



## National Fire Fighter Near-Miss Reporting System

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**Report Number:** 05-0000533  
**Report Date:** 09/19/2005 0830

### **Synopsis**

Firefighter injured during structure collapse.

### **Demographics**

**Department type:** Paid Municipal  
**Job or rank:** Driver / Engineer  
**Department shift:** 24 hours on - 48 hours off  
**Age:** 25 - 33  
**Years of fire service experience:** 11 - 13  
**Region:** FEMA Region IV  
**Service Area:** Urban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.  
**Event date and time:** 12/01/2003 0000  
**Hours into the shift:** 17 - 20  
**Event participation:** Involved in the event  
**Weather at time of event:**  
**Do you think this will happen again?** Yes  
**What were the contributing factors?**

- Other
- Decision Making
- Staffing

### **What do you believe is the loss potential?**

- Life threatening injury
- Lost time injury

### **Event Description**

Fire units were dispatched by 911 to a reported commercial structure fire. Upon arrival, I established command and reported a commercial repair shop heavily involved from the B, C, and D side with 2 exposures threatened. Since we run 2-man engine companies, one 1 1/2" attack line was pulled for a defensive attack and another attack line was pulled for exposure control. The second engine arrived 30 seconds after we arrived and the 2 men on that truck assisted me with exposure control and extinguishment of the structure involved with fire. A deputy chief arrived on scene and assumed command. After he assumed command, he did not call for any additional assistance. Our old department policy stated that a deputy chief appoint a safety officer on all incidents or if one was not appointed the deputy chief on scene would be the IC and ISO. After the fire was contained, the IC ordered a switch from a defensive attack to an offensive attack. This was ordered with his knowledge that the structure was unstable due to a structural collapse on the b and c sides of the building. Upon entry into the

building from the A side with a 3 man team, an exterior wall on the A side collapsed and a wall with a 4" steel I-beam struck me in the head pinning me beneath it. Had the IC considered the conditions of the building and never allowed an interior attack, the accident could have been avoided. As the result of the accident, I was out of work for 3 months with compressed vertebrae in my neck. More training on the IC's part and additional man power could have resulted in a better outcome.

### **Lessons Learned**

I learned that our department needed to write a better policy on having an ISO on scene. The incident commander should never be dual rolled as the IC and ISO. Had there been an ISO in place the incident would have been halted and would have remained in a defensive mode. No entry should be made in a structure that has already collapsed.

**Report Number:** 06-0000055

**Report Date:** 01/31/2006 1720

### **Synopsis**

Short staffed, operating alone, no radio, firefighter falls through floor at vacant structure.

### **Demographics**

**Department type:** Combination, Mostly paid

**Job or rank:** Fire Fighter

**Department shift:** Respond from home

**Age:** 16 - 24

**Years of fire service experience:** 0 - 3

**Region:** FEMA Region IX

**Service Area:** Suburban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 06/20/1981 23:20

**Hours into the shift:** 0 - 4

**Event participation:** Involved in the event

**Weather at time of event:**

**Do you think this will happen again?** Yes

**What were the contributing factors?**

- Situational Awareness
- Procedure
- Training Issue

- Equipment

### **What do you believe is the loss potential?**

- Life threatening injury
- Lost time injury

### **Event Description**

Arriving on a truck company as the driver/operator, with only staffing of two firefighters, I was assigned to perform horizontal ventilation on the uninvolved portion of the structure. The acting officer was assigned to assist the attack crew. The structure was a vacant and unfurnished dwelling. The floor plan was split from the entry way and an interior fire attack crew was operating on the west side of the split floor plan. I was ordered by the incident commander to enter the east side of the floor plan and perform ventilation of the interior windows. I had no radio and was alone on this assignment. After entering the east side of the structure with full PPE and positive pressure SCBA, I walked about 20 feet and fell through the floor from a floor collapse. I was unable to call for assistance and was trapped in the collapse of the floorboards for approximately 10 minutes. Another team member came in to find me and assisted me out of the broken floor boards. We exited the structure together. There were heavy smoke conditions but no fire involvement on the east side of the structure.

### **Lessons Learned**

Staffing procedures must include provisions for a minimum of two-person teams with separate communications for all fire assignments. A formal accountability system was not implemented. A lack of portable radios was a contributing factor in being trapped for so long. Incident command should have assigned a larger work team for this task. Structural stability was not considered and a risk/benefit analysis was not conducted.

**Report Number:** 06-0000309

**Report Date:** 06/01/2006 15:21

### **Synopsis**

Short staffing, short sightedness nearly disastrous.

### **Demographics**

**Department type:** Paid Municipal

**Job or rank:** Lieutenant

**Department shift:** Other : 24on, 24off, 24on, 24off, 24on, 96off

**Age:** 43 - 51

**Years of fire service experience:** 27 - 30

**Region:** FEMA Region V

**Service Area:** Suburban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 02/25/1994 1456

**Hours into the shift:** 5 - 8

**Event participation:** Involved in the event

**Weather at time of event:**

**Do you think this will happen again?** Uncertain

**What were the contributing factors?**

- Decision Making
- Command
- Situational Awareness

### **What do you believe is the loss potential?**

- Life threatening injury
- Minor injury
- Lost time injury

### **Event Description**

(Store name deleted) Fire

February 25, 1994

Incident time: 14:56 hours. The weather was cold with snow, but it had little to do with the near miss. The building was a pole barn type structure. The on-duty shift of six personnel was dispatched for a furnace fire, possible explosion, in the warehouse area. An off-duty captain in the area reported a working fire and requested the normal recall of all off-duty personnel. Staffing is normally a large problem in our department and additional help was called. Three other departments assisted during the incident.

The first-in shift found the building hot and fully charged with smoke. A ventilation hole was cut early and an interior attack was made. As more help arrived, off-duty personnel also made interior attack. The fire was extremely hot and the interior crews were taking a beating. Six other firefighters and I were inside, operating two 1 3/4" handlines and one 2 1/2" handline near an overhead doorway leading from the front half of the warehouse into the rear half of the warehouse, close to the seat of the fire.

I became more uncomfortable with our situation as we were fighting a losing battle. I communicated my thoughts to my usual partner and he was just doing the same thing to the others inside, having arrived at the same conclusion. As we were relaying the plan to get out, which all of us agreed to, and were making sure we would leave no one behind, the evacuation air horns sounded at the same instant the roof came down upon us. Miraculously to us, none of us were seriously injured and we began to really scramble to exit together. The event happened very fast, and we were all about half shocked and half focused on our exit plan. Our initial exit route was blocked by the downed roof. We were unable to follow our hoselines out due to the debris. A couple of us saw a dim light

about 90 degrees from our intended exit. We followed the light through the debris until we realized it was a partially open overhead door to the outside. We all exited together safely, feeling very fortunate to be alive. Our lieutenant on the outside, who had collected our (accountability) tags, verified we were all accounted for.

We discovered later that this lieutenant was the one that sounded the evacuation signal and that the IC had not identified the impending collapse. The IC also did not believe that an emergency evacuation was necessary. This was a factor in the late signal to evacuate, rather than an earlier warning. The lieutenant could not afford to debate any longer and sounded the signal as the roof came down. We also discovered later that the only reason we were not injured more than bumps and bruises was that the roof in our area fell upon a parked forklift to our left side, and vertically stacked carpet rolls to our right. This created a small umbrella area under which we were spared the bulk of the roof load.

### **Lessons Learned**

Accountability is a huge issue. It must be performed and not be allowed to become a forgotten task. Communication between crews is imperative, both inside and outside.

Crew Resource Management may have helped the lieutenant and IC to communicate better and make the correct decision sooner rather than later.

Ongoing situational awareness should be performed by all on scene, and observations communicated. In this situation, the interior crews were nearly as adept at reading the situation in the hazard area as those outside.

