



National Fire Fighter Near-Miss Reporting System:

Reports Related the Rules of Engagement

2012 International Fire/EMS Safety and Health Week

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RULES OF ENGAGEMENT FOR FIREFIGHTER SURVIVAL

Size up your tactical area of operation.

Report Number: 06-111

Synopsis: Mobile home fire with propane tank boiling.

Event Description: Our department was called out to a double wide mobile home fire. There were 3 of us that responded. I was Chief at the time. We found the structure involved in the front with flames coming out of the front windows. We charged a 1 3/4" line and began to knock down the fire. We had been in the defense attack mode about 15 minutes, when I decided to walk around to the rear while the two firefighters continued to battle the blaze in front.

At the rear of the structure about 6 ft. from the rear wall, was an 8 ft. propane tank. What we did not know was that the fire had burned through the rear wall and was rapidly heating up the propane tank to the point that the water that had fell into the valve containment bowl on top of the tank was boiling like a tea kettle. I had no idea why the pressure relief valve had not functioned, but I knew that we were very close to leaving this world. Needless to say we immediately began to forget about the structure and started to cool the tank. At that time I had attended two classes from the state fire academy that amounted to introduction to basic firefighting. However, my instructors had repeatedly stressed how important it was to do a walk around size-up. I had failed to do that and it almost cost our lives.

I am now a state Fire Academy certified Level 2 entry firefighter with 23yrs. experience. As Training Officer for our department, I tell our firefighters that unless they have the ability to see through structures, they had better be doing a walk around size-up. In my opinion, one of the most important aspects of any kind of emergency is situational awareness and in that incident I completely lost sight of that. Having looked at the results of the reports that were sent in by other departments' near-miss incidents, I was stunned to learn that the main contributing factor in the majority of those incidents was the same as our incident, situational awareness.

Lessons Learned: Never ever forget to do a walk around size-up and stress to every firefighter in your department that overall safety of the incident is everyone's responsibility. If someone forgets to do a size-up, bring it to the IC immediately and if that doesn't work, then do it yourself. After a tragedy happens it is too late to start pointing fingers at other firefighters for failing to properly secure the scene. After all, it may be the last time that you ever have a chance to do anything!

Report Number: 11-188

Synopsis: Lack of 360 causes problems.

Event Description: The engine, ladder, and BC were dispatched to a residential fire. When we arrived on scene there was fire showing at the C/D corner. We advanced a line into the fire room. Water had little effect on the fire. We advanced further into the room. The decking on the floor joist gave way. I was unable to remove myself from the floor, but luckily I was sitting on a floor joist. The firefighter advanced into the room and assisted in my extrication. The cause of this basement fire was arson. No 360 was

done, so the building was assumed to be normal wood construction. The fire was caused by copious amounts of gasoline being poured and lit in the basement.

This near miss would have been prevented if a 360 had been done and fire origin was determined. It would have been prevented with better situational awareness and realizing the amount of water we used should have had an effect on fire.

Lessons Learned: Do a 360 to determine building construction and fire origin. Have a better situational awareness of effects of hose streams on the fire.

Determine the occupant survival profile.

Report Number: 07-731

Synopsis: FFs fall through tile / truss roof at attic fire.

Event Description: We responded to a working residential house fire that was caused by children playing with fireworks that are illegal in this state. Fire quickly spread to the attic of this 3,000 square foot semi-custom home with a tile roof. Occupants were on vacation as this was the 4th of July weekend. The first engine company to arrive assumed command and reported a working fire. Upon arrival of my unit, a ladder company, we were instructed to provide vertical ventilation. Time in the incident was about 20 minutes. I completed the cut with a power saw and was preparing to exit the roof when I saw 2 members of my crew (the captain and other driver) fall through the roof sheathing and into the well involved attic. I attempted to rescue both, as my side of the roof was still intact. While en-route to their location, I too, fell into the well involved attic. I became trapped for approximately 7 seconds in heat and fire that was approximately 2000 degrees. For reasons unknown, I was able to jump out of the hole I had fallen into, and self extricated my self off of the roof. I received 1st and 2nd degree burns to my left hand and left leg. The only reason that I am able to share this story is because I was wearing full protective clothing with my SCBA face piece on. This would not have been a survivable incident if we had not been wearing full protective clothing.

Lessons Learned: #1 The wearing of full protective clothing with the SCBA face piece on saved our lives.
#2 Residential light weight truss construction with tile roofs is a killer for firefighters.
#3 Our department policy is not to vertically ventilate these roofs any longer.

Report Number: 09-672

Synopsis: Staffing shortage almost leads to disaster.

Event Description: A structure fire response was dispatched. Dispatch reported all occupants out of the structure. First units to arrive were a quint with driver only and an ambulance, which was returning from another call.

Units arrived with smoke showing from the front (side A). The ambulance crew began to gear up while the quint driver stretched a line to the front door. Upon doing this, the quint driver was told that a child was unaccounted for. This was relayed to the ambulance crew who decided to make entry. Upon

reaching the front door, they were met with fire. The front bay window then blew out. The crew knocked down the flames and began to enter as not the push the fire through the house. At this time, the crew observed that the living room was on fire and there was smoke throughout the structure. They began to push on to the hall to do a search for the child. As they made it to the middle of the living room, the ceiling collapsed on the crew. As it came down, it pushed one firefighter back and covered the other firefighter, knocking off his helmet and striking his back and neck. At this time an engine arrived, driver only, and began a reverse lay to a hydrant. A rescue engine arrived, driver only as well, and an engine from a neighboring city staffed it with four firefighters. The inside crew dug themselves out and checked for injuries. The inside crew had not taken a portable radio with them. Upon exiting the structure, the assisting engine crew entered and searched the residence with an all clear. The child was then accounted for outside. The situation was investigated by the fire marshal and overhaul was completed. The injured firefighter reported the incident to his supervisor who had him evaluated at the local ER. Luckily there were muscular injuries only, with 3 days off work and 1 week light duty.

Lessons Learned: First in engine should always lay a line. Staffing a station with two people is insane, but a normal practice in my jurisdiction. First due company was on an EMS call, leaving a driver only for the quint and a driver only responding from home for the engine. Second due was returning from an EMS call leaving no one for the rescue engine. Duty officer brought the rescue engine, driver only. Having the occupants accounted for may have deterred the crew from entering, thus preventing injury. If there had been serious injuries from the collapse, the interior crew could not have called for help due to not having a portable radio.

Do NOT risk your life for lives or property that cannot be saved.

Report Number: 06-434

Synopsis: Crews take unnecessary risks at vacant structure fire.

Event Description: A full box alarm (4 engines, 2 ladders, and 2 chiefs) was dispatched to a structure fire around 1200 hours. Upon arrival, the first arriving company found heavy fire and smoke coming from a 2-story wood frame house (with cockloft). Companies stretched attack lines into the 1st floor of the structure to initiate an aggressive interior attack. It was obvious the structure was vacant because the windows were boarded up and there was a notice from the municipality on the front door. What follows is amazing! Crews began to ladder the 2nd floor by placing a ground ladder to porch roof and then to reach the cockloft window they used a roof ladder on the porch roof to reach below window. Neither ladder was placed correctly, nor were they footed. The ladder on the porch roof was precariously close to the edge. Crews then advanced attack lines up the ladder and through the 2nd story windows to attack the fire on the 2nd floor. A chief without SCBA advanced an attack line up the unfooted, unsupported ladder that was placed near the eave of the porch roof and leaning against the wall of the structure. Without proper support or back-up on the ladder, the chief then opened the attack line directing it through the cockloft window. He climbed the rest of the way up the ladder, sat on the window sill of the cockloft and continued to flow water. A member of the RIT left his position, climbed the initial ladder and assisted the chief by holding the attack line slack, thereby lessening the weight the chief was trying to advance. The fire was declared defensive shortly afterward because the pitched roof began to collapse. All members including the chief retreated from the structure. The chief received no injuries. However, when members that had been involved in interior operations began leaving the

structure, several could be seen not wearing protective hoods or helmets. Several other members were in the HOT ZONE without any PPE.

Lessons Learned: As there was no life hazard reported it is incomprehensible for the risks that were taken. Therefore, it is imperative that a risk/benefit analysis be conducted prior to initiating an attack.

Retrain the chief officer that disregarded SOPs. His example will undermine the efforts of the department to maintain crew integrity. Consider risk/benefit analysis, and other training protocols -- because "If the chief can do it, we, the firefighters, can do it."

The overall IC should maintain control of his fire scene through communications. When he does not, freelancing will occur.

Probably the most glaring lesson is that chief officers are not immune to making errors in judgment.

Report Number: 07-1152

Synopsis: Yesterdays lesson still relevant today.

