the third floor was likely added during a later modification.



Image 5. View of stairway leading to third floor. (Source: Fire department)

The structural engineer identified additional construction deficiencies, including inadequately-connected wood support beams, improperly-framed floor headers and trimmers at the stair openings, unsound wall construction, and generally poor workmanship. Based on these observations, the structural engineer concluded that these deficiencies raised significant concerns regarding the structural integrity and adequacy of the construction, pre-fire.



Image 6. View of second-floor porch structural support. (Source: NIOSH)

Renovation and occupancy permits

The fire primarily involved the second and third floors of the enclosed porch/stairway and extended to the roof. Records from the City Inspectional Services Department identified permits for the installation of a second porch/stairway in 1922, along with permits for various nonstructural siding and roofing projects completed over time. The department also received a permit application to convert the property to a two-family dwelling; however, it denied the application. Despite the denial, the property was being operated as a multi-family occupancy. *More about renovation and occupancy permits for this incident can be found under more information.*



Image 7. View of third-floor enclosed porch/stairway. (Source: Fire department)

Failed wall/window

The section of the third-floor wall beneath the Side Bravo window opening failed. The structural engineer concluded that insufficient original construction, inadequate framing, poor workmanship, and the lack of proper structural connections and lateral support caused the failure. The structural engineer also determined that the failed wall section did not incorporate conventional framing and appeared to rely primarily on the T1-11 sheathing to provide structural capacity.



Image 8. View of third-floor porch window. (Source: Fire department)

The structural engineer determined that the window opening lacked king studs and jack studs at the sides, a structural header above the opening, a sill plate below the opening, and cripple studs above and below the opening. These framing members are standard components of conventional wood-framed wall construction. The engineer identified only a single piece of 2 in x 4 in wood blocking associated with the opening, which may have been attached to the interior face of the T1-11 siding.

The remaining wall section lacked adequate anchorage to the roof structure and exhibited substantial lateral instability. The fire significantly charred the adjacent framing and sheathing, which reduced the strength of the members and the holding capacity of the fasteners connecting the wall components. Fire suppression and overhaul operations also removed the interior thin plywood finishes, which likely further reduced the wall's lateral stability. The structural engineer concluded that the wall section's compromised condition allowed relatively minor lateral forces associated with post-fire activities or incidental contact to cause the failure.

Fire cause and origin

The fire department's cause-and-origin investigation classified the fire as accidental. Investigators identified the third-floor rear porch as the area of origin and determined that lithium-ion batteries stored inside a plastic toolbox went into thermal runaway, igniting the fire.

Personal protective equipment

During the firefighting operations, the R2FF was wearing full structural firefighting turnout gear and a NIOSH Approved® self-contained breathing apparatus (SCBA). During overhaul operations, he removed his SCBA. It was also noted that the helmet chin strap was not securely fastened.

Weather conditions

At 19:54, on May 23, 2026, the outdoor temperature was 56°F, dewpoint was 48°F, humidity was 75%, the wind was out of the east at 6 mph, there was no precipitation, and conditions were cloudy [Weather Underground 2026].

TIMELINE

This is a timeline of events. Sources include dispatch records, audio recordings, and witness statements, among others. This is not an official record of events.

Day 1: May 23, 2025

20:05

- FAO received 911 call reporting a residential structure fire.

20:06

- FAO transmitted a full alarm assignment for a residential structure fire. District 7, E14, E17, E18, E21, L4, L7, and R2 were dispatched.

20:07

- FAO advised that channel 2 would serve as the fireground communications channel and tactical channel (CTAC) would be the command channel.
- E18 was designated as Rapid Intervention Team (RIT).

20:08

- L7 arrived on scene. L7 officer reported a 2 ½ story wood-frame with smoke showing.



Image 9. View of Side Alpha. (Source: Fire department)

20:09

- Upon confirmation of a structure fire, FAO assigned additional resources. This included District 8 (accountability), District 9 (RIT), Safety Chief (H1), Tower 10, Rehab Unit 1, and Drone 1.
- FAO announced the fire was on Sides Charlie/Delta.

20:10

- District 7 arrived on scene, completed a 360 size-up, and requested a second alarm.