Expanding the Incident Command System is a problem in poorly staffed departments. There are simply too many jobs to do initially. The ICS expands later as staffing approaches recommended levels, but staffing shortages early lead to an overburdened ICS. This staffing shortage produces mistakes and a reduction in safety.

The building responded just as we have been trained. After being subjected to heavy fire, this steel pole type building with wood trusses failed. It should have been anticipated and prepared for. The crews inside should not be the ones who decide when it is time to exit.

**Report Number:** 07-0000889

**Report Date:** 04/28/2007 1154

### **Synopsis**

FF's caught in collapse of boathouse.

### **Demographics**

**Department type:** Volunteer

**Job or rank:** Deputy Chief

**Department shift:** Respond from home

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**Age:** 25 - 33

**Years of fire service experience:** 7 - 10

**Region:** FEMA Region IV

**Service Area:** Rural

**Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 06/18/2006 1400

**Hours into the shift:**

**Event participation:** Involved in the event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?** Yes

**What were the contributing factors?**

- Decision Making
- Situational Awareness

**What do you believe is the loss potential?**

- Lost time injury
- Life threatening injury

**Event Description**

On [date and time deleted] the [dept. deleted] Fire Department and [dept. deleted] Fire Department were dispatched to a reported boat house on fire. Dept. A was dispatched as first due with Dept. B being second-in automatic aid. Dept. A responded its fire boat [marine unit deleted] with 5 personnel. The personnel included: fire chief, deputy fire chief, and 3 firefighters.

This reported fire was received by our dispatch center from a citizen as a third party call. The caller was not at the location of the fire; we were dispatched to the address of the caller and were notified that the fire was “down from this address”. During our response we were given an update that we had a boat house with an apartment type room above it. The structure was built in and over the water. It was reported that the structure was well involved, the boats had been removed from the structure and all visible gasoline containers had been removed.

On arrival of [marine unit deleted] we found a two-story boathouse approximately 20’ x 20’, wood frame construction, moderate amount of yellowish-brown smoke, and a small amount of fire showing from a window on the “A-side” of the structure. Upon arrival a firefighter from Dept. B was applying water to the exterior of the structure with a garden hose. This firefighter confirmed the reports we had received while responding and he stated that the fire had only been burning on the “A-side” and he was keeping the visible fire knocked down with the garden house on the exterior of the structure.

[Marine unit deleted] began applying water to the “A-side” exterior with the mounted deluge gun. The smoke appeared to be coming from the second floor apartment and this is the area where the small amount of visible fire could be seen. One firefighter and

the deputy chief stretched a 1 1/2" handline to the stairs on the "C-side" of the structure that led to the 2nd level. After donning their face pieces the FF and DC advanced the nozzle up the stairs. The DC instructed the FF that they were going to advance the nozzle into the structure but to do so slowly sounding the floor as they advanced. The DC opened the door and propped it open. The hose team encountered a medium heat condition, medium smoke condition being able to see about 3 feet in front of them, and no visible fire from the "C-side" doorway. The FF was on the nozzle with the DC backing him up. The hose team advanced toward the "A-side" and extinguished a small amount of fire on the interior of the "A-side". Upon extinguishing the visible fire the room began to clear and gave visibility of approximately 8 feet. The DC called command and requested a pike pole and ventilation fan, command acknowledged the request. The hose team then backed up to the center of the room where the DC noticed a window that could be removed to assist in ventilation. The DC called command to request permission to take out the window wanting to make sure nobody was below the window. The DC called command and at the same time heard what sounded to be a piece of sheetrock fall from the ceiling. When the DC and FF heard this they looked toward the "A-side" and saw fire in the attic where the sheetrock had fallen, this created about a 2' x 2' hole. Upon noticing this, the DC made the decision that they would pull out and reassess the situation. As the DC and FF made their way out they heard a crack, the DC yelled to the FF to get out. They then heard a louder crack and then the ceiling and roof joists collapsed onto them. When this occurred they were crawling toward the "C-side" exit with the FF slightly in front of the DC. When the collapse occurred fire blew out of every window and door of the room.

The FF was crawling on his hands and knees and remembers feeling falling debris hitting him in the head, on his SCBA tank, and legs. The DC was crawling on his hands and knees and was pinned to the floor by the debris and only able to move his head and arms. The DC assisted the FF with getting out to the best of his ability. Once the FF was freed he focused along with an exterior FF on getting the DC out. The DC and FF were caught in the collapse approximately two feet from the doorway. The DC attempted to free himself and could not; he then told the FF that he was trapped. The FF's were able to free the DC within 10 – 15 seconds. The FF and DC were able to walk down the stairway under their own power. The FF and DC sustained no injuries other than being shaken-up.

All of these events occurred within 5 minutes of our arrival. From the dispatch time to the arrival time was 19 minutes. As stated earlier this fire was detected by a neighbor. At minimum this fire had been burning 24 minutes when the collapse occurred. We feel the main contributing factor was not recognizing the amount of time the fire had been burning and secondly not immediately recognizing that the fire could be in the attic space due to the volume and color of the smoke and the lack of visible fire.

### **Lessons Learned**

#### Recommendations:

- Be aware of response time, especially in a rural settings.
- While mistakes were made, our training kicked in, helped to recognize a situation, and protected the firefighters who were in the collapse, training is essential.

- Have a RIT, back-up line, EMS on stand-by
- Give an updated address to dispatch ASAP to ensure responding companies are coming to a proper location.

**Report Number:** 07-0000953

**Report Date:** 06/12/2007 1704

### **Synopsis**

Heart problem discovered after FF is trapped in structure fire.

### **Demographics**

**Department type:** Combination, Mostly paid

**Job or rank:** Fire Fighter

**Department shift:** 24 hours on - 48 hours off

**Age:** 43 - 51

**Years of fire service experience:** 17 - 20

**Region:** FEMA Region I

**Service Area:** Urban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 01/21/2004 0912

**Hours into the shift:** 0 - 4

**Event participation:** Involved in the event

**Weather at time of event:** Clear with Frozen Surfaces

**Do you think this will happen again?** Yes

**What were the contributing factors?**

**What do you believe is the loss potential?**

### **Event Description**

We were called for a structure fire with a child reported possibly trapped. On arrival initial attack was with 2 Firefighters. Upon entering house it flashed over. One Firefighter lost his helmet and was told to exit to get another. He was then assigned to open the roof, leaving me to enter alone. I entered alone because of the chance of a child being in this now totally involved wood framed house. I was able to attack with a 1 3/4" line and knock down what was in front of me searching all the time. Suddenly there was an explosion and a collapse. I ended up in the basement with a shattered mask, and a sense of numbness all over. Somehow I was able to get out from the basement on my own. I was immediately put in a paramedic engine awaiting a mutual aid ambulance. I had a heart rate over 250 and severe smoke inhalation along with neck and back pain. I was transported to a local hospital and hospitalized for 5 days. I had an extensive cardiac work-up and was found to have a condition usually caused by electrocution. I have had 4 heart procedures and 2 pacemakers. I will probably have more procedures done. My heart problem is all electrical with NO artery disease. I have since retired under the Heart & Lung Bill, which was a fight to get.

### **Lessons Learned**

*National Fire Fighter Near-Miss Reporting System*

I don't believe any lessons were learned from my department. They still run with a total of 7 men with a minimum of 5 with a response of 2 engines and a ladder truck. NO way should we have had only 1 attack team with no back up. There was NO accountability because no one knew I was missing. I had to have been in the structure for some time because my pass device battery was almost dead. Small towns NEED more men to fight fires, instead of always cutting the Fire Department budget. Fire Chiefs should be looking out for their men, not being a politician. TRAINING, TRAINING, TRAINING IS NEEDED!!!!!!

**Report Number:** 08-0000150

**Report Date:** 03/20/2008 1045

### **Synopsis**

Ceiling collapses on crew during structural fire.