Event Description: We were the first engine on arrival at a structure fire with heavy smoke showing from a large commercial ordinary construction (brick and stick) structure in downtown [location withheld]. The commercial structure was vacant and boarded up. We forced entry into the store front doors of the building and advanced a 1 3/4 hand line into the structure. After advancing into the structure several feet with zero visibility another company on the scene pulled off the boards that sealed the front display windows of the vacant commercial occupancy. This provided the fire the oxygen it needed and fresh air to suddenly ignite the entire interior of the building with us inside. The rapid explosion of fire blew all three of us out of the structure and into the street. Only one of us received any injury (minor burns).

This near miss was clearly a result of a lack of situational awareness, proper size up or reading of the conditions thereby resulting in a poor decision. The decision to advance a single line into a heavily involved structure and zero visibility without ventilation was an act of automation and not judgment. We saw fire and we went after it. This event was prior to the concept of risk management, reading the smoke, and a good working incident command system that exists today in our department. In the past, if it was on fire we went in even if bulldozers were parked outside the structure for a planned demolishing of the building the next day.

Lessons Learned: Risk management. Vacant structure not worth risking the lives of firefighters.

Situational awareness. A proper size up of the scene and greater experience by the initial attack crew would have told us that we had no business going into the structure with the fire conditions visible, much less with a single attack line.

Better coordination. Our attack team should have been called out of the building prior to the removal of the boards sealing the store front windows, which resulted in us being blown out of the building by the force of the fire. Better command presence at the onset of the working incident.

Report Number: 08-048

Synopsis: FF falls through floor.

Event Description: Fire crews were dispatched to a "house fire" on [date deleted] @ 0747 hrs. A medic unit was the first apparatus on location, they reported smoke coming from a single-family dwelling. The house was a vacant 1½ story residential occupancy.

Engine [1] was the first fire suppression company to arrive on location. Engine [1] Captain [deleted] immediately called for a "working house fire". Battalion Chief [deleted] then arrived on-scene and assumed Command.

Engine [1] was the first company to enter the residence. The FAE of Engine [1] stayed by the engine to provide water to the attack team. The remaining crew entered the structure. This attack team included 1-fire captain and 2-firefighters. Medic's crew opened the hydrant. Fortunately this allowed the 3-persons from Engine [1] to enter the structure as a full attack team.

Engine [1]'s crew entered the structure with an attack line from an east side ground level front entrance. The captain reported heavy heat and smoke conditions as his attack team entered the structure.

Firefighter [deleted] was on the attack line nozzle while the captain and second firefighter were right behind him on the attack line. Engine [1]'s crew went approximately ½ way into the house on the main level when an area of the floor collapsed, causing the nozzle Firefighter [deleted] to fall through the floor up to his shoulders. He later related that he grabbed the floor to stop his fall into the fire. Captain [deleted] immediately reported by radio that "A FIRE FIGHTER HAS FALLEN THROUGH THE FLOOR". All members of Engine [1] reported later that flames from the basement engulfed the nozzle firefighter's legs, torso, and chest and back areas.

The captain and other firefighter immediately grabbed the nozzle firefighter, thus preventing him from falling further into the fire and pulled the firefighter out of the flames. The nozzle firefighter sustained no injuries!

This fire has been classified by investigators as accidental; electrical in origin.

Lessons Learned: The [name deleted] Fire Department has determined this to be a "NEAR MISS" Fire Fighter Injury/Fatality situation.

The nozzle firefighter related that he was unable to free himself from the fire in the floor. Engine [1]'s crew related that they would not have been able to rescue the firefighter from the fire if their attack team did not have a full complement of firefighters.

Our investigation has concluded that a full complement of four fighters assigned to Engine [1] was a determining factor in saving the nozzle Fire Fighter from severe injury or possibly a fire fatality situation.

Extend LIMITED risk to protect SAVABLE property.

Report Number: 06-047

Synopsis: Collapsing mobile home nearly strikes exposure crew.

Event Description: Our department responded to a trailer, single-wide mobile home fire. Upon arrival, trailer was heavily involved with close exposures to the immediate north and south. First reports were that the involved trailer was unoccupied. Moderate winds, 10-20 mph, from the south made the north trailer a higher exposure risk. A defensive posture was conveyed protecting the north trailer and initiated with a limited water supply. The streets of the mobile home park are narrow and the closet hydrant 800' away.

Crews were sent to confirm vacancies in exposed trailers. As water supplies were more firmly established, crews began the defensive attack on the north side of the original trailer. As this attack progressed, a sudden collapse of the entire trailer occurred. It came down at an angle toward the north where the defensive line crews were located. 4 personnel there were in immediate harm's way. No one was injured. We didn't expect collapse to take the course it did. We think the combination of the water hitting the small, burnt studs coupled with the moderate winds caused the collapse to go the way it did.

Lessons Learned: Being more aware of the winds and water pressure combination on the weakened structure. In 16+ years, I had not faced a similar collapse and trailer fires are frequent here. The department now knows better to be more alert for these circumstances at all fires, not just trailers.

Report Number: 08-609

Synopsis: Communication breakdown on fire ground.

Event Description: Two story house fire caused by a tree fire on the east side of the house. There was light to moderate smoke showing on the A, C, and D sides. First Engine Company on scene pulls into the circular driveway and extends a hand line inside to the second floor. They started search and rescue and investigated where the fire was going. The rescue (ambulance staffed by firefighters), assumed RIC duties. Second Engine Company arrives right behind the first and provided search and rescue on the first floor then joined the first engine company upstairs. Battalion chief arrived and took command from first Engine Company. Second Battalion chief arrived and assumed safety officer position. Third Engine Company arrived and is assigned to RIC with rescue crew. During this transition, the third engine is assigned to interior to help with heavy fire in the attic.

Safety officer enters the house and goes to second floor and third Engine Company follows behind. At this time, the first engine company attempted to search a rear room but the room flashes. The door is closed and the room written off. Simultaneously, the second engine company was searching an adjacent room and a partial roof collapse occurred hitting three firefighters and burying one of them. Second and third engine companies call for emergency traffic and changed from offensive to defensive strategy as the firefighters were pulled from the room (they suffered minor injury). At this time, the safety officer grabs the second engine company that just had a roof collapse on them, and sends them down the hall to keep fighting fire even though emergency traffic was sounded and everyone ordered out by command! The safety officer then heads the other direction down the hallway and tells the third engine

company to get in a room and spray water into the attic. This is the room where the fire started and it had not yet collapsed but other rooms farther away had. During all this, the second engine company decided to leave the house and head down stairs. Engine Company one is also headed for the stairs as the rest of the roof is coming down in small pieces. The third engine company, now with the safety officer yelling at them to put water on the fire, stops, and heads toward the stairs. As they do this, the roof comes down in the room they are in.

All firefighters make it out of the house with no lasting injuries. The safety officer was trying to dictate operational strategy that the captains were handling very well. Safety should have been looking for major concerns to firefighter safety. It was noted that the roof was a collapse hazard and time was short. We were able to see fire throughout the attic with inspection holes and the house had a heavy ceramic tile roof.

As the search/rescue was being completed, the partial collapse happened and emergency traffic was called to go defensive and exit the structure. The safety officer was not happy with this decision. In a "rage," he started ordering firefighters to keep fighting the fire and was telling them how to do it. Everyone was supposed to be leaving the house because there had already been a partial collapse of the roof. The safety officer caused a lot of confusion! Firefighters were trying to leave the house as ordered by their captains but had a battalion chief level safety officer telling them to keep fighting.

The first floor and approximately 95% of its contents saved along with a few valuables from the second floor on the B side. Fortunately, the captains made their crews leave the second floor before the total collapse of the roof.

Lessons Learned: The captains recognized the danger and just before it was deemed necessary to leave the house, a partial collapsed took place and emergency traffic was ordered with a change in strategy. An aggressive safety officer did not stay in his role and attempted to change the captain's tactics. This could have caused further injuries due to roof collapse. COMMUNICATION and working as a TEAM are a must regardless of the situation and rank of personnel present. Save savable lives and property and do not attempt to save that which is already lost.

The main objective was to get an all clear upstairs and find the fire to determine further strategy. One person that was not open to communication caused more confusion than necessary in worsening conditions. This could have severely injured or taken the life of fire personnel. Every role on the fire ground is necessary and it is your job to provide the functions of your role so we have good outcomes.

Extend VIGILANT and MEASURED risk to protect and rescue SAVABLE lives.

Report Number: 06-572

Synopsis: Fire stream delays - result is compromised safety.