20:11

- FAO transmitted a second alarm and dispatched Engines 20, 24, 39, Ladder 18, District 4, Division 2, and public information officer 22 (PIO 22), Special Unit, Fire Investigation (Kilo 6), Fire Investigation Photographer (Kilo 7), Maintenance Service (Mike 5), and Air Supply Unit (W12).
- District 7 called L7 to confirm a third-floor primary search was completed. L7 officer responded they were proceeding to third floor.
- Engine 17 (E17) requested their hoseline to be charged.

20:12

- E17 requested roof ventilation, a truck report to the rear, and increased pressure on the hoseline. This request was made on channel 1.

20:13

- Ladder 6 (L6) officer reported on channel 1 that the rear steps were burned out on the third floor. He requested a hoseline to the rear of the structure.
- FAO repeated E17 and L6 officer's transmissions on channel 2.
- District 7 acknowledged L6's request for a hoseline to the rear. District 7 reported the roof was ventilated.



Image 10. View of personnel ventilating roof. (Source: Fire department)

20:14

- All units were ordered to switch to channel 2.
- District 7 asked FAO to identify the RIT companies. FAO replied E18, L6, and District 9 were assigned RIT.
- District 7 gave L6 an assignment and ordered FAO to assign another unit to replace them for RIT.

20:15

- District 8 arrived on scene and assumed accountability officer responsibilities.

20:16

- L4 reported fire conditions on the Side Delta and requested crews initiate fire attack from the exposure side.
- District 7 directed E21 to charge Engine 24's (E24) hoseline and support fire attack operations on Side Delta.

20:17-20:18

- FAO advised District 9 that the additional RIT was Ladder 18 (L18).

20:19

- District 7 called E17 to ask if they had water on the fire.

20:20-20:21

- District 7 requested a third alarm. FAO transmitted a third alarm, assigning Engine 2 (E2) and Ladder 19 (19).
- District 8 directed FAO to conduct a personnel accountability report (PAR). FAO requested that any unit who thought “their company is not intact or in trouble notify FAO.”
- Drone 1 arrived on scene.

20:22

- Ladder 10 (L10) notified District 7 that the primary search on the second floor was “negative.”
- Message was transmitted that E18 was on second floor and E17 was on third floor.
- District 9 advised FAO that E18 had an assignment and requested another unit for RIT.
- Engine 52 (E52) was assigned RIT.

20:23

- L6 reported the fire was knocked down on the rear porches and made an announcement that the porches were spongy.
- District 9 advised L4, L7, and Ladder 23 (L23) were on the third floor.
- FAO assigned E52 and Ladder 29 (L29) as RIT.

20:24

- Division 2 arrived on the scene and assumed command, assigning operations to District 7.

20:25

- E17 reported that the fire was knocked down and they were checking for extension.
- L23 and E18 were working on the third floor with a hoseline and were getting the ceiling open.
- FAO notified District 9 that E52 and L29 were RIT.
- Overhaul operations began in the structure. R2FF began overhaul on the third-floor porch.

20:26

- District 9 reported E18 started to get water on the fire blowing out Side Alpha.
- Division 2 reported 2 ½ story wood frame with heavy fire in the cockloft area that appeared to be knocked down. He advised that all companies were working.



Image 11. View of heavy fire conditions in attic. (Source: Fire department)

20:28

- H1 transmitted that no more personnel were needed in the attic as it was crowded.

20:32

- Rescue 2 officer notified Division 2 that the rear stairway had been severely compromised and requested that District 9 advise all personnel to use extreme caution when using the stairs.
- District 9 transmitted that sufficient personnel were operating on the upper floor and that no additional personnel should respond upstairs.

20:33

- FAO transmitted an urgent tone and announced that all personnel should use extreme caution when using the rear staircase because it was severely compromised.

20:35

- District 7 began rotating companies.

20:38

- Division 2 advised FAO that he would be releasing third alarm companies.