### **Demographics**

**Department type:** Volunteer

**Job or rank:** Lieutenant

**Department shift:** Stand-by (in-station)

**Age:** 16 - 24

**Years of fire service experience:** 7 - 10

**Region:** FEMA Region III

**Service Area:** Urban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 03/18/2008 1300

**Hours into the shift:**

**Event participation:** Involved in the event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?**

**What were the contributing factors?**

- Command
- Other
- Procedure

**What do you believe is the loss potential?**

- Life threatening injury

### **Event Description**

As a rescue company, we responded to a structure fire reported to be a working fire. Our departmental policy dictates that a crew of four will divide into two teams. I was the B-Team supervisor and had the responsibility of covering the floor above the fire for search/rescue, ventilation, and fire extension.

Upon our arrival we found a 1 1/2 story split level detached home with about 40% involvement that included quadrant A of the upper level and quadrants A and B of the lower level. We were the third piece to arrive on the scene after a ladder and engine.

As we approached the Alpha side of the building I noticed a hose line going into the lower level that was charged. There was evidence (visible steam) from the outside that water was in fact being applied to the fire on the lower level. I saw members from the ladder company at the bottom of the stairs, thus steering my decision to go up.

My team member and I entered the building and proceeded to the upper floor in the area of the origin of the fire and began our search. We went straight at the top of the stairs through a kitchen and then left into the dining room. My team member and I had good face to face communication while proceeding through these areas.

Once I made it to the outside wall (B side) of the dining area I could hear the fire towards the front of the house. My partner and I began to turn around in an effort to move back through the path we came to search the Charlie and Delta quadrants, when a loud rumble occurred and I was dropped to the floor. The ceiling had collapsed due to heavy fire in the cockloft area that we were unaware of. The collapse brought a heavy fire load down when it occurred and there was fire all around. I yelled for my partner and he responded. The collapse had actually separated us, knocking him into a clear area. He was ok, advising he could make it out via the interior stairs. Once I got my bearing, I noticed a window and began to move the debris quickly as to make a rapid egress because the flames were intensifying.

As I began to make an unassisted egress from the upper floor window, the ladder truck driver ran up to the window with a ladder and placed just below the sill of the window. This ladder placement was a mere coincidence for I had not transmitted any information related to the collapse via the radio at this point. I made my way down the provided ladder notified the IC of the occurrence and recommended the evacuation of the building.

### **Lessons Learned**

I now realize the importance of not operating alone. The comfort of hearing my team member when I called is unexplainable. Additionally, there seems to always be a huge emphasis placed on interior firefighting crews to paint a picture from the interior for the Incident Commander. Though I agree, I believe it is equally as important for the Incident Commander to keep interior crews abreast of the picture he/she sees from the exterior.

Our response time from the actual 911 call was about 13 minutes. This was a lightweight construction home with heavy fire involvement. It more than reinforces the timelines we have all been taught in the past, 6-10 minutes and the structure is not sound. This is probably the most valuable lesson of all.

**Report Number:** 08-0000357

**Report Date:** 07/29/2008 1117

## **Synopsis**

Wall collapse traps 2 firefighters.

## **Demographics**

**Department type:** Combination, Mostly paid

**Job or rank:** Captain

**Department shift:** 24 hours on - 48 hours off

**Age:** 25 - 33

**Years of fire service experience:** 11 - 13

**Region:** FEMA Region IV

**Service Area:** Urban

## **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 05/06/2008 2144

**Hours into the shift:**

**Event participation:** Involved in the event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?**

**What were the contributing factors?**

- Command
- Accountability
- Human Error
- Decision Making
- Individual Action

## **What do you believe is the loss potential?**

- Minor injury

## **Event Description**

On May 6, 2008 two [name deleted] County Fire Rescue Firefighters were injured at the scene of a residential fire located at [location deleted]. Engine [1], Engine [2], Squad [3], Ladder [4], [Command 5], and [Command 6] were initially dispatched to a reported residential fire at 2144 hours.

Engine [1] arrived on the scene reporting heavy fire showing from all four sides.

Firefighter [a] initially pulled a pre-connect 1 ¾" hand line for fire control. Firefighter's [a] and [b] made an exterior attack on the fire through a window on the front of the residence. Firefighter [c] was the driver of Engine [1]; when he exited the Engine, he advised Firefighter [d] to make sure everyone knew not to enter the residence because the initial plan of action was to make an exterior attack only. Firefighter [c] donned his SCBA and made his way to the residence. Once he met up with the attack crew, he gained full control of the nozzle and proceeded to the front door making entry into the residence.

Command was established by Firefighter [d] as he performed double duties by operating the pump and Command at the same time. Firefighter [d] called Captain [e] ([Command

5]) by radio requesting hooks and man power upon the arrival of Ladder [4]. Captain [e] advised that Ladder [4] was behind him and their estimated time of arrival would be at least 6 to 7 minutes. Firefighter [d] then checked the water level on Engine [1] and it showed to have half of tank of water. Command noticed that three (3) personnel were on the front porch of the residence attacking the fire. As they began to knock the fire back, they proceeded into the residence.

Shortly after they began an interior attack, the Incident Commander noticed the roof at the rear of the residence had begun to collapse. The evacuation signal was sounded by an air horn on Engine [1]. One firefighter (Firefighter [b]) exited the structure and reported to the Incident Commander that the two other firefighters were trapped by a wall that had fallen. Command reported to the 911 center to have an ambulance en-route because a firefighter was down. Captain [e] ([Command 5]) arrived on the scene at the time Command was reporting a firefighter down. [Command 5] informed Engine [2] to disregard the supply line and get his crew inside the structure to find the missing firefighters. [Command 5] also advised Ladder [4] to lay dual supply lines and assemble a rescue crew upon their arrival. Firefighter [a] later exited the structure under his own ability and collapsed in the front yard.

Probationary Firefighter [f] packed up, proceeded into the structure, and pulled out firefighter [c]. Two [County] Firefighters and one [City] firefighter were transported to [the hospital] for treatment.

Content in [Squared Brackets] has been changed by the reviewer to protect identities.

### **Lessons Learned**

1. In order to operate in a safe manner at least four members shall be assembled before initiating interior fire fighting operations. Those four members shall be trained to a minimum of NPQ FFI.
2. Establishment of a Rapid Intervention Team (RIT) whenever there is more than one team operating or assigned in an Immediate Danger to Life and Health (IDLH) atmosphere.
3. Ensure all personnel operating on the scene of any incident follow Standard Operating Guidelines that cover Personnel Accountability.
4. Personnel shall be trained and understand mayday and emergency traffic guidelines.
5. Provide staffing that meets the minimum standard as described in the National Fire Protection Association (NFPA) 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.

Content in [Squared Brackets] was changed by the reviewer to protect identities.

**Report Number:** 08-0000377

**Report Date:** 08/13/2008 1629

### **Synopsis**

Delayed water plus explosion equal near disaster.

### **Demographics**

*National Fire Fighter Near-Miss Reporting System*

**Department type:** Paid Municipal

**Job or rank:** Battalion Chief / District Chief

**Department shift:** Other : 24 ON/24 OFF/24 ON/24 OFF/24 ON/96 OFF

**Age:** 34 - 42

**Years of fire service experience:** 17 - 20

**Region:** FEMA Region V

**Service Area:** Suburban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 07/14/2008 2210

**Hours into the shift:**

**Event participation:** Told of event, but neither involved nor witnessed event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?**

**What were the contributing factors?**

- Task Allocation
- Staffing
- Situational Awareness
- Decision Making
- Command

**What do you believe is the loss potential?**

- Lost time injury
- Property damage
- Minor injury
- Life threatening injury

### **Event Description**

All bracketed areas [ ] denote reviewer de-identification.