Event Description: During "routine" single family frame structure fire (with known victims), the pumper took 4 attempts to engage causing a delay in water to the hose for approximately 5-6 minutes. During this delay the interior suffered a flashover (4 minutes after arrival) forcing all interior crew members back down stairs. (The attack line was manned by one FF and one officer. The remaining FF from the

engine was attached to the ladder crew for rescue due to four known victims.) One member of the ladder crew was unable to make it back to stairs and was forced to self rescue from second floor window to ground. He was operating in room next to fire room approximately 10'-15' from stairs. He had just vented the only window in the room and was starting to search when the flashover occurred. He went back to the window and waited for us to start knocking the fire down. He decided to bail when conditions weren't getting any better. He suffered 10% 2nd degree burns to his back, right arm, and face (hood was pulled from around his mask exposing a ring of skin). A radio report claiming a partial collapse of second floor ceiling with members still in area initiated a PAR and attempt to re-enter area to find missing member. A radio report from IC verified missing members self rescue. A second line was now in place, (first line had burnt through due to being hung up on railing upstairs), and entry was attempted again. This was delayed due to first line (burnt through) still flowing and causing a reduction in pressure. Radio communications were intermittent and the P.O. wasn't getting the message to shut down the first line. This was accomplished by sending a runner. Once proper pressure was established extinguishment was accomplished and the 4 victims were found (none survived).

Initial crews on scene- 1 Ladder company w/ one Officer and 3 FF's (3 entered structure while operator placed ground ladders to porch); 1 Engine company w/ one Officer and 3 FF's (3 entered with Officer and FF on line and remaining member w/ Ladder company to initiate rescue; and 1 ALS unit w 2 FF Medics (we are a fire based EMS system).

Conditions on arrival- Smoke showing from 2 windows (fire room and victims location) and no fire visible. Occupants on sidewalk claiming victims on second floor. Moderate to high heat encountered at top of stairs. Smoke down to approx. 8"-10" from floor.

Operator error ruled out and no problem could be found with pumper. Initial thoughts were the twist the chassis experienced turning corner at fire scene (recent storm drain work had left approx. 18" drop from pavement. Unable to replicate. Shop changed alternator, batteries and cables thinking a low voltage issue was responsible.

Problem experienced- Delay in water; flashover; burnt hose line; intermittent radio communications; low pressure due to open line.

It is my firm belief that the injured FF's training, experience, and level headedness prevented this from becoming a LODD.

Lessons Learned: The importance of self rescue training can't be overstated. The RIT companies had just arrived on scene and were unable to respond without some delay. Two-in-two-out wasn't an option here due to KNOWN multiple victims.

Be the eyes and ears of the IC when you are inside. The call of a partial collapse (it didn't register that we had just had a flash-over initially) and resulting PAR call reduced the discovery time of a missing member.

If there's any delay in getting water to the line let all companies know. This will let interior crews back out of the hazard area and will alert incoming companies that a shift in positioning may be warranted. Our SOP's have the 2nd arriving engine stop at the nearest hydrant and await further instructions. If they know coming in that the on scene engine is having difficulties they can respond directly to the scene and take over pump operations with a minimum of delay.

This was a "routine" fire on arrival but resulted in a cascade of problems that, I believe, were a direct result of the delay in water. If we had gotten water on the first attempt this situation would probably still have resulted in the civilian casualties but not the injuries suffered by a member of my station.

Report Number: 08-579

Synopsis: Electrical lines dictate tactical decisions.

Event Description: Our department was dispatched for a reported structure fire in a 3 story home converted to multiple apartments without a fire suppression system. I responded from home, as did the other 4 firefighters on [unit number deleted] which was the second arriving apparatus to the scene. Command sent us as per typical protocol for this unit to the rear of the fire building. We laid approx 400' of 5" supply line from a hydrant and used an alley to the rear of the structure (C side) for access. Having no riding officer on our unit and none yet assigned to the rear, as a previous officer, I assumed crew leader and eventually the C division. I was Command until the assistant chief arrived.

We had been informed on the fire ground channel of an occupant possibly entrapped to the rear of the structure. Between our position and the fire building, was a 3 story block apartment building approx 10' from the C side of the fire building. Due to snow/ice and a narrow sidewalk to the fire building, the crew hooked up the supply line while I investigated. I ordered a 200' 2.5" pre-connected line to be pulled due to the amount of fire extending towards us on all floors. There was an area of potential rescue if a victim made it to the rear of the building. We used the line to knock down visible fire and 3 of us advanced the line under a porch overhang where multiple electric secondary lines were beginning to arc. These lines fed the numerous meters that were mounted on the rear wall of the structure. We knocked down visible fire but could not make entry to the building due to the numerous arcing lines that were beginning to fall under the porch. It was quickly decided we could not hold the position and as we darkened the fire, it rapidly reappeared. We retreated to a safe haven alongside of the C exposure. This location removed us from the arcing lines.

Command was notified that we could not make entry and fire was beginning to show on the B exposure. We needed additional engine company resources along with utility control. Shortly after sending that report, we heard a loud crack and a rumble with smoke that was very thick at the time and banked down on us. Figuring a collapse had occurred, we again notified command. It was not until several minutes later we were able to determine the collapse was the enclosed wooden porches that were extended off of the 2nd and 3rd floors. We had been operating in this area not more than 10 minutes before the collapse. Given the size of the debris pile that was left and the complete pancake nature of the collapse, I highly doubt any of us could have survived. During the entire event we were in full PPE and on air with our SCBAs.

As additional engine companies arrived, I sent two more 2.5" lines into the C exposure building and used a 2nd and 3rd floor apartment as an elevated position for the attack lines. Multiple collapses occurred after the first one but all firefighters were kept out of the collapse zones.

Lessons Learned: Know your buildings. I also think we have to realize that we are not superman. Sometimes the fire is just bigger than us and sometimes victims, although discovered later the person

wasn't even home at the time of the fire, can't be saved. Our larger task (after FF safety) on this fire was to save three exposure buildings that were as close as 3' away from the fire building. Teamwork is essential! We advanced then retreated with a 2.5" line in 14 degree weather without any injury from slips or falls to any of our team members.

Report Number: 09-606

Synopsis: Hoseline burns as victim is rescued.

Event Description: While searching above the fire, we found a large female victim. It took three firefighters to drag out the victim. We had to leave the hoseline behind in order to drag her back to the door that we entered. The smoke became blinding black and hot. We worked our way toward the stairs that we had used to get to the second floor apartment. The door became wedged on the hose that was flat due to burning off in the stairwell. We got the door open and "drag-carried" the victim down the stairs. Once outside in the driveway, the second floor flashed over.

Lessons Learned: Need to do a 360 on the building for egress points.

The victim was closer to another door that could have been used.

After the hose line burned off, a backup line should have been stretched.

The incident commander should have announced the changing fire conditions, and that the fire had moved into the stairwell over the radio.

Go in together, stay together, come out together.

Report Number: 06-172

Synopsis: High window sills hamper firefighter's escape.

Event Description: Our department was requested to send an engine company to assist a neighboring town with a residential structure fire. Upon arrival our crew, 4 personnel, was asked to lay a supply line for the engine operating at this fire. We left 1 firefighter at the hydrant to hook up and charge the line. The other 2 members of the crew exited and asked the officer with command for an assignment. They were told to search the second floor, a converted attic, for occupants. They entered a second floor window in the rear of the structure and completed a search. They reported nothing found. The fire had originated in the first floor. It had been knocked down, but had extended to void spaces around the second floor room. Our crew had exited the structure after completing the search and secured an attack line to begin fire attack. They returned to the second floor and began working on the fire in the void spaces. Conditions from the exterior appeared to be worsening. As I came to the rear of the house, I could hear a low air alarm sounding and a firefighter from another department was moving quickly up a ladder. This is when I saw a firefighter being pulled from the window and roll out onto the roof. Three other firefighters were at the window attempting to communicate with someone inside. The R.I.T. team was activated to enter and search for the captain who had not yet exited. Prior to the R.I.T. team

entering, the captain who had been at the window was pulled to safety onto the roof. All other members were accounted for and operations were moved to an exterior attack. The personnel who were briefly trapped stated that the bottoms of windows in the second floor room were about 5 feet from the floor. This was confirmed during a post fire survey.

When conditions worsened on the second floor, the interior crew went to the window for escape. Fire had burned through the wall near the interior stairs. Their escape was complicated however by the high windows. The captain had assisted his firefighter out the window because his low air alarm was sounding. He then tried to climb out but was unable to do so. It took three other firefighters to grab a hold and drag him through the window to safety.

Lessons Learned: It is extremely important to monitor conditions and act on the side of caution. I had considered suggesting to the incident commander from the responsible department that we go to a defensive attack a few minutes earlier. However, I "trusted" my officer to know when it was time for him to exit. He realized it was time, but the construction features restricted his escape.

Officers and/or incident commanders on the exterior need to use good judgment and pull interior crews when you believe it is unsafe. Interior crews only see what is in front of them, not the whole picture. The command structure on this fire was a little shaky in the beginning due to the short staffing of the responsible department, which may have also contributed to this incident. Accountability is also so very important. We knew who we had there and what they were doing, but I am not sure some of the other departments could say the same.

Establish a R.I.T team and set them in motion at the first sign of trouble. We had them in place and they were ready to enter when the captain was pulled out. They would have been into the structure within 30 seconds or so of being deployed.

Report Number: 09-054

Synopsis: No SCBA check leads to smoke poisoning.