20:39 – 20:49

- While operating on the rear porch, R2FF attempted to remove a smoldering section of wall beneath a window. As he pushed and pulled on the wall to dislodge it, the section suddenly broke free. The unexpected release caused the firefighter to lose his balance and fall with the wall section away from the building.
- E21 officer declared a Mayday and reported a member (R2FF) fell off the third-floor porch.
- Mayday tones were activated and an emergency announcement was transmitted that a firefighter had

fallen from the third-floor porch.

- District 9 acknowledged the Mayday transmission.

20:50

- FAO received an unknown message to have all personnel evacuate the rear porches.
- Personnel treated R2FF and transferred him to emergency medical services (EMS). He was transported to a local hospital where he was later declared deceased.

20:57

- Division 2 advised FAO he would be releasing second alarm companies.
- Companies remained on scene for an extended period to support the investigation and incident management operations.

CONTRIBUTING FACTORS AND PREVENTION ACTIONS



Contributing factor · Structural risk awareness
Prevention action · Firefighters should use extreme caution during overhaul when a structure has been subjected to extensive fire and water application.

The fire consumed most of the rear-enclosed porch and stairway assembly. Firefighters operating in the structure's rear enclosed porch/stairway observed severe fire damage and significant structural deficiencies. After the incident, a structural engineer determined that the addition incorporated structural components that did not meet accepted construction standards. Poor workmanship and the use of unapproved materials further compromised the structural integrity of the rear addition. The wood framing exhibited deep charring and had become brittle and carbonized, indicating prolonged exposure to extreme heat. Combined with the extensive fire damage, these conditions rendered the structure unstable and significantly increased the risk of structural collapse.

Although personnel often perceive overhaul operations as lower risk because active fire conditions have subsided and visible heat and smoke have diminished, these operations still present significant hazards due to the state of the post-fire building [NFPA 1550 2024; NIOSH 2016]. In addition to respiratory hazards, firefighters face numerous other risks during overhaul operations. Fire-damaged floors, stairs, and structural components may have been weakened by fire and can fail without warning, increasing the risk of falls and structural collapse. The physically demanding nature of overhaul operations can also lead to exhaustion and fatigue, which can reduce situational awareness, impair decision-making, and increase the likelihood of injury [NIOSH 2016]. During the growth stage, the fire consumes combustible structural members. During the decay stage and post-suppression activities, the structure is further weakened due to the poor state of remaining structural members and the buildup of water. The contents of a building, such as furniture or machinery, also contribute to the potential for structural collapse by [IFSTA 2015; NIOSH 2025]:

- Adding fuel load into the structure and generating higher temperatures that weaken structural components
- Adding weight to the weakened structural members
- Retaining water, which increases the weight of contents and applies more stress on the structural members

Fire officers and firefighters should strive to maintain situational awareness of a structure's integrity throughout

overhaul operations, effectively communicate their findings with key personnel throughout the response, and seek to establish and reestablish shared situational awareness as overhaul is completed to support effective decision making. Maintaining situational awareness can be applied in a similar way to performing an ongoing risk assessment at an active structure fire where information is constantly collected through observation, an evaluation of factors is performed, and decisions for response are made [NIOSH 2026a].



Contributing factor · Identification of post-fire hazards
Prevention action · Fire officers, division/group supervisors, or safety officers should perform a post-fire building survey to identify and make firefighters aware of structurally-compromised areas, readily identifiable hazards, and unsafe conditions.

Firefighters reported significant fire damage to portions of the enclosed rear porch. Command transmitted a radio announcement advising that the rear stairway had been compromised and directed personnel to use extreme caution. At the time of the announcement, multiple firefighters were operating on the porch and rear stairway. They encountered spongy flooring and expressed concerns about the poor construction and structural integrity of the porch addition.