Engine [1] along with Engine [2], Ladder [1], Medic [1] and mutual aid from two other departments were dispatched at 22:10 for a structure fire. While responding, dispatch advised that police officers were on scene and reporting visible flames. There was also a possibility of an unaccounted for occupant on the second floor. Engine [1] was the first unit to arrive and had smoke visible from the roof line and a “glow” coming from what appeared to be the roof on side C. Engine [1] located a hydrant near where they had parked and the driver/operator hand stretched a supply line to the hydrant and established water supply. The Engine [1] officer met with the residents outside and they relayed that all occupants were out of the structure and they believed the fire was on the second floor. The Engine [1] officer and firefighter then stretched a dry 200’ 1.75” hand line into the building.

Upon entering the building through the main entrance side A, crews encountered no signs of fire or smoke in the division 1 apartment. The crew then preceded up the stairs

to division 2 apartment. They found no smoke or fire. From the division 2 kitchen window side C, the Engine [1] officer could see the glow from what appeared to be a self venting fire on division 3 side C. With no smoke or fire on the second floor, the Engine [1] crew proceeded back to the stairs with the intent of going to division 3. On the second floor landing there was a metal door which was locked and this blocked access to the division 3 apartment. Engine [1] crew used a halligan bar and axe to pry open the door and then proceeded up the stairs. As the crew approached the division 3 landing, light smoke was visible. This was the first smoke that was encountered on the interior of the structure. The crew donned their SCBA masks before proceeding up into the division 3 apartment.

At the top of the division 3 stairs there was a drop down attic access ladder. Assuming that this was an attic fire, the Engine [1] officer opened the hatch and shined his flashlight into the attic. The officer found no smoke or fire in the attic. Knowing that the fire was presenting itself somewhere along side C, the Engine [1] officer and firefighter proceeded through the apartment towards the C/B corner. At this time, the Engine [1] crew still had light smoke and no heat present. Just beyond the bathroom, crews found a small room in the B/C corner of the apartment. This room was an access door to the knee wall access space. The Engine [1] officer believed the fire was somewhere in the side C attic area and could hear crackling sounds in the walls. The Engine [1] officer then opened the knee wall access looking for signs of fire. Immediately upon opening the knee wall access door, heavy smoke billowed out of the knee wall space. The door was placed back over the opening to contain the smoke and fire until the hand line could be placed into position. The Engine [1] officer radioed command and advised they had located the fire. At this time, the Engine [1] firefighter advised that he was out of hose and could not reach the fire's location. The crew radioed for more hose to be brought inside to extend the attack line. The crew of Engine [2] arrived with the extra section of hose and proceeded to extend the hose line. It was at this time, the Engine [1] officer's low air bell began to alarm and he exited the structure to retrieve a full SCBA cylinder.

Soon after the Engine [1] officer exited to replenish his SCBA, the Engine [1] firefighter also exited the structure due to low air. Both the Engine [1] officer and firefighter returned to division 3 minutes later with full SCBA. With the hose line extension completed, the hose line was re-charged and crews proceeded to extend the hand line to the B/C corner. Conditions on division 3 started to rapidly change and smoke was becoming darker and thicker. For the first time, crews stated they felt some heat but it was still very tenable. The Engine [1] officer (knowing the location of the knee wall access) proceeded back to this area followed by the Engine [2] officer. The hand line was also stretched in behind them by the crew of Engine [2]. Upon entering the room on the B/C corner of division 3, an explosion occurred. This was before ventilation or fire attack could be initiated. There was a loud bang and the entire division 3 area turned bright orange from floor to ceiling. This was later described as a wave of heat and smoke and the event pushed all the firefighters to the floor and knocked off the Engine [2] officer's helmet. Command seeing the heavy smoke and fire suddenly erupt from division 3, immediately sounded the evacuation order both via radio and apparatus air horns. The Engine [2] nozzle firefighter could see a silhouette of the two firefighters in front of him (Engine [1] and Engine [2] officer) and he opened the nozzle above and

around them for several seconds. The glow subsided but there was still heavy smoke with almost zero visibility. The Engine [2] firefighter threw the nozzle forward to the firefighters in front of him so that they could use the hose line as an escape route. Simultaneously, the other firefighters were scrambling down the stairs and conducting their own personnel accountability report (PAR). After all firefighters were accounted for, they exited the structure.

### **Lessons Learned**

**STAFFING:** Adequate staffing is always a significant factor for fire departments especially during a serious emergency like this fire; on the night of the fire staffing was 10 personnel. Increase staffing is the only way we will be able to safely meet the national safety standards. This would greatly improve our overall capabilities as well as make our fire scene safer for our personnel. When we are at minimum staffing we must take a more realistic view of our emergency scene and determine if our staffing is sufficient to fight an interior structure fire. A risk benefit analysis should be made at every fire and based upon the analysis more resources should be requested and the mode of fire attack (offensive vs. defensive) should be made to ensure firefighter safety. The fire departments tradition of do more with less obviously has saved lives and property but continues to put our firefighters at great personal risk.

**CREW CONTINUITY:** Several firefighters ended up operating with personnel other than the crew they arrived with. In addition two personnel exited the structure alone to replenish their SCBA bottle and then re-entered alone. Crews need to operate as a crew throughout the incident, especially when operating in an IDLH atmosphere. Many of the firefighters discussed that crew integrity is routinely broken up due to the lack of sufficient manpower and firefighters try to do more with less. While the staffing issue is a reality, crew integrity and our safety is more important than any other fire ground task. Personnel should review polices as they pertain to personnel accountability and ensure we are following the passport accountability system. Crews who enter together must exit together. Company officers must maintain crew integrity throughout an incident. A separate, designated accountability officer needs to be established as early as possible for all working fires to track firefighter entry into the IDLH area. A separate, designated safety officer needs to be established as early as possible for all working fires to monitor crew's activities and fire conditions.

**EQUIPMENT:** The first in attack crew did not take their TIC with them. It is assumed that if they had the thermal imaging camera with them it may have assisted in finding the fire quicker. Company officers need to remember what a valuable tool a TIC is and utilize this important tool on all RIC responses. The initial attack line, a 200' 1.75" line did not reach the area of the fire on division 3. While pre-connected lines are quicker and easier to deploy the "one length fits all" philosophy does not match all buildings, especially in larger homes and structures. Crews should practice hose line selection at different occupancy types around their community. Extension of a hand line should occur at the pump or outside the IDLH atmosphere whenever possible. Although extending the hose line inside the structure puts the extra hose closer to the fire and requires less pulling of hose once charged it required the firefighters to operate without water in an IDLH atmosphere for an extended time (6 minutes) and could also create

more kinks and obstructions once charged as opposed to if it was flaked out across the yard.

**COMMAND & CONTROL:** The first arriving company officer was functioning as a member of the engine crew and therefore could not fill the incident commander's role. The second arriving officer although a competent company officer has less rank and time on the job and therefore normally wouldn't be the most appropriate person to take command. Again due to staffing shortages the Engine [2] officer was forced to assume command of the fire until help arrived. Fire departments should formally establish a procedure for command officers to respond to every structure fire in their community city. Consideration should be given to utilizing all command staff chiefs, off duty officers, mutual aid chiefs and any other means necessary to quickly provide a core group of command officers on every fire response. Command was transferred three times in the first fourteen (14) minutes of the call. While transfer of command is an important element of any smooth incident command process, so many transfers in such a short time period increase the possibility of misinformation and a lack of situational awareness for each new incident commander.

**PPE:**

The majority of the nine (9) firefighters operating inside the structure at the time of the smoke explosion were wearing their PPE properly. This is obviously a contributing factor as to why there were no serious injuries. Although several pieces of equipment were removed from service due to fire damage none of the firefighters received a burn injury. Two firefighters indicated that their helmets were knocked off during the explosion, neither firefighter had secured their helmet's chin strap under their SCBA mask and the helmet was therefore just balancing on their head. Had the subsequent fire ball been more intense or sustained longer these firefighters could have suffered burns to their head.