Event Description: We arrived on the scene of a fire at a business. We were advised that all occupants were out of the building. The business had a tempering furnace and was well involved. The chief was on the second due engine, IC was not established. Three firefighters, including myself, pulled a 1 ¾" 200 foot line and entered the building. I entered last as I was the third firefighter. I had not checked the seal on my mask, and we shared masks at the time. I exhaled and the exhalation valve was not working. The mask pushed away from my face, filling with smoke. I exited without telling my crew. While working out the issue the chief had arrived and called to evacuate the building. The second firefighter had exited just after me. Seeing me leave he thought we were leaving. We had to enter through another door to make contact with the nozzle man, and he exited. We later realized the hose size was very inadequate for the amount of fire. I was sick and vomited a short time after moving the lines to a defensive position, and had a headache and shortness of breath. I had to be seen by medical to receive oxygen.

Lessons Learned: We learned to slow down and see what was going on before jumping into action. There were no employees inside and the fire had extended greatly. There was no reason to go interior

and we did not have enough water in the 1 and 3/4 inch line. We soon after issued each firefighter his or own mask and had training on how to maintain it. Fit testing was done on every firefighter. We also talked about and trained on crew integrity.

Report Number: 10-277

Synopsis: Personnel fail to respond to PASS activation during fire.

Event Description: Fire department units responded to a reported residential fire [just after midnight]. Size up indicated heavy smoke showing with confirmation of the residents being out of the structure. The residents also reported that the fire appeared to be in the basement laundry area, around the dryer. Entry was made into the structure simultaneously with some ventilation underway. Further ventilation operations were ordered following reports from inside.

The basement stairway was located next to the main floor kitchen, with the seat of the fire located directly below the kitchen in the basement. The incident progressed as expected through the first twenty-minute PAR. Water supply was established, utilities were ordered for disconnect, RIT team was established, and ventilation was well underway.

About thirty minutes into the incident, a request was made from interior crews to have someone bring another 1 3/4" line in through the garage to access the basement. The RIT team was assigned to perform this task and then stopped, as the garage was too packed full of stuff to even make their way inside. That crew was then outside the structure, but had not reassembled for RIT assignment (IC's call).

The IC was making another 360 to check on a utility worker when dispatch notified IC of the forty-minute operational mark. During this PAR, command heard a PASS device activate and yelled in the direction of the activation, thinking that someone might have been standing still and it activate. The PPV fan was still operating so the noise level was elevated. Soon after hearing the PASS device, dispatch also reported the radio emergency alarm activation of a radio. IC was on Side "A" looking in the open front door of the structure and could see the faint blinking of the PASS strobe in the direction of the sounding PASS device.

Immediately, one of the personnel originally assigned to RIT was told face- to-face to get that person out of the building. At the time, IC was extremely unhappy, thinking that somebody had just let their PASS device activate and didn't bother to stop it. The RIT member followed the hose line in a short distance, approximately thirty feet, toward the strobe and dragged the downed firefighter out. Upon exiting the structure, he was helped to his feet, immediately assessed for injury, and then relocated to the ambulance for further evaluation. Subsequently, he was transported to the hospital, as a precaution, for further testing.

In interviewing the [downed firefighter], he stated that he was with his crew member in the basement on fire attack, along with another two-person crew. His low-air alarm had activated and he continued to work, thinking he had plenty of time. After a time, he told his partner that he was going to run outside and get another bottle. He then left his partner and headed out of the laundry area in the basement, following the hose line around the corner and up the stairs. Part way up the stairs, he completely ran out of air. In a condition of "high motivation," he started to hurry. Staying low and following the hose

line, he became disoriented and ended up reversing his direction. He then fell back down the stairs, knocking his face piece off.

The conditions were still untenable. He repositioned his face piece so his hood would give him some filtering action. He then activated his PASS device and activated the emergency button on his radio. He stated that he was unable to speak due to the heavy smoke conditions.

As a side note, his partner thought he heard a PASS device activate, but he stopped hearing it (the captain went back up the stairs to attempt exit) so he assumed that it was an accidental activation. As the captain cleared the top of the stairs, he had to keep his face close to the floor. It was at this point that the RIT person located him and pulled him to the exit.

Lessons Learned: One important lesson learned that must be addressed is that the SCBA Lost and Disoriented Firefighter Training conducted by this department worked in its most basic form. When the situation became less than ideal, the captain controlled his emotions, remained calm, activated his PASS device and his radio emergency button, took steps to get the best quality air he could find, and was actively involved in rescuing himself. Remembering those important training points is very commendable. However, although the outcome of this "near miss" incident was positive, this particular incident itself was completely preventable.

Several opportunities for improvement have been identified in response to this incident:

- 1) Strict adherence to the "Two-In Two-Out" rule should be enforced.
- 2) Strict adherence to the department's air-management protocol (when the low air alarm activates, you call for relief and then immediately exit with your assigned partner or crew) should be required. Additionally this should be reinforced with a department SOP/SOG regarding SCBA Operational Procedures and Air Management.
- 3) A "ZERO TOLERANCE" departmental policy regarding PASS device activations should be implemented and enforced. When a device activates, it gets immediate attention. Anything less than this creates a potential environment of dangerous complacency when hearing them activate.
- 4) Incident Command should diligently track at any moment where their personnel are and maintain a good communication link with anyone on the fire ground.
- 5) Once a RIT team is assigned, they should not be reassigned unless activated or relieved by a replacement, until the incident de-escalates.
- 6) Regular training should be conducted on the Lost and Disoriented Firefighter Procedures, along with SCBA Air Management training.
- 7) Training should be regularly given to reinforce the importance of the SOP/SOG's that are in place to keep personnel safe on the fire ground.

Maintain continuous awareness of your air supply, situation, location, and fire conditions.

Report Number: 06-282

Synopsis: Captain remains within structure after low air alarm is sounded.

Event Description: Units noticed smoke in the area while responding to an EMS call. They were then notified of a structure fire and responded. Upon arrival they encountered a ranch-style home with heavy smoke showing from the front door. Police officers on scene, fire dispatch, and a resident on-scene all told the Captain that a 9 year-old boy was trapped in the basement.

The crew advanced a 1.75" line to the basement and found heavy smoke conditions with relatively low heat. They searched the basement exhaustively, found a burning mattress but had not located the missing child. In the meantime, other crews were completing a search of the main level. The Captain's low-air alarm sounded but he decided to continue searching. At about the same time that a relief crew arrived downstairs, the Captain ran out of air. He unsealed his mask and took a total of two breaths at the floor level before he was able to exit the basement. It was later determined that the missing child was at a neighbor's house.

This same Captain and crew had experienced a very similar call less than two years earlier. They searched a basement fire extensively without locating a young victim who was later found deceased under a great deal of materials. There is no doubt that this previous experience affected this very competent Captain's decision-making.

Lessons Learned: 1. It is clear that previous experiences, particularly experiences that might be construed as failures, can have a significant effect on decision-making capability.
2. A good air-management program can establish better rules for air use. Specifically, by making a low-air alarm an immediate action item, you may prevent your folks from running out of air.

We have since developed a CISM policy and are more aware of the psychological stress that our firefighters face. I would recommend that all departments take a serious look at the psychology of firefighting and the value of CISM. In addition, we are developing an air management policy that will eliminate the practice of "work until your low-air alarm activates".

Remember that these situations can affect the seasoned, top-notch officer as easily as the new boot.

Report Number: 06-528

Synopsis: Lessons learned during live fire training.

Event Description: Our department was conducting a live burn exercise at our local fire training tower for some of our new recruits. The topics covered thermal balance, hose streams, and fire attack for single family dwellings.

We had 9 people attending the exercise with one Lieutenant acting as Instructor #1, five experienced firefighters, one of which was acting as Instructor #2, and three new recruits who were divided and placed on attack teams with experienced firefighters.

We met as a group prior to the fire attack portion of the drill and laid out what each person's responsibility was on the hose line, who was in command, who was safety, which radio tactical channel we were operating on, etc. It seemed that communication was good and that each person understood his or her role up to this point.

Instructor #1 and Instructor #2 enter the burn room to stoke the fire and make sure that everything inside was ready while the hose teams donned their SCBA masks and prepared for fire attack. This is when communication started to break down and things began to unravel. Instructor #1 leaves the burn room and tells the first attack team that everything is ready inside and to follow him in and extinguish the fire. The hose team is playing with the remote screen for our thermal imaging camera, checking out temperatures inside the burn room. Instructor #2 has the TIC inside, and he's checking out the temperature as well! Instructor #1 then re-enters the burn room and sits down near Instructor #2. They wait for a moment and realize that the hose team is not entering the building. Instructor #1 again leaves the room and orders the team inside for attack. He then enters the burn room for the third time and sits down next to Instructor #2. By this time, it is getting very warm inside, especially to Instructor #2! The instructors decide that it is too hot and they decide to leave the burn room. Before they can exit, the hose team enters and blocks the egress for the instructors. The hose team begins spraying large amounts of water on the fire, disrupting the thermal balance and dropping all of the heat down on top of everyone. Finally, everyone withdraws from the building and we begin to evaluate what went wrong. Other than some melted face shields and scorched gear, no one was hurt.