Prior to overhaul, a highly systematic risk assessment must be performed by a limited but qualified crew led by a trained safety officer. The action plan for this phase of the fire operation is referred to as the post-fire building survey. Fire officers, division/group supervisors, or safety officers should complete this survey. Providing Incident Safety Officer training to fire officers and division/group supervisors expands the safety presence, enables a comprehensive post-fire building survey, and helps identify needs and exclusion areas both inside and outside the structure. This helps to maintain safety throughout the incident. The purpose of this survey is to identify the general overall condition of the building after fire and firefighting effects on the structure. The post-fire building survey should identify the following [IFSTA 2024; NIOSH 2025]:

- General overall condition of the building(s) following fire and firefighting efforts (excess water or added water weight standing on floors or areas)
- Obvious or subtle building, system, or component impacts that dictate exclusion or additional collapse zone modifications
- Structurally compromised areas and readily identifiable hazards and unsafe conditions
- Inherent building construction deficiencies (e.g., renovations)
- Safe access and areas for overhaul crews to work within the structure
- Proper marking needs and/or posting of necessary access control personnel

Findings from a post-fire building survey should be reported back to the incident commander with a recommendation(s) on alternatives for overhaul if necessary to ensure the safety of personnel. Recommendation examples may be hydraulic overhaul or waiting for additional resources for proper shoring.

The post-fire building survey should thoroughly identify needs and exclusion areas both inside and outside the structure. The team must communicate danger areas (collapse and exclusion zones) to the incident commander that may not have been identified in the initial risk assessment. These areas can then be marked as exclusion zones and communicated to everyone on the fireground and the incident commander can adjust their incident action plan for this phase of the fire operation [NIOSH 2016].



Contributing factor · Personal protective equipment during overhaul operations
Prevention action · Fire departments should ensure fire officers and firefighters wear appropriate personal protective equipment during overhaul operations when working in hazard zone.

The R2FF participated in overhaul operations to locate concealed fire and remove smoldering structural components. During these physically demanding activities, he removed his SCBA. He was wearing his helmet

at the time of the fall but his helmet strap was not secured. The force of the fall dislodged the helmet before he struck the asphalt surface.

A tendency to dress down during the overhaul phase of an operation can lead to unnecessary injuries. One of the primary concerns for firefighters operating in a structure during overhaul is respiratory protection. Without SCBA, firefighters' decision-making ability may be altered due to symptoms such as dizziness or exhaustion caused by exposure to smoke and byproducts of combustion. The respiratory exposures at structure fires are unique to each fire response and potentially contribute to adverse health outcomes [Harvey et al. 2024]. Depending on building contents, toxic gases such as carbon monoxide and hydrogen cyanide may be present in smoke at a structure fire. These gases can reduce the percentage of oxygen in the fire environment [NIOSH 2026b; NFPA 1400 2026].

Previous measurements of "light smoke" present after residential fires during the mop-up were found to contain known carcinogens like acetaldehyde, benzine, formaldehyde, and styrene, as well as sub-micron particulates [Horn et al. 2021]. Symptoms for exposure to these gases and chemicals include weakness, exhaustion, dizziness, as well as confusion and can occur in a short period of time depending on concentration [NIOSH 2007; IFSTA 2024]. Even after airing out the structure, removing the SCBA facepiece can be unsafe [NIOSH 2006]. Additionally, another concern during overhaul is head protection. During structural firefighting, helmets are designed to prevent heat and embers from reaching ears and neck, heat and cold, and protect the head from impact injuries caused by objects or falls [IFSTA 2024].

NFPA 1550 [2024] states personal protective equipment should be used whenever a member is exposed or potentially exposed to the hazards for which the personal protective equipment is provided and that it shall be suitable for the tasks that the member is expected to perform. The incident commander should establish the level of personal protective equipment necessary to enter the fire zones (hot, warm, and cold). Personal protective equipment provides critical protection against the hazards encountered during fire suppression and overhaul operations. NFPA 1550 [2024] states that the incident commander shall ensure that personnel operating in an immediately dangerous to life or health (IDLH) atmosphere or other hazardous area wear personal protective equipment appropriate for the hazards present. Members performing overhaul operations should continue to wear the required personal protective equipment, including SCBA and secured helmets. When the incident commander cannot directly monitor compliance, the supervising fire officer should ensure that personnel wear and properly use all required personal protective equipment. Proper use of personal protective equipment is essential to provide the intended level of protection against thermal, respiratory, impact, and other operational hazards [NFPA 1550 2024].



Contributing factor · Unpermitted renovations and poor construction
Prevention action · Governing municipalities (federal, state, regional/county, and local) should ensure that applicable fire and life safety codes are enforced for renovations in residential occupancies.