**Report Number:** 08-0000670

**Report Date:** 12/31/2008 2240

**Synopsis**

Quick reaction averts collision between 2 engines.

**Demographics**

**Department type:** Paid Municipal

**Job or rank:** Deputy Chief

**Department shift:** 24 hours on - 24 hours off

**Age:** 34 - 42

**Years of fire service experience:** 17 - 20

**Region:** FEMA Region V

**Service Area:** Urban

**Event Information**

**Event type:** Vehicle event: responding to, returning from, routine driving, etc.

**Event date and time:** 12/31/2008 1920

**Hours into the shift:** 9 - 12

**Event participation:** Involved in the event

**Weather at time of event:** Clear with Frozen Surfaces

**Do you think this will happen again?** Yes

**What were the contributing factors?**

- Decision Making
- Weather
- Situational Awareness
- Training Issue
- Individual Action

**What do you believe is the loss potential?**

- Environmental
- Minor injury
- Property damage

### **Event Description**

On 12/31/2008, our fire department responded to a reported natural gas leak at the meter of a house. We responded with 2 engines and 1 ambulance to this incident. The ambulance was the first crew on scene; they were already on the road, returning to the station following an EMS call.

Staffing for a normal day at our fire department is 10 personnel maximum with 8 minimum staff. Today, because of the holidays, we were at minimum staffing which included 2 people on the first engine, 2 people on the second engine, 1 on the aerial truck, and 3 on the first out ambulance. The third man on the ambulance crosses over to the first engine for fire runs, however for this run he was out on an EMS call, so we were staffed with only 2 personnel on the first engine. We also had one other firefighter out of the station on an assignment at the time of this alarm, leaving us with four people in quarters.

Weather conditions during this run: cold and cloudy, -4 degrees with a wind chill of -14 degrees and visibility was excellent at 9+ miles. Roads were snow and ice covered.

The 2 engines responded following the normal route for this particular complex. En route, the driver of the lead engine was unsure exactly which driveway was the proper one to use. The complex has 4 different ways of getting into it, depending on where in the complex it is. I (the officer in the lead engine) was looking in the map book getting the Motor Pump Operator (MPO) the exact location to turn into the complex. As I was letting him know which entrance it was, he took his foot off the accelerator and began braking, which quickly slowed the rig down. The engine began to slide due to the snow and ice on the road. The lead engine stopped just past the entrance and the MPO decided he could back up a little bit and make entry into the complex. The MPO had looked in the mirrors prior to backing up and saw the second engine. In his eyes, it did not appear to be as close as it actually was. As I was looking in my mirror (passenger

side), I noticed our second due engine was sliding towards us. I told my driver to "go" and he was able to move forward before the second engine made contact with us. The second MPO did a very good job at trying to brake and control his slide by turning his wheel to the right and going into a snow bank instead of into the front engine. Had the second MPO decided to go left and try to go around the lead engine, there was a greater chance for significant vehicle damage to both rigs.

This incident, for our department, was truly a near miss event. Had a collision occurred between the two engines, we would have had to rely on the backup and reserve engines until repairs or replacements could have been made. The two MPO's were following department SOP's as they relate to responses. As the road conditions were not ideal, they were traveling at or slightly below the speed limit; however, due to the unseen ice under the snow, they slid when braking, but were able to prevent collision.

### **Lessons Learned**

This near-miss really opened the eyes of everyone that was involved in the response. I believe the big things learned from this event were training needs (or re-training), situational awareness - being aware of the road conditions and anticipating what the conditions might be (such as the ice under the snow), following department SOP's, and following the guidance and direction by the officers riding in the apparatus. For apparatus that are following one another - leave enough room in between each other and leave even more room when conditions are not ideal. Anticipate what the apparatus in front of you is going to do or might do. If you know the turn-off is getting close, slow down and anticipate the turn. We do nobody any good if we do not get there safely. Take the extra time if needed to respond and arrive on scene safely.

Training is a huge issue; departments need to conduct driver training not only when it is nice out, but also when the weather is not optimal. Most people can drive a piece of apparatus with little to no problems on dry, clear days, but that changes when there is snow or rain on the ground or temperatures begin to fall. Another issue related to training is making sure everyone who is put in the position is comfortable with the operation of the apparatus and is able to control and use it as designed. We do not have permanent MPO's. Positions on a daily basis are primarily decided by seniority within the shift. In this type of set-up, you might not have a driver/MPO that is as experienced as others are and consequently needs to train on the apparatus more. Practice, practice and practice some more. Practice using equipment and apparatus until you do not have to think about it - it is second nature.

**Report Number:** 09-0000668

**Report Date:** 07/09/2009 2333

### **Synopsis**

Ceiling collapses on FF's.

### **Demographics**

**Department type:** Combination, Mostly volunteer

**Job or rank:** Lieutenant

**Department shift:** 24 hours on - 24 hours off

**Age:** 34 - 42

**Years of fire service experience:** 14 - 16

**Region:** FEMA Region III

**Service Area:** Suburban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 07/09/2009 1442

**Hours into the shift:** 5 - 8

**Event participation:** Told of event, but neither involved nor witnessed event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?** Yes

**What were the contributing factors?**

- Situational Awareness
- Staffing

**What do you believe is the loss potential?**

- Lost time injury

### **Event Description**

We were dispatched for a structure fire in a single-family dwelling. First arrival was a quint (driver only) and an ambulance with two firefighters and one exterior firefighter. Upon arrival, we found smoke showing from the front of structure. Bystanders reported one child that was unaccounted for. A crew of two made entry into structure and fire met the crew at the door. Flames were knocked down and the crew pushed forward to affect a search. The living room ceiling collapsed onto firefighters pushing one to the side and covering the second. Firefighters continued their task and reported to command. At this time, a rescue engine (driver only), an engine (driver only), and another engine staffed with 4 personnel arrived to continue overhaul procedures.

One of the firefighter's necks became stiff and the stiffness continued down his back. He was taken to the ER for evaluation. Upon evaluation, the hospital found no fractures or neurological injuries. The firefighter was released home. The firefighter was off for three days and was on light duty for one week.

### **Lessons Learned**

Minimum staffing of two is not enough. Properly staffing units could have prevented the events that happened.

**Report Number:** 09-0000967

**Report Date:** 10/31/2009 1549

### **Synopsis**

Basement fire found by third due engine during 360.

*National Fire Fighter Near-Miss Reporting System*

## **Demographics**

**Department type:** Paid Municipal

**Job or rank:** Fire Fighter

**Department shift:** 24 hours on - 48 hours off

**Age:** 34 - 42

**Years of fire service experience:** 17 - 20

**Region:** FEMA Region IV

**Service Area:** Suburban

## **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 06/01/2007 1120

**Hours into the shift:**

**Event participation:** Involved in the event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?**

**What were the contributing factors?**

- Human Error
- Decision Making
- Situational Awareness
- Individual Action

**What do you believe is the loss potential?**

- Lost time injury
- Other
- Life threatening injury

## **Event Description**

Units were dispatched to a structure fire. The response was three engines, one ladder, one squad, two ambulances, and command staff. The first arriving engine dropped a supply line and drove down a long, winding driveway. The first arriving engine had three people on board and the ambulance was right behind them with two. The company officer ordered a charged hoseline into the front door for an attack. He did not do a 360 walk-around. Smoke and heat were noted on the first floor, along with a charred area with little fire. The fire was extinguished, but the smoke and heat continued. The second floor was searched. Meanwhile, the officer from the third arriving unit did a 360 and found that the house was on a basement and a fire was burning there. A TIC from the first arriving engine was used to aid in extinguishing the fire and check for extension.