Lessons Learned: We learned that when conducting training, especially with live fire, you really need a better student to instructor ratio. This would include an inside and outside safety, inside and outside instructors and a command that functioned as command only, not instructor.

This would allow each instructor to focus on his task, whether it is the training taking place inside or outside, but not both.

Since this occurrence, we have also talked in great length about SOPS/SOGS and the difference between an order and a directive, and how these things effect communication on the fire ground.

Report Number: 09-578

Synopsis: Collapse of building injures FFs.

Event Description: Crews had been operating for 2 hours, at a structure fire, in a large manufacturing facility. We were operating in a defensive mode and had been since arrival. My crew was located about fifty feet away from the building on a hill above the building. We were operating a 2-1/2" attack line and having little effect on the fire. The roof and walls were intact in that area of the building. This task was assigned to us by the deputy chief of operations on behalf of command.

I was summoned to meet face-to-face with the battalion chief. The battalion chief was accompanied by an acting battalion chief and he directed me to move my crew and line closer to the building. He also directed me to open 2 doors, on the "B-side" of the building, so we could get water directly on the fire.

While attempting to force one of the doors, on the "B-side", the brick and cinder block wall collapsed narrowly missing one crew member who was in the doorway. Crew members that were standing farther back were hit by the bricks.

I reported to command that all personnel were okay. Command was completely unaware that any crew was operating in the collapse zone and had not given any order to open any doors. The battalion chief that gave the order was not in command and was not assigned as a sector officer. He had been conducting his own 360 of the building when he gave the order.

The post incident critique determined that there had been a collapse zone established by command, but was not marked in accordance with department operating guidelines. Several crews were operating in the collapse zone including mine, but we were unaware a collapse zone had been established since it had not been communicated via radio.

Lessons Learned: I feel the ultimate responsibility for this near miss. I was well aware the building was a total loss. There was no reason for us to be anywhere, near it. I did not question the order from my superior officer, which in hindsight clearly indicates I should have. I am responsible for my crew. My personal failures include decision making, situational awareness, risk management.

Command and departmental failures include communication, free-lancing by battalion chief, and officers, and lack of adherence to department operating guidelines by the ISO.

My advice to prevent a similar event and how I intend to conduct myself in the future is to apply risk management theory more vigorously to any fire ground. The common sense approach should work. That said, "It's sometimes difficult." No one wants to be considered a coward for refusing an order, but as I've learned, that cultural behavior can put us in situations we shouldn't be in.

Constantly monitor fire ground communications for critical radio reports.

Report Number: 05-283

Synopsis: No interoperability with radios.

Event Description: We were dispatched to a working residential structure fire. The primary response engine for our Fire District was out of position so mutual aid was requested from a neighboring Fire District. The neighboring District operates on 800 MHz radios and we operate on VHF radios. The neighboring District's chief & engine arrived first and their chief assumed command. The neighboring chief did have a VHF radio and was able to talk to our firefighters, but we had no way other than through him to talk to his firefighters. This resulted in poor communication between the 2 fire departments and also delayed tasks being completed because of not being able to talk directly with everyone on scene. The biggest delay was when our interior firefighters ask for the roof to be ventilated. Command missed the first radio message because he was busy talking on the 800 MHz radio with his crews. This resulted in a delay as well as the interior crew having to ask a 2nd time for the roof to be ventilated.

Lessons Learned: Joint command has to be set up together. More than one person has to monitor the radios to ensure no radio traffic is missed. Extra radios should be on scene to make sure everyone can talk with each other.

Report Number: 06-234

Synopsis: Progress reports are essential during fire fighting operations.

Event Description: Multiple companies operating at a residential fire that started in the walk-out basement. The 1st due Engine arrived and stretched a 2 1/2" through a garage that led directly into the basement area. Other companies stretched 2- 1 3/4" lines into the first floor. I arrived and was assigned by the IC to assist in the basement. After operating for the life of my 30 minute SCBA, I exited to change bottles and observed that conditions had not improved, but deteriorated. As I re-approached the scene, the IC (B/C) pulled everyone out, and an aerial was used to darken down the fire. While this was being set-up the Company Officers met, and the comment was made by one that the first floor had a hole in it that you could put a car in. This information was never relayed to the IC or other companies operating on-scene. After using the Aerial, some company officers wanted to re-enter even though additional portions of the interior structure had collapsed.

Lessons Learned: Progress reports must be relayed to the IC. These unsafe conditions must be known so that sound fire ground decisions can be made not only by the IC, but also by other FF on-scene. This disregard for safety is engrained into the mind set of many FF that we can get it "in 5 more minutes." The issue is being address through training.

You are required to report unsafe practices or conditions that can harm you. Stop, evaluate and decide.

Report Number: 08-446

Synopsis: Experience retreats FFs at flashover.

Event Description: Received report of structure fire at approximately 0800 hours, the chief, 1st engine company and safety officer arrived at approximately the same time. Fire was coming from the rear of a one story wood frame house. The incident commander established a command post, the safety officer was making a 360, and the engine crew was initiating an offensive attack through the unburned side of the structure. As the safety officer was making his assessment he noticed that the fire was rolling back into the gable on the rear of the structure. Further, he noticed the color and the "weight" of the smoke, which was dark grey and very heavy and curling back into the structure. He made his report to command and suggested that the members be withdrawn due to the possibility of a flashover. Simultaneously the members had advanced the attack line into the structure and had gone from a standing position to crawling on their knees and were experiencing extreme heat. The captain told the firefighters that it was not "right" in the structure and for them to withdraw. This coincided with the incident commander initiating a defensive fire. The engine crew left the structure. As the warning sounded to assume a defensive position, and as the crews were leaving, the structure flashed over. One firefighter received burns to the tips of his fingers and his face-piece was scorched, but there were no other injuries.

Lessons Learned: This shows how good communication between command and the safety officer can avert serious injuries at a fire.

That the captain's senses were correct and his knowledge of previous fires led him to the right conclusion to leave.

Report Number: 09-959

Synopsis: Flow testing damages rescue unit.

Event Description: Our truck company decided to test the flow capabilities of our newest aerial truck. While the ladder was elevated and flowing water at about 800 GPM, one of the new lieutenants thought it would be funny to trap the rescue company in their unit with the water stream. The elevated stream broke the grill of the apparatus, broke the windshield, and sent a FF to the hospital with minor injuries.

Lessons Learned: Horseplay should not be tolerated especially from officers who should know better.

You are required to abandon your position and retreat before deteriorating conditions can harm you.

Report Number: 09-522

Synopsis: Flashover indicators and building conditions warrant evacuation of FFs.

Event Description: My lieutenant and I made entry into a one-story home of a reported basement fire. We utilized a left hand search as a tactic to locate the basement. For an attack line, we pulled a charged, 200 foot, pre-connect. After making it to the bottom of the stairs, we heard the fire in the direction of the A/B corner which was the corner we had entered the building on the ground floor. There was an insufficient amount of hose to make a direct attack on the fire at this time. My lieutenant attempted to notify command to get us more hose, but was unable to transmit due to increased radio traffic. The fire in the basement was indicating an impending flashover, and we realized it was time to get out. We immediately began to retreat from the basement along with the back-up crew. After ascending the stairs, we headed towards the A/B corner of the ground floor to exit the building. I was following my lieutenant and we noticed the floor felt incredibly spongy. As I pushed off with my right leg, I fell through the floor up to my groin. I was able to remove my leg but was met with fire, pushing from the hole that my foot had just made. I sprayed water from our attack line for about 5 seconds to try to knock the fire down and give the back-up crew a few more seconds to get over the weakened floor and out of the house. Unfortunately, the water had no effect on the fire as it was well into the free-burning stage. The back-up crew was cut-off and had to look for a secondary egress point. After I exited the building, I immediately notified command that the floor was compromised. Command cleared all units from the interior and we began a defensive attack on the building. The back-up crew exited the building through a plate glass window on the A-side of the building, one of the members received a cut to the hand.

Lessons Learned: The reality that if there is no savable life or savable property in a structure, then it is not worth pushing the limits of safety to try to save the building. Also, radio traffic was determined to be an issue in getting more hose into the building. With so many units responding to a rural

environment for water supply, multiple operations channels were needed for interior crews to communicate with command. After the fire, what was initially identified as a one-story house with a basement, something was different. It was a ranch-rambler, with complete living quarters below disguised by the elevation of the home. If anyone had completed a 360, they could have relayed their findings to the interior crews. We would have known that there was a door located at the bottom of the stairs, and could have made a direct attack at the seat of the fire. 360's were completed by multiple officers, but interior crews were not informed of this information until after exiting the building. We stayed in that basement about five minutes longer than necessary to end up where we were. We were stubborn and thought, "Just a little more. Just a little longer." If we had we left when we really realized that the fire had the better of us, I would not be typing this report. As firefighters, we think that there is "always a way." Sometimes we need to realize that sometimes there isn't.