The structure involved in this incident had undergone significant renovations and additions at the rear of the building. Available permit records documented a 1922 permit for the addition of a second stairway. However, the rear porch enclosure incorporated substantially more construction than the permit documented, including modifications to the shed roof and the construction of walls, stairways, and windows. The engineering report identified significant structural deficiencies throughout the rear porch and stairway enclosure, indicating that the renovations extended well beyond the scope of the documented permit. These undocumented modifications created a life safety hazard by introducing inadequate structural framing, deficient connections, and insufficient lateral support, which compromised the structural integrity of the rear porch and stairway enclosure. The fire department was not responsible for inspecting this residential structure for code compliance. Responsibility for building code enforcement, permitting, and inspections rested with the Inspectional Services Department (ISD) of the authority having jurisdiction (AHJ).

NFPA 1750 [2026] requires fire prevention inspection and code enforcement activities to ensure compliance with adopted codes and standards. The AHJ must determine the minimum resources, personnel, and equipment necessary to conduct effective code enforcement and inspection activities. NFPA 1750 [2026] recommends that fire departments establish and maintain effective working relationships with the agencies or authorities responsible for enforcing building codes. These partnerships enable departments to monitor the design, construction, alteration, renovation, and demolition of buildings and structures and identify potential fire protection concerns. They also facilitate the exchange of critical information, including inspection findings, permits, code violations, fire protection system maintenance and service records, fire investigations, emergency incident information, and renovation permit applications and approvals [NFPA 1750 2026; IFSTA 2016].

AHJs should ensure the applicable fire and life safety codes are enforced for renovations in residential occupancies. Permit applications for renovations often trigger different code requirements and can significantly affect fire department operations [IBC 2021]. For example, a renovation may introduce hazardous materials or create other unique hazards that require different fire suppression and rescue strategies and tactics [IFSTA 2016].

FIRE DEPARTMENT ACTIONS TO ECHO

Actions to echo are measures the fire department took before and during the incident that may have prevented further serious injuries or fatalities or may help prevent similar incidents. NIOSH investigators identified the following actions to echo:

Develop psychological safety and maintain situational awareness.

The rear porch/enclosure sustained the greatest fire damage. Personnel operating on the porches identified significant deficiencies in the fire-affected construction of the addition. They reported the porches were spongy and the rear stairway had become compromised, prompting a radio transmission advising all personnel to use caution when operating in the rear of the structure, particularly around the stairway. The R2FF also notified personnel operating on the roof that the Charlie/Bravo-side roof was in poor condition and instructed them to avoid that section of the roof.

Conduct a 360 size-up to inform decision making.

Upon arrival, the incident commander conducted a risk assessment that included a complete 360 size-up of the structure. He observed significant fire conditions at the rear of the building with the potential to extend to adjacent structures. Based on these conditions, he immediately requested a second alarm and upgraded the incident to a third alarm within minutes. The prompt request for additional resources ensured sufficient personnel to meet the incident's tactical demands, enabling rapid fire suppression and limiting fire extension to the structure and nearby exposures.

Assign available personnel for firefighter emergencies and on-going needs.

The initial dispatch designated a RIT. After the incident escalated to a second alarm, the incident commander assigned additional units to serve as a RIT to strengthen its capabilities. During fire suppression operations, the incident commander reassigned RIT units as needed to support tactical operations and immediately replaced them with newly assigned units, maintaining continuous RIT coverage throughout the incident.

Conduct structured Mayday operations.

The sound of breaking wood alerted personnel to the R2FF falling from the third-floor window area. A Mayday was immediately transmitted activating the RIT and initiating emergency medical care. Firefighters rapidly treated the injured firefighter, transferred him to a waiting EMS unit, and transported him to a medical facility.

CONSIDER THIS

Although there is no evidence that the following actions would have prevented this fatality, they are reminders of critical firefighter safety components to use before, during, and after incident operations.

Resources and protocols to address occupational exposure to potentially traumatic events

Approximately 24 minutes after the R2FF fell, the fire department requested its critical incident stress management (CISM) Team. The team responded immediately and arrived at the scene shortly thereafter. CISM personnel provided critical incident stress support to all first responders involved in the incident.