## **Lessons Learned**

The first arriving engine did not do a scene size-up to include a 360 degree walk-around. The TIC was not used on the initial attack. Following the SOP would have eliminated the hazard to the firefighters on the initial attack crew. The first arriving officer had many

years of experience, but was complacent and overlooked the tools he had available to him.

**Report Number:** 09-0001146

**Report Date:** 12/26/2009 1503

### **Synopsis**

Missed 360 survey contributes to burn injury.

### **Demographics**

**Department type:** Paid Municipal

**Job or rank:** Battalion Chief / District Chief

**Department shift:**

**Age:**

**Years of fire service experience:**

**Region:** FEMA Region IX

**Service Area:** Suburban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 07/16/2009 1711

**Hours into the shift:** 9 - 12

**Event participation:** Told of event, but neither involved nor witnessed event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?** Yes

**What were the contributing factors?**

- Situational Awareness
- Decision Making
- Communication

**What do you believe is the loss potential?**

- Lost time injury
- Minor injury

### **Event Description**

While returning from a previous incident, the engine spotted light smoke in a residential area. At approximately the same time that they began to report the smoke, the county dispatch rang out a structure assignment to that area. As a result the engine arrived several minutes prior to the next due unit. The structure was a triplex with each unit being approximately 2,500 sq. ft. or 7,500 sq. ft in total. It was built into the side of a grade and entry from the front door placed you on the second floor, leaving you with one floor below and one floor above.

The captain gave a report on conditions that included smoke and fire coming from the roof and all occupants out of the building. The captain then made the decision to don

SCBAs, pull an attack line, and make entry through the front door. A 360 degree survey had not been completed, nor was any other unit on scene. Upon making entry, the captain reported encountering light smoke at the ceiling level with clear visibility into the structure. He then made the decision to advance the line down a hallway where the captain and fire fighter encountered heavy smoke down to the floor; a second alarm was requested.

At this point, the captain requested ventilation, but no other units were on scene and the department's only truck company has an extended response time into the involved area. The captain and fire fighter continued to advance until they encountered active fire. After a quick knock down, they employed the use of a thermal imager and spotted an additional heat source to their right, down another hallway. They advanced to that position and began fighting fire in the kitchen area.

The second due engine arrived a full 5 minutes and 11 seconds after the initial unit went on scene. The driver of the first arriving engine had already established his own water supply. The second unit was assigned to back up the first due engine. After making an initial knock down of the fire in the kitchen, the captain realized he had fire below him and that there was an additional level to the building. However, he was not aware of how to access the lower level. The captain and fire fighter then began to fight the fire from above it.

It was at this point that the captain and fire fighter suffered burns. It is believed that as the crew was fighting the fire windows on the lower level blew out, creating horizontal ventilation contributing to the rapid acceleration of the fire. The crew, being positioned above the fire, resulted in them being exposed to an excessive amount of heat. This resulted in the captain and fire fighter backing out of the building.

The crew was treated at the hospital. The captain returned to duty and completed his shift. The fire fighter did not return that day. Both the captain and fire fighter were wearing all personal protective equipment including hoods. The fire eventually grew to five alarms.

### **Lessons Learned**

In this case, the first arriving unit did not take the time to perform a 360 survey. This placed the crew in a position of making a blind attack. They did not have a clear understanding of the extent of the fire or the general configuration of the building. Had they known the extent of the fire and considered that all occupants were out of the building, they would have waited for an out team to be established and vertical ventilation efforts to be in progress before initiating the attack. This coupled with a lack of situational awareness regarding the extended response times of other units into their area resulted in the crew essentially fighting the fire alone.

To prevent this it is important that crews perform a 360 degree survey. They must be aware of the timing and actions of the other units within the response. This is imperative if we are to act as a team. Crews must be clearly versed on the OSHA two in, two out regulations. When encountering an IDLH environment, fire fighters are

required to have an out team in place prior to entry. There are only two exceptions: life saving measures, and incipient fires. In the case of this incident, based on the initial report, it was clear that this fire was beyond incipient, and no rescue was required.

It is important to realize the effect that vertical ventilation has on operations. In this case, a delay in vertical ventilation allowed uncontrolled ventilation to occur, leading to the crew being burned. It is also important to recognize the hazards associated with fighting the fire from above the seat.

**Report Number:** 10-0000163

**Report Date:** 01/22/2010 1027

### **Synopsis**

Roof collapses on FFs during attack.

### **Demographics**

**Department type:** Paid Municipal

**Job or rank:** Training Officer

**Department shift:** Other : 24 on 48 off 24 on 96 off

**Age:** 34 - 42

**Years of fire service experience:** 17 - 20

**Region:** FEMA Region X

**Service Area:** Suburban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 12/09/2009 1320

**Hours into the shift:**

**Event participation:** Told of event, but neither involved nor witnessed event

**Weather at time of event:** Clear with Frozen Surfaces

**Do you think this will happen again?**

**What were the contributing factors?**

- Situational Awareness
- Command
- Accountability
- Communication
- Decision Making

**What do you believe is the loss potential?**

- Property damage
- Lost time injury
- Minor injury
- Life threatening injury

### **Event Description**

*National Fire Fighter Near-Miss Reporting System*

Note: Brackets denote reviewer de-identification.

This fire occurred in an upscale waterfront home when the owner discarded a cigar in a waste bin on the deck. There was a significant response time due to first due companies being out of position as well as a delay in water application due to a water supply decision (reverse lay). The response was inter-jurisdictional with first-in companies being from a neighboring department. A remote command post staffed by the neighboring department led to command and control issues and confusion to unity of command. Feedback on conditions was not provided back to the IC. This led to a lack of accountability for crew actions and locations. One of the interior crews made the decision to position themselves in the center of the large "great" room to gain a better angle on the advancing fire in the overhead. No consideration was given to the amount of burn time affecting the structural stability of the roof.

About 13:37, an indiscernible message is transmitted by Rescue [1] crew doing offensive fire attack in the structure. A few seconds later, the first Engine [1] Tailboard member (attached to Rescue [1]) transmits to Engine [1] officer, "Ceiling collapsed. Rescue [1] and Tailboard of Engine [1] are okay!"

Rescue [1] had advanced into the middle of the great room area to get a better angle on attacking the fire located in the ceiling void space and to direct their stream at the now burning attic that went from the great room east wall over the den and office area to the garage. They had also obtained a long pike pole to help pull down sections of drywall for better access to the fire. They report that they could see outside through the fire-vented roof and thought this would be a safe area. As they were applying their stream, they noted that hose streams were directed into their area from outside on Sides "C" and "A" (garage). They describe hearing a crack as sheetrock, rafters, roofing material and insulation fell, knocking all three to the ground with some entanglement. It is not entirely clear whether the north dormer and associated rafters came down at the same time or if that occurred a minute or two later, but the dormer body landed inches away from the nozzle location. A member of the back up team (Engine [2]) aided the Rescue [1] members by pulling debris off of them as they scrambled out. The hose and nozzle were buried by the debris. The backup nozzle had been advanced through the master bedroom and outside to Side "C" (Ladder [1] officer had instructed the Engine [2] member on the hose line to direct his stream on the Side "C" soffits from outside at the time of the collapse). The three Rescue [1] members regrouped outside on Side "A".

(Excerpt from final PIA Report) Roof Collapse in the Great Room:

About 13:37, the roof trusses supporting one of two lighting dormers failed. The rafters, insulation, and remaining drywall fell along with the dormer and roofing material. The two crew members of Rescue [1] and one member of Engine [1] were operating in the room at the time and were struck by the falling debris to the point of being knocked to the ground and partially entangled. A member of Engine [2] helped to remove debris as the three fire fighters scrambled out of the building.

The three fire fighters had been directing their 1 3/4" fire stream to the ceiling area, knocking down drywall to expose the fire. A long pike pole was obtained to help clear

some of the drywall. They repositioned to get better aim at the attic space in the direction of the garage that was now burning. At one point, they even noticed that they were under a large chandelier and moved to avoid injury should it fall. They consciously relocated under where the fire had self-vented thinking that this was a safe area as the material had burnt away.