Report Number: 11-363

Synopsis: Water rescuer encounters aggressive victim.

Event Description: Right after shift change, I was dispatched with my crew to a dog that had fallen through the ice at a local lake. It was my turn to be the rescue swimmer, so I donned the ice suit while en route.

Once on scene, we found out it was not a dog, but the dog's owner who had followed his pet onto the ice. I then proceeded to make my way out to the victim. As I approached the victim I told him what to expect and how to respond, once I had him in my arms. The victim acknowledged and I assumed it was ok. As I grabbed the guy, he tried to pull himself up onto the ice and flee. This caused me to go under water and inhibit the rescue and jeopardize my safety. After several attempts, I was able to subdue the guy and bring him to shore.

Lessons Learned: Protect yourself. This victim was not trying to hurt me, he was just scared. Our safety comes first and it may come at a great price. Be safe.

Declare a Mayday as soon as you THINK you are in danger.

Report Number: 08-246

Synopsis: Problems during out of air emergency.

Event Description: On the afternoon of April 8, 2008, my crew and I were called to assist on a residential structure fire. We were first to arrive. I advised dispatch that we had fire showing from a one and a half story residence with one line off. The homeowner reported that everyone was out of the structure.

Two crews advanced a 1 ¾-inch hand line in the front door, while other firefighters advanced a 2 ½-inch hose line to the rear of the structure. At this point, we had heavy fire in an attached garage with second floor living space above the garage. Prior to our arrival the homeowner had removed his automobile and left the garage door open, which helped fuel the fire. This was a routine structure fire with zero visibility due to smoke conditions. With the aid of the Thermal Imaging Camera (TIC), we easily found an interior wall that butted up to the garage. Interior crews breached the wall and began fighting fire. Crews were

also attacking the fire from the exterior. At this point, we (interior) advanced our line to the second floor to cut off the fire, which more than likely was above us. We were met by heavy smoke and heat conditions. The line was advanced down a hallway. I remained at the stairwell, fed hose to the crew, and then moved forward to meet up with them.

Progress was being made on the fire when one of the firefighter's low-air alarm sounded. He advised he was exiting the structure. Soon after, with no low-air alarm sounding, I exhaled and was surprised when I went to inhale and my mask sucked in around my face. I advised the remaining firefighter that I was out of air and leaving the building. I remained calm following the hose line and checked my SCBA equipment making sure all valves were open. At this point, I had little option left but to remove my mask and breath in smoke. I lifted my thermal camera in an attempt to locate the exit and I had a blank screen; the battery had gone dead. After only seconds, I was becoming disoriented and confused. Staying with the hose line, I found a large loop, which had been formed with excess line. I became disoriented due to the inhalation of smoke. Luckily, I remained with the hose and soon ran into two firefighters. I advised the firefighters of my situation. They told me the stairwell was just ahead and, in the confusion, I started in the wrong direction. They noticed, immediately called a mayday, and assisted me to the stairwell to safety.

Lessons Learned: What have I learned from my experience? Knowing procedures and equipment does not always prepare you for every problem you encounter on the fire scene. When my air pack suddenly failed, I went into the survival mode. With no air in my lungs, I thought it would be wiser to move quickly towards the exit following a hose line. I did not call a mayday or advise command of my situation because to do that would have required air in my lungs, something I did not have.

When the TIC failed, I honestly for a brief second thought this was how my career was going to end. In writing this article, I hope to instill what many of the veteran firefighters had taught me: to know your surroundings; follow your hose line; and know your equipment. Secondly, I would like to stress the importance of standardization of equipment. When I was searching for the stairway, there were three other firefighters on the second floor. I was not capable of sharing air with any of them. Our county has 42 fire departments; each department has their own method of purchasing equipment.

Earlier this year we were approved for a grant to replace our SCBA equipment, and were in the process of researching and testing air packs to purchase for our department when this near miss occurred. Immediately after this incident, our department decided to expedite our search and to include area departments to attempt standardization. Other departments were contacted as to what type packs they used. An executive decision was made by our Chief and Officers to purchase like air packs and to attempt to explain to the remaining fire departments what we had learned. Because of this process, nearly all of the surrounding area departments will soon have the same air packs.

[identifying information removed] In the RIT class and at academy trainings, mayday training is taken very seriously and participants are instructed on when and how to make the mayday call. Even with prior knowledge in safety procedures, I immediately went into a survival mode when my SCBA malfunctioned. I should have advised the firefighter on the nozzle to exit with me; this would have been my safety line.

The text in brackets [] was added by the reviewer.

Report Number: 08-577

Synopsis: Lieutenant falls through floor.

Event Description: Crews were fighting a fire in a 4 unit row house/townhouse, wood-frame dwelling. Fire was visible from the C side (exterior). Crews reported fire in walls and ceilings on first floor and fire was moving up to the second floor. Initial crews were containing the fire, while an additional crew moved to the second floor for reconnaissance and search. When the reconnaissance crew reached the second floor, 2 members (a lieutenant and a firefighter) entered a bathroom that was located directly above the fire. Almost immediately upon entering the bathroom, a 6' to 7' section of the bathroom floor collapsed with the lieutenant falling through the floor. The lieutenant was able to catch himself on a floor joists and nearby debris. As the floor collapsed, the firefighter jumped into a tub and did not fall through the floor.

Immediately upon falling through the floor, the lieutenant called a "mayday" and provided a clear and concise report detailing his unit, his location, the situation, and his immediate needs. Operations acknowledged the mayday, quickly confirmed the situation, and deployed the RIT team to the location of the trapped lieutenant. Simultaneously, command called for an additional alarm to stage nearby. Upon hearing the mayday and receiving associated information, a firefighter operating in the exterior of the structure notified two additional firefighters that the lieutenant had been seen operating in the area of a second floor window. A ground ladder was raised to the window and several firefighters helped the lieutenant extricate himself from the collapsed floor.

Within a minute or two from the time of the mayday call the lieutenant had been extricated and self-evacuated from the structure. Immediately upon hearing that the trapped lieutenant had been located, extricated, and removed from the building, command removed all personnel from the structure and ordered a PAR. The PAR revealed that all members were accounted for and firefighting operations commenced. Soon after the incident, the fire was knocked down and placed "under control." Meanwhile, the lieutenant and firefighter involved in the collapse were examined by an ambulance crew at the scene and no injuries were observed.

Lessons Learned: In this case, a second alarm assignment was operating at the scene because of the large size (30'x100') and construction type of the structure. This assured an adequate number of firefighters on scene to address any problems. Proper staffing played a major role in the successful outcome for the mayday situation and for fire control.

Upon a post incident critique of the event, many factors were attributed to a positive outcome in what could have been a tragic situation. The factors which played a major role in this "successful outcome" are: proper use and staffing of ICS functions (Command, Operations, Safety, RIT), early recognition of significant risk potential (a second alarm was summoned very quickly), coordinated fire attack, ventilation and reconnaissance, and training.

The fire ground was very organized and calm prior to the mayday/collapse and remained so (as best as can be expected) while mayday operations were being conducted. Great credit should be given to the lieutenant who immediately recognized his predicament and instantly called a mayday. He provided exactly the type of information to Command/Operations which contributed to a quick rescue.

Report Number: 10-008

Synopsis: Disoriented officer calls "Mayday."

Event Description: This incident involved a large, two-story home that had been made into apartments. This resulted in the interior being "cut up." I was the engine company officer with a crew of three operating on the second floor at the rear of the structure (C/D corner). Our crew had a good knock on the fire when command reported fire on the second floor, "A" side of the building. I left the hose line and my crew in an attempt to find access to the area command had reported. During my attempt to locate the front of the building, with my left hand on the wall and progressing, my Vibralert activated. At this time I left the wall, turned (I thought) back towards the door and proceeded to return to my crew and exit. With zero visibility, I obviously didn't return the way I had entered and found myself in an unfamiliar area. I attempted once again to retrace my path only again to end up disoriented. At this time, I transmitted a "Mayday," advised command of my situation, my approximate location, and I was still attempting "self rescue." I was finally able to locate a window and exit as I was running out of air.

Lessons Learned: As much as I preach crew integrity to my shift, I've learned that it applies to me as well.

Never leave the wall or hose line that serves as your reference point.

The Incident Commander's Rules of Engagement for Firefighter Safety

Rapidly conduct, or obtain, a 360-degree situational size-up of the incident.

Report Number: 06-110

Synopsis: Engine compartment becomes involved before firefighters are prepared.