Public safety sector workers, including firefighters and EMS providers, are at a high risk of occupational exposure to traumatic events and stress [Bonumwezi et al. 2022]. This includes chronic exposure to highly stressful situations as well as acute exposure to catastrophic events such as those in this incident. There is variation among people regarding their threshold for developing symptoms, how adverse events are processed, the coping strategies they use, and their willingness to seek help when their capacity to cope is challenged. These have implications on the mental health symptoms they may experience following a single exposure or cumulative exposures over time. These can also affect their overall well-being, interpersonal relationships, and job performance [NVFC 2021]. Previous investigations have revealed that effective programs deployed by agencies should be multi-faceted, address organizational factors, and focus on building resilience, stress management, post-traumatic stress disorder awareness, and coping strategies [i.e. see NIOSH 2024]. NFPA 1550 [2024] provides recommendations for fire departments to prepare for and address occupational exposure to potentially traumatic events:

- Establish and maintain a relationship with an appropriately licensed behavioral health specialist that has knowledge and experience working with the fire department culture and traumatic exposure.
- Adopt and utilize a written policy outlining protocols to address exposure, including for the critical injury of a member or a line-of-duty-death.
- Ensure members are aware of and have access to a clear outline of assistance and interventions available for affected members. This includes the 988 Suicide & Crisis Lifeline that offers 24/7 access to trained crisis counselors who can help people experiencing mental health-related distress.

POST-INCIDENT FIRE DEPARTMENT PREVENTION ACTIONS

After this incident, the fire department implemented changes to its incident response and fireground operations. These changes were based on the department's critique of the incident.

Board of Inquiry

The fire commissioner appointed a Board of Inquiry to conduct a comprehensive, independent, and objective review of the incident. The Board of Inquiry sought to identify lessons learned from the incident and improve firefighter safety by developing recommendations that help prevent future line-of-duty deaths. In addition to determining the circumstances surrounding the incident, the Board examined contributing factors and evaluated opportunities to strengthen firefighter safety and operational practices. The Board's final report will serve as an educational resource for the department and the fire service by promoting sound risk management, enhancing operational practices, reinforcing a culture of safety, and helping departments prevent similar tragedies.

MORE INFORMATION

Renovation and occupancy permits

Review information previously shared on this subject above.

The AHJ adopted the following codes:

- 2021 International Building Code (IBC)
- 2021 International Fire Code (IFC)

The AHJ requires all owners of private residential rental housing units ("owners"), including condominium units, in the city shall register no later than July 1 of each year with the Inspectional Services Department ("ISD") identifying the property by street address and the number of units that they own at each address. An owner of a rental unit, who does not reside within the subject dwelling, shall post and maintain or cause to be posted and maintained on such dwelling adjacent to the mailboxes for such dwelling or elsewhere in the interior of such dwelling in a location visible to the residents a notice constructed of durable material, not less than 20 sq inch in size, bearing his or her name, address and telephone number. If the owner is a realty trust or partnership, the name, address and telephone number of the managing trustee or partner shall be posted. If the owner is a corporation, the name, address and telephone number of the president of the corporation shall be posted. Where the owner employs a manager or agent who does not reside in such dwelling, such manager or agent's name, address and telephone number shall also be included in the notice. P.O. boxes do not satisfy the address requirement of this Section. All owners must register each rental unit annually with ISD, and must attest to and affirm that they are familiar with their obligations to comply with this Section; the commonwealth's Sanitary Code (105 CMR 410); the commonwealth's Building Code (780 CMR); the city's Zoning Code; federal, commonwealth and local fair housing regulations; and all other regulations applicable to residential dwellings, and that they intend to comply with said regulations, by signing a form provided by and approved by the Commissioner of ISD. An owner owning multiple units in the same building may submit one form representing all said units. Any owner residing outside of the commonwealth must designate a local based resident agent authorized to accept service on the owner's behalf.