With only a loud crack as a warning, the ceiling and roof structure gave way. The nozzle that the three were using was retrieved the next day only inches from the body of the dormer. Both Rescue [1] and Ladder [1] communicated the roof collapse over the radio. The use of an “Emergency Traffic” message would have been appropriate to alert personnel and instill a sense of importance to the event.

It is suspected that several factors contributed to the failure of the roof, number one being the fire exposure to the structural members. The fact that the dormers were for lighting only and that they were supported by a combination of the wall and the truss members made them added weight to the roof. The supporting trusses had not only been weakened by fire impingement showing significant damage at both the top and bottom (peak and wall), but the supporting wall had cantered out leaving the bottom end unsupported. With the application of water soaking the insulation and adding weight, and, most importantly, the elapsed burn time, the roof was destined to fail.

In our training, particularly in regard to vertical ventilation, one of the factors that must be considered is the burn time on the structural members. We talk about ten minutes being the benchmark or threshold for collapse potential. It is not likely that the fire was immediately into the void space between the ceiling and the roof. But consider that some of the first calls came from [location omitted]. That indicates that the fire was well established by the time the units were alerted. From time of alert to arrival, the response times for the first units were 10 – 11 minutes. Add 7 minutes for water to the nozzle, several minutes of water application and pulled ceilings, and repositioning. As stated above, the collapse occurred about 13:37. The Time of Call Receipt was 13:07.

We must be aware of compromised structural integrity. With a burn time of nearly thirty minutes, no crew should have been operating from an unprotected position inside the structure. There are too many layers to catch ourselves from being careless. From the I/C, to Safety Officer, to Division or Group Supervisor, to Team Leader, to a novice fire fighter, we have to recognize unsafe conditions and not find ourselves underneath weakened structures. We were very fortunate that only minor injuries were sustained.

### **Lessons Learned**

Note: Brackets denote reviewer de-identification.

In our training, particularly in regard to vertical ventilation, one of the factors that must be considered is the burn time on the structural members. We talk about ten minutes being the benchmark or threshold for collapse potential. It is not likely that the fire was immediately into the void space between the ceiling and the roof. But, consider that some of the first calls came from [location omitted]. That indicates that the fire was well established by the time the units were alerted. From time of alert to arrival, the response

times for the first units were 10 to 11 minutes. Add seven minutes for water to the nozzle, several minutes of water application, pulled ceilings, and repositioning. As stated above, the collapse occurred about 13:37. The time of call receipt was 13:07.

We must be aware of compromised structural integrity. With a burn time of nearly thirty minutes, no crew should have been operating from an unprotected position inside the structure. There are too many layers to catch ourselves from being careless. From the I/C, to Safety Officer, to Division or Group Supervisor, to Team Leader, to a novice fire fighter, we have to recognize unsafe conditions and not find ourselves underneath weakened structures. We were very fortunate that only minor injuries were sustained.

**Report Number:** 10-0000384

**Report Date:** 03/09/2010 1322

### **Synopsis**

Collapse indicators recognized by command.

### **Demographics**

**Department type:** Paid Municipal

**Job or rank:** Fire Fighter

**Department shift:** 24 hours on - 48 hours off

**Age:** 25 - 33

**Years of fire service experience:** 0 - 3

**Region:** FEMA Region V

**Service Area:** Suburban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 07/10/2001 1300

**Hours into the shift:**

**Event participation:** Involved in the event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?**

**What were the contributing factors?**

- Equipment
- Staffing
- Communication
- Training Issue
- Situational Awareness

**What do you believe is the loss potential?**

- Life threatening injury

### **Event Description**

*National Fire Fighter Near-Miss Reporting System*

Brackets [] denote reviewer de-identification.

We were dispatched to a possible structure fire in a single family home. There was smoke showing and law enforcement was on scene. We had a [name deleted] with three firefighters and an experienced operator. My crew set up a ground ladder to the roof and proceeded to our assignment, which was vertical ventilation of the roof. Initially firefighter [1] attempted to start our saw, but was unsuccessful. At this point firefighter [2] exited the roof to go back to the truck for a second saw. Meanwhile, firefighter [1] was able to get his saw running, was positioned at the peak of the roof, and was rejoined by firefighter [2]. Firefighter [2's] attention was caught by the assistant chief on scene who was waving his arms and motioning to get off the roof immediately. The firefighters exited the roof after being there approximately 12 minutes. The fire was extinguished and there were no other significant events. The post fire briefing revealed that the assistant chief had noticed that firefighter [1]'s footprints were actually visible upon return to the roof as it was apparently spongy. There was limited communication from the interior regarding conditions, progress, or location of the fire. Communications from command to the roof was hindered by noise from the saw and no radio contact with firefighter [2].

### **Lessons Learned**

Check and exercise saws daily.

Training – there was a lack of experience by the firefighters on the roof and their inability to recognize roof conditions.

Interior crews were working hard but had no communications with exterior operations.

Lack of staffing prevented secondary means of egress from being placed. If our initial egress had been cut off, there was no other ladder for us to use.

Firefighters should all be equipped with radios in every assignment.

**Report Number:** 10-0000642

**Report Date:** 03/30/2010 1810

### **Synopsis**

Kinked hose stalls attack, injures firefighters.

### **Demographics**

**Department type:** Combination, Mostly paid

**Job or rank:** Fire Fighter

**Department shift:** 24 hours on - 48 hours off

**Age:** 16 - 24

**Years of fire service experience:** 0 - 3

**Region:** FEMA Region V

**Service Area:** Suburban

### **Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 07/14/2003 2330

**Hours into the shift:** 17 - 20

**Event participation:** Witnessed event but not directly involved in the event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?** Yes

**What were the contributing factors?**

- Staffing
- Situational Awareness

### **What do you believe is the loss potential?**

- Life threatening injury

### **Event Description**

Engine responded to a mutual aid for a reported working structure fire and was first on scene. Two story old farm house, masonry structure with active fire on the first floor. Crew was told occupants weren't accounted for. The two jump seat fire fighters pulled a 1 3/4 inch hand line. Engine captain takes accountability. Fire fighters advance to the D side of the structure. Crew positioned themselves on the porch to make entry. Fire fighter two noticed that fire fighter one's helmet caught fire and that the vinyl porch ceiling was melting down on them. They tried to open the handline to realize there was no water. The hose was bent in half 20 ft from the house. At this time, both fire fighters' gear had caught fire. They put themselves out and returned to report to the captain. Crew directed a deck gun through the front windows to get a knock on the fire. Both fire fighters sustained minor burns to the neck and ears.

### **Lessons Learned**

There was a shortage of staffing with one engine working on scene for more than 5 minutes without assistance.

There was a lack of awareness of the fire activity.

There was a lack of awareness of fire intensity.

There was a lack of a 360.

**Report Number:** 10-0000775

**Report Date:** 05/28/2010 2236

### **Synopsis**

Brake failure causes near-miss.

### **Demographics**

**Department type:** Paid Municipal

**Job or rank:** Training Officer

**Department shift:** 24 hours on - 24 hours off

**Age:** 34 - 42

**Years of fire service experience:** 17 - 20  
**Region:** FEMA Region X  
**Service Area:** Urban

**Event Information**

**Event type:** Vehicle event: responding to, returning from, routine driving, etc.

**Event date and time:** 05/20/2010 0000

**Hours into the shift:**

**Event participation:** Told of event, but neither involved nor witnessed event

**Weather at time of event:** Clear and Dry

**Do you think this will happen again?**

**What were the contributing factors?**

- Other
- Training Issue
- Human Error
- Equipment

**What do you believe is the loss potential?**

- Property damage
- Life threatening injury
- Minor injury
- Lost time injury

**Event Description**

Brackets [] denote reviewer de-identification.