Event Description: Upon arrival at a 2 car MVA with minor injuries, an officer from an engine from our station disembarked from the truck and did not do a good 360 of the scene. He ordered his crew to take a set of irons and open up the hood of the #1 vehicle and disconnect the battery. Damage to the vehicle prevented normal operation of the hood. Upon my arrival, about 1 minute later, I did a full 360 and determined that the smoke coming from the engine compartment was not steam from fluids and advised the men to go back to the truck and don SCBA and stretch a 1 3/4 to protect the firefighters who were about to open the hood. No sooner did they don packs when the engine compartment caught fire. If it were not for my arrival, I believe these firefighters would have been burned on their faces. After the call and back at the station, a group review was conducted and all members understood the importance of doing a complete 360 at any incident.

Lessons Learned: Proper training and thinking outside of the box on all scenes.

Report Number: 09-1146

Synopsis: Missed 360 survey contributes to burn 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: 10-157

Synopsis: Good 360 and situational awareness saves crew.

Event Description: We were dispatched to structure fire forty-five minutes before shift change. We had personnel from both shifts on the scene. When we arrived on the scene, we found a restaurant on fire and we did a 360. I was the nozzle man on the initial attack. While completing our 360, I noticed several HVAC units on the roof and noted their relation to our entry point. When we entered the building, the visibility was only about three feet. We entered the kitchen and started attacking the fire. A gas line was apparently feeding the fire and we were not making much progress. There was heavy fire underneath the HVAC units, so I advised the crew to move back. We heard the air horn on the engine sound off three times, so we immediately left the building. As we left the building, there was a complete roof collapse in the area our crew had been working. Because of situational awareness, accountability, and safety, we were all able to go home.

Lessons Learned: Always do a 360 and be aware of your surroundings at all times. Keep your crew together so you can exit together and have accountability. There was only a small flame visible over the back door when we made entry. What you see on the outside before making entry can quickly change.

Determine the occupant survival profile.

Report Number: 09-1081

Synopsis: Basement fire burns through main floor.

Event Description: Engine [1] was alerted to a structure fire on [name deleted]. I was riding up as the officer that evening and upon arrival we found a wood frame residential building with a working fire on the Alpha/Bravo corner of the structure. I passed on command as a Chief Officer arrived and assumed a fire suppression role. My crew stretched a 1 ¾" attack line to the front door with zero visibility inside the structure and as I was masking up on the front steps. I laid my gloves just on the inside of the doorway and when I finished masking up, I reached for my gloves and they were gone. I did not know that we had a fully involved basement fire and the fire had already burned out the main floor my crew was preparing to enter. Engine [1] then took a defensive mode and extinguished the fire from the exterior.

Lessons Learned: There are several lessons to be learned from my near miss. First of all, we were entering an abandoned structure. As a rookie firefighter I was taught to be aggressive. It didn't matter if the structure was occupied or not. Now as I have trained more, I understand the motto "risk a little to save a little." We do not always have to enter a structure if there is no savable life. A lot of structure fires can be extinguished from the exterior and in a safe manner without risking your crew. Lesson #2 is that a 360 of the structure wasn't performed. If it had been, then my crew would have known we had a fully involved basement fire. Lesson #3 is that there was poor situational awareness on my crew's part as we should have recognized that we had a basement fire by reading the smoke.

Conduct an initial risk assessment and implement a SAFE ACTION PLAN.

Report Number: 07-749

Synopsis: Use of deck gun causes structure to collapse.

Event Description: A hose team entered a two story single family structure with a well involved roof/attic fire. Prior to the hose team entering the building, a deck gun had been used to control the fire. A portion of the second floor ceiling collapsed and briefly trapped a member. The member was easily removed and exited the building with a strained neck. The hose team entered the building before an Incident Action Plan had been established and argued with the Incident Commander about defensive tactics. The Safety Officer advised the duty captain to exit the building but the captain was convinced that an offensive attack was warranted. The building was not occupied by civilians.

Lessons Learned: Never go in under the fire. This is especially warranted after a deck gun has been used. The weight of the water may cause early collapse of the ceiling. After all occupants have been removed, there is no need to go offensive with a large roof/attic fire. Attack using exterior ground ladders should be considered.

Report Number: 09-813

Synopsis: Gas leak becomes gas explosion.

Event Description: Units responded to an "odor of gas" in downtown commercial building at 2215 hrs. Fire officials on scene contacted the local gas company requesting their assistance in detecting the presence and location of any gas leaks within the structure. Subsequent reports from the gas company informed the Incident Commander (IC) that the building was not connected to local gas service. Matters were further complicated when pre-incident fire plans verified the absence of liquefied petroleum gas (LPG) or synthetic natural gas (SNG) within the building and the lack of occupants who were knowledgeable or familiar with the building and its contents at that late hour.

FD crews began a systematic check of the building in an attempt to locate portable sources of gas. Leads produced no source for the odor. In one area where the odor was detected, FD personnel considered a methanol-powered vehicle as a potential source. At approximately 0045 hours, the vehicle was removed from its location and FD crews returned to their apparatus when an explosion occurred in the building.

The explosion tore off the door leading to a communication room on the second floor of the 16-story office building and sent it flying more than 20 feet from its original location. Scattered debris damaged several adjacent doors and walls throughout the area outside the communication room and left a cooling unit lodged in a window.

Fortunately, no one was injured. Two minutes earlier, FD crews had been in close proximity to the area where the blast occurred. Had personnel not removed the vehicle from its stall when they did, there may have been a tragic outcome.

After the explosion, a quick personnel accountability report (PAR) was conducted and all FD personnel were accounted for. Fire units then extended their investigation to the communication room where the explosion had occurred. High concentrations of SNG were detected coming from a conduit containing fiber optic cables. Earlier test readings around this same room failed to detect any significant gas readings. As a result, the locked communications room was not accessed or investigated. The gas company was notified of the events and a crew was sent to the scene to look for a leak in their lines. It was determined later that SNG from an underground 4-inch line was leaking and the synthetic lighter-than-air product had somehow found its way into the conduit, which ran into the communications room.

After consulting with the electric and gas companies, power to the area's entire grid system was shut down. Fifty businesses in the area were affected. Police closed streets and redirected traffic while gas company personnel completed an initial patch of the leaking pipe. At around 1230 hours, some 14 hours after the initial dispatch, streets were reopened and power was restored to the area. Gas company crews returned the following day to make final repairs.

Lessons Learned: Although a systematic risk assessment of this scene was conducted by the IC, first-arriving companies to this scene, and both of the department's Hazardous Materials Response Teams, this incident shows us that even when we believe we have eliminated all variables and all potential risks identified on our incident action plan (IAP) we should continue to monitor the situation for safety.

A revisit of our IAP might be considered to ensure that we have not overlooked any aspect during the preliminary investigation of the scene. During a preliminary post-incident analysis with the first on-scene companies, the IC for this response recapped his thought process and his IAP with his personnel. He reiterated the fact that at any time, if he himself or anyone at the scene determined there were any signs of impending danger, all units would have been alerted and removed from the immediate area of the scene. Speaking emphatically to the two probationary fire fighters who were present in this group, he also reiterated the fact that each individual should not hesitate to notify their superiors of any observation that has the potential to be unsafe. All members present said they would approach any subsequent response to an "odor of gas" with an entirely different set of eyes.

The bottom line here is that a systematic approach to any situation is essential; and even when it is applied correctly, there are always variables that may not have been uncovered during the initial size-up. Although safety at the scene is the responsibility of the IC or his/her designee, ultimately, it is the responsibility of everyone who has responded to the scene.

If you do not have the resources to safely support and protect firefighters, seriously consider a defensive strategy.

Report Number: 05-533

Synopsis: Firefighter injured during structure collapse.

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: 09-926

Synopsis: Defensive attack injures nozzle man.

Event Description: A first due, four-person engine company arrived at an abandoned, single story wood-frame residential structure fire. Approximately 60 percent of the building was involved, with the roof sagging on the "A / B" corner. A firefighter, backed up by a captain, pulled a 2 1/2" pre-connect with a combination nozzle and began attacking the fire from the "A" side. A permanent water supply had been established.

The crew was worried about an adjacent exposure structure approximately 30 feet away on the "B" side. Therefore, they attacked the fire head-on. The exposure structure was also an abandoned building.

The firefighter on the nozzle received second degree burns to shoulders, chest, thighs, and forearms (approximately 18% BSA). The burns were secondary to radiant heat. The firefighter was wearing full PPE, including an SCBA. His turnouts sustained some discoloration and melting on the reflective striping on arms, chest, and thigh area. The firefighter was transported to the hospital for burn care and released the next morning. He is off duty until further notice.

Lessons Learned: Take your time on defensive fires and position yourself to safely and effectively knock down the fire and protect exposures.

Defensive fires are called defensive for a reason. Defensive fires are not situations where we charge in and advance rapidly. Defensive fires should be advanced on slowly after the fire is knocked down and you know you will not be entering a collapse zone.

There's a time and place for a deck gun. Know when to use them and how to use them.

Risk a lot to save a lot. Risk nothing to save nothing.

DO NOT risk firefighter lives for lives or property that cannot be saved. Seriously consider a defensive strategy.