All non-exempt rental units must be inspected at least once every five years. In order to develop the inspection plan for the first year, and subsequent years of the five-year inspections cycle, ISD shall utilize data that may include, but shall not be limited to, inspection records, court records, documented constituent complaints and any information related to the status of the property with the Problem Property Task Force or information compiled by said Task Force to prioritize a list of properties for inspection in each neighborhood. Owners may request that ISD conduct the inspection or said owner may engage an "authorized" non-ISD inspector meeting the qualifications enumerated in division (A) above. The procedures and fees for such inspections are set forth in divisions (E), (I), (J) and (K) below. Annual comprehensive apartment inspections conducted by the Housing Authority leased housing program or the Metropolitan Housing Partnership leased housing program, or by other federal, commonwealth or city inspection programs that are accepted by ISD as being substantially equivalent, may be used to satisfy the five-year inspection requirement. ISD shall perform periodic and random audit inspections of no less than 5% of the "authorized" inspections that are filed with ISD [9-1.3]. The AHJ's rental dwelling unit delivery standards require property owners to deliver each rental unit in a safe and sanitary condition. Absentee owners must provide both occupants and City officials with current contact information. Before a new tenant takes occupancy, the owner must ensure that the rental unit complies with all applicable requirements established in this section. Compliance with this section does not relieve a property owner of the obligation under Subsection 9-1.3, Re-Inspection of Rental Units, to request a rental unit inspection within 45 days of tenant turnover to verify that the unit meets the minimum requirements of the Commonwealth's Sanitary Code (105 CMR 410). Compliance with this section, Subsection 9-1.3, or both does not limit an occupant's right to request, at any time, that the Inspectional Services Department inspect the rental premises for violations of any applicable code pursuant to Section 9-1.4.

Investigator information

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Flaherty, Captain of Rescue 2 with the Fire Department of New York (FDNY), accompanied the investigation as the representative of the IAFF. A subject matter expert review was provided by Mike Whitsell, Deputy Chief of Fire Prevention, West Des Moines Fire Department, Iowa. Dan Madrzykowski from the Fire Safety Research Institute, part of the UL Research Institutes, provided an expert review. The NFPA Emergency Response & Responder Safety Division provided a technical review.

RESOURCES

International Code Council (ICC)

International Code Council (ICC) The International Code Council is the leading global source of model codes and standards and building safety solutions that include product evaluation, accreditation, technology, training, and certification. The Code Council's codes, standards, and solutions are used to ensure safe, affordable, and sustainable communities and buildings worldwide. Access to codes and standards can be found at https://www.iccsafe.org/products-and-services/codes-standards.

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DISCLAIMER

The National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation and Prevention Program examines deaths of firefighters in the line of duty so that fire departments, firefighters, fire service organizations, safety experts and researchers can learn from these incidents. The primary goal of these investigations is for NIOSH to develop prevention actions to prevent similar occurrences. NIOSH investigations are separate from the rulemaking, enforcement, and inspection activities of any other federal or state agencies. The NIOSH summary of these conditions and circumstances in its reports is not intended as a legal statement of facts. This summary, as well as the conclusions and prevention actions suggested by NIOSH, should not be used for the purpose of litigation or the adjudication of any claim. The information in this report is based upon dispatch records, audio recordings, witness statements, and other information that was made available to NIOSH. Information gathered from witnesses may be affected by recall bias. The facts, contributing factors, and prevention actions contained in this report are based on the totality of the information gathered during the investigation process. This report is not intended to place blame on those involved in the incident. This report includes information from appropriate subject matter and National Fire Protection Association experts. Any mention of any company or product does not constitute endorsement by NIOSH, Centers for Disease Control and Prevention (CDC). In addition, citations to websites external to NIOSH do not constitute NIOSH endorsement of the sponsoring organizations or their programs or products. Furthermore, NIOSH is not responsible for the content of these websites. All web addresses referenced in this document were accessible as of the publication date.

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During report preparation, the author used the CDC PARTs, an SI tool developed by CDC based on ChatGPT (OpenAI, San Francisco, CA; *5.5; Thinking Level*), to check the report's adherence to the *Domains of Excellence Framework for High-Quality Public Health Science*. The author reviewed all output and is responsible for the accuracy, integrity, interpretation, and final content of the report.