On [date deleted], an [department deleted] truck company experienced a brake failure during non-emergency driving conditions. The apparatus was approaching a large, busy intersection and the brakes failed as the apparatus operator attempted to stop for the red signal light. The apparatus, unable to stop, proceeded through the intersection against the red light.

Fortunately, all cross traffic yielded to the emergency unit and no collision occurred. Immediately following the incident, the apparatus operator pulled to the side of the road and refused to drive any further. Fire Department mechanics responded to the scene and found the brake system to be in serious disrepair.

The apparatus was placed on a flat bed trailer and transported to the fleet maintenance shop for further evaluation. Inspection revealed that four of the six brake sets were not functioning and the two remaining brakes were extremely worn and inadequate to stop the apparatus in a reasonable distance. The failure happened on an older reserve unit with high miles and a gross weight of [weight deleted]. It was refurbished with a new engine, transmission, cab enclosure and other minor upgrades in [year deleted]. It had numerous work requests for air leaks and other issues but no related brake problems were noted. The apparatus was [deleted] miles beyond its scheduled periodic maintenance interval. Following this event, the department held a safety stand-down for all three shifts to inform and instruct its members on the event and to refresh on

apparatus inspection procedures. As a result of this refresher, another truck company was taken out of service with mechanical problems similar to the unit that experienced the failure.

Our department has been extremely lucky to have experienced this event without any negative long-term consequences. This event could have been far more serious resulting in damage, serious injury or even death of both FD members and civilians. It is extremely disappointing that our experience comes so soon after the tragic driving death in Boston, as the circumstances are very similar. This event was preventable and concerted efforts are being made to ensure it will never happen again. Please use our experience as the catalyst to ensure your crews are safe and equipment is being properly cared for and checked.

### **Lessons Learned**

Routine apparatus inspections are vitally important for crew and public safety.

Apparatus operators must be adequately trained and refreshed on inspections, specifically mechanical safety systems such as brakes.

Any deficiency in safety systems must be immediately addressed when identified.

“Drift” or “Lowered Expectations” cannot be permitted when transferring into reserve apparatus.

All reserve apparatus should undergo inspections and have maintenance schedules revisited.

Unaddressed maintenance requests that involve safety systems should constitute removal of the apparatus from service.

Apparatus operators and company officers should be reminded of their obligation and empowerment to halt ANY unsafe action or remove unsafe equipment from service.

Maintenance personnel and apparatus operators must understand the team approach to ensuring apparatus operability and crew safety.

Reductions in staffing in our maintenance division has resulted in a higher likelihood that maintenance issues may be missed.

Reduction in training division has resulted in fewer training sessions, and less apparatus operator specific training sessions has resulted in a higher likelihood that important knowledge/skills and abilities may be lost from this group.

Biannual apparatus operator/driver’s training academies should be re-instated and budgets adjusted to reflect their importance.

A more dependable process for reporting safety issues should be developed to ensure issues such as this cannot be overlooked again.

Events such as these must not be overlooked.

**Report Number:** 10-0000837

**Report Date:** 06/11/2010 1459

### **Synopsis**

Patient pulls gun on first responders.

### **Demographics**

**Department type:** Combination, Mostly paid

**Job or rank:** ALS Provider

**Department shift:** Other

**Age:** 25 - 33

**Years of fire service experience:** 11 - 13

**Region:** FEMA Region I

**Service Area:** Rural

### **Event Information**

**Event type:** Non-fire emergency event: auto extrication, technical rescue, emergency medical call, service calls, etc

**Event date and time:** 06/11/2010 0615

**Hours into the shift:**

**Event participation:** Involved in the event

**Weather at time of event:** Cloudy and Dry

**Do you think this will happen again?**

**What were the contributing factors?**

- Staffing
- Situational Awareness

**What do you believe is the loss potential?**

- Life threatening injury

### **Event Description**

Brackets [] denote reviewer de-identification.

We were dispatched for a diabetic call. Engine [1]'s crew arrived on scene with one volunteer in a POV following them. The patient's wife stated that he was suffering from hypoglycemia and that she was having issues reasoning with him. EMS personnel walked into the office where this individual was sitting down and EMS explained who they were and why they were there. He understood and answered questions properly. EMS found the patient to be hypoglycemic but very coherent and alert. The patient asked EMS to leave the property and EMS stated that they were there to help and that we wanted to get his sugar to acceptable levels. The patient then walked over to the desk and grabbed a loaded pistol. The volunteer saw him go for the gun and behind the back of EMS personnel, grabbed the barrel and started to wrestle him to the ground. This man was very large and strong and was looking to kill EMS/fire personnel. Luckily, the two public safety officials were able to wrestle him down and secure the weapon.

### **Lessons Learned**

**Communication:**

There was poor communication by the bystanders in the dwelling about loaded weapons in the house and a failure of EMS to ask those important questions.

**Team Work:**

Personnel worked together to wrestle the guy from the individual's hand.

**Situational Awareness:**

The firefighter who drove the POV to the call noticed the gun and was watching to make sure he didn't go for it, however did not relay to all that it was there for fear of reminding the patient that it was there.

**Staffing:**

It's terrible to say, but this town does not have its own police force and it almost cost the lives of a minimum of three firefighters/EMTs. Instead, the EMT's waited 14 minutes for state police to respond which was realistically not their fault

**More man power:**

Understanding that this is a partially a volunteer town and that we should still have an engine on scene with the rescue. There needs to be more eyes on the situation and more manpower to help subdue an individual in a situation like this if God forbid it ever happens again.

Use the Police for any incident where an individual may have an altered mental status.

**Report Number:** 10-0000938

**Report Date:** 07/06/2010 1201

**Synopsis**

Trapped FF rescued during multi-alarm fire.

**Demographics**

**Department type:** Combination, Mostly volunteer

**Job or rank:** Lieutenant

**Department shift:** Respond from home

**Age:** 16 - 24

**Years of fire service experience:** 4 - 6

**Region:** FEMA Region V

**Service Area:** Rural

**Event Information**

**Event type:** Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

**Event date and time:** 12/22/1999 2200

**Hours into the shift:**

**Event participation:** Involved in the event

**Weather at time of event:** Cloudy and Sleet

**Do you think this will happen again?**

**What were the contributing factors?**

- Situational Awareness
- Communication
- Teamwork
- Fatigue
- Decision Making

**What do you believe is the loss potential?**

- Life threatening injury

*National Fire Fighter Near-Miss Reporting System*

- Minor injury

### **Event Description**

I was a new lieutenant on a combination department assisting a career department on a large multi-alarm building fire (ordinary construction) with a reported entrapment. I was on my second fire of the day. It was late at night and in very cold conditions. After I had gone through two SCBA bottles, we got a report that someone was trapped on the second floor apartment that had heavy smoke showing. I knew the probationary firefighter who was trapped. I set a 35 foot extension ladder to a window and entered to do a search. The firefighter had dropped our handline that we had for protection. We were only to search that apartment. Within two minutes of being inside, a flashover occurred with high heat conditions, smoke to the floor and flame rollover. The firefighter took off his mask as we got back to the window. I could not bust out the window pane due to a very hard wood cover that was covered in ice. Due to the high heat, we could not stand. We finally got the firefighter out and I slid down the ladder head first, sucking the mask to my face (I was out of air). The occupant was not in the apartment building. I lost my grip on the ladder and fell head first 20 feet onto a group of firefighters. We called for a mayday due to ice on the ladder.

### **Lessons Learned**

Always do a 360°. If I would have looked, I would have noticed that there was a window going to the roof of an adjacent building.

Set the ladder at the proper angle.

Training helped me to remain calm enough to get my brother out and notice the flashover conditions and call for mayday.

Communications were not an issue. Radios worked well.

Staffing changed to having a minimum of three people because of this incident.