Report Number: 06-297

Synopsis: Commercial/Industrial Fire with Explosion

Event Description: A little after 5:00 a.m. in December (date deleted), my engine company was alerted to respond on a 2nd alarm assignment to a commercial/ industrial fire in a neighboring engine district. Initial arriving companies encountered heavy smoke from the rear of a 60x140 industrial occupancy of tilt-up concrete construction with a flat panelized roof. The first-in engine company stretched attack lines to the "C" side of the structure and encountered heavy fire after "opening up" at one of the large roll-up doors. The first-in truck crew was assigned Ventilation Group and immediately made their way to the roof. The second alarm had already been requested by initial arriving units as Battalion (deleted) assumed IC and continued organizing the incident.

When my engine company arrived, heavy fire could be seen venting through the roof at the rear one-third of the structure. At this point it was clear this was to be a defensive job. The IC ordered the truck crew off of the roof and instructed engine crews to begin stretching 2-1/2" lines and setting up for a defensive attack. As crews were stretching and positioning hose-lines, there was a tremendous explosion from inside the structure, shaking the entire fire-ground. The force from the explosion buckled one of the large roll-up doors on the "D" side of the building. The IC immediately instructed crews to move back from the building and observe precautions for possible collapse. The hand-lines were then placed at the "CD" and "AD" corners with identified escape routes for each crew. Several aerial master streams were subsequently employed and the fire was extinguished without further incident.

The explosion that occurred turned out to be a BLEVE from a propane tank used for fueling a forklift!

It was fortunate that crews had not attempted an interior attack and that the truck crew had exited the roof just before the explosion rocked the building.

Lessons Learned: This fire provided many valuable lessons:

We should not be in a hurry to introduce a life hazard, firefighters, into a situation where no life hazard exists.

Consider going defensive early on with these types of occupancies and stick to the decision.

Observe collapse precautions particularly after explosions.

Identify escape routes and safety zones for operating crews as well as looking out and communications. Remember LCES; Lookouts, Communications, Escape Routes, Safety Zones.

Anticipate and have contingencies for the unexpected (i.e. BLEVE).

Report Number: 10-755

Synopsis: Flashover occurs while crew is evacuating.

Event Description: We were dispatched to house fire and the first engine and volunteers arrived on scene to find heavy fire coming from the front structure bay window. The house was a brick building and had metal roof on top of several asphalt layers beneath. A 360 degree walk-around was made and command advised to make entry from the B-side door. Crews made their way inside and were met with severe heat and zero visibility. Firefighters were pushed to the floor due to the heat. The inside officer advised personnel to exit the structure. As crews retreated from approximately 20' inside the structure, the battalion chief ordered an evacuation. As firefighters were returning to the B-side door to exit the house, there was a flashover.

Lessons Learned: Situational awareness was discussed not only for interior fire crews but safety and incident command. Due to the early morning hours and poorly lit scene at beginning of the call, crews and safety were unable to clearly see the changes in smoke dynamics. Also, the building construction and how it retains heat hindered ventilation operations.

Extend LIMITED risk to protect SAVABLE property.

Report Number: 06-485

Synopsis: High heat conditions in mobile home fire.

Event Description: All units responded to a residential structure fire (Mobile home) with reports of smoke showing. Approximately 4 min. into the response, dispatch advised all units responding to switch to channel 2 for remainder of call. Dispatch advised no hydrants in area. [The Chief] arrived on scene, reported smoke showing from eaves, and established command. [The Chief] advised all units that SO reported building was unoccupied. [The first Engine] arrived on scene and was directed by command to enter through driveway on south side of building and position apparatus in front of building. No exposures were in danger. [The first Engine] then pulled the #2 cross lay and advanced it up to the A side of the building at the front door. The front door was open prior to our arrival. The window on the south west side of the building had already ventilated itself; the window closest to the front door was

ventilated prior to entry. Attack team entered the A side front door of the building and noticed heavy black smoke banked to the floor but no visible fire. Attack advanced into structure and knocked a small amount of fire down in hallway. A second line was pulled to the front door as a safety line. The seat of the fire was found in the living room area and was knocked down. The structure was simultaneously being ventilated outside, while utilities were being secured by pulling the outside panel. A primary search of the structure found that the building was clear other than nine cats and two hamsters reported inside. The building was overhauled and deceased cats were found. One living cat was found in the far west bedroom still breathing. The cat was removed and given oxygen. The cat's condition improved, animal control was notified. Red Cross was also notified. The remaining cats were buried next to the house. During initial attack water supply had been established with [a second Engine] supplying [the first Engine] off tank water. Tanker 4 supplied [the second Engine]. Approximately 1300 gallons of water were used to control and overhaul the fire. All attempts were made to salvage any undamaged personal contents.

No injuries were reported, but this was deemed a close call. Firefighters could have been severely burned.

Lessons Learned: During the fire attack, two firefighters escaped injury. They entered the structure into the heavy black smoke and because they could not see flames, did not apply water. The interior temperatures were extreme and caused damage to 2 fire helmets, 2 bunker coats, SCBA strap and mask shield. Recommend that crews more aggressively ventilate these types of structure fires before entering, or apply water before entering.

Walk around and size-up are very important!

1. Identify your strategies.
2. Initiate an "Incident Action Plan" (IAP)
3. Initiate your tactics.

Report Number: 08-570

Synopsis: Gas leak finds ignition source.

Event Description: Companies responded to a natural gas leak. Upon investigation, members were dressed in PPE with the exception of gloves and SCBA. As the three person crew approached the two story building (bookstore and bar on first floor and flop house type apartments on 2nd floor) they could smell natural gas from an outside leak where work was being done. The battalion chief in charge ordered a fan be placed in the door of building to ventilate. The fan ran approximately 30 to 60 seconds before the explosion.

The employee of the bookstore came out of the building and informed the officer of the heavy rescue that there was a gas smell in the structure and stated everyone was out. The officer stuck his head into the door and acknowledged that there was a significant buildup of natural gas. He immediately turned around and told his crew to get away. At that point, he heard a whoosh sound as the gas reached an ignition source in the structure. The three crew members were blown into the street with the officer suffering the most serious injuries. Two firefighters were transported and kept for 24 hours in the

hospital. CAT-scan and x-rays were taken due to being struck by bricks and flying debris. The third firefighter was transported to a burn center and is currently having skin grafts on both hands. He will spend over a week in the burn unit being treated for burns to face and hands. The firefighter with burns on his hands did not have gloves on which contributed to the severity of his injuries.

When the explosion occurred, a mayday was transmitted and the communication center immediately dispatched a 2nd alarm. Command observed about a 30 foot fireball leaving the structure and engulfing the firefighters. Command also observed the roof lifting off the building. The battalion chief requested additional paramedic units in order to transport the injured firefighters. The rapid intervention team immediately went to work and remove the firefighters from the debris of the structure that was blown on them. Once firefighters are safe (this building was a total loss) protect the remainder of your firefighters.

Lessons Learned: Review SOP's.

Position apparatus at least 200 feet away from structure.

Maintain control of scene.

Limit exposure of personnel.

Coordinate operations on the fire ground.

Assure all PPE is in place in the hazard zone.

After command gets control of incident, assure that no safety violations occur and discuss/plan with command staff.

Extend VIGILANT and MEASURED risk to protect and rescue SAVABLE lives.

Report Number: 07-947

Synopsis: Ceiling collapse at church fire endangers interior crews.

Event Description: We responded to a reported structure fire at a 90 year old church less than 1 mile from the station. Upon arrival, we found heavy fire showing through the roof of the sanctuary. The structure was occupied at the time of the report and all occupants accounted for. There was no rescue. Incident commanders decided to send two separate crews interior to 'pull ceilings' and attempt extinguishment of attic above a two-story high ceiling. Truck crews laddered adjoining structures to prevent extension with trenches. Minutes later, the weakened roof structure of the sanctuary collapsed without warning. Fortunately, crews working inside were in an area adjacent to the sanctuary at the moment the roof came down and no one was injured. Hose lines which were advanced into the sanctuary were burned. Master streams were finally employed as the building burned to the ground.

Lessons Learned: Incident commanders should listen to first-in reports and consider the risk of sending crews interior.

More effort should be spent on 'what's happening' now' rather than setting up every aspect of the incident command system.

Certain master-stream appliances can effectively be utilized to provide a quick and temporary knock-down, giving crews time to safely position for final extinguishment. Had this tactic been employed using the rigs on-scene, this church would still be standing and our department would not have had the closest life-loss incident I've seen in 25 years.

Finally, a post-incident critique did not include all of the captains that were present at the fire and no mention was made of the decisions to send crews inside on a through-the-roof, non-rescue incident.

Report Number: 08-101

Synopsis: Freelancing at structure fire endangers interior crews.

Event Description: My department was dispatched to a reported house fire with possible entrapment. I responded in the first due engine with a driver/operator. First arriving firefighters reported a single-story wood-frame house with flames showing from the C/D side of the house. Reports from the scene said an 80 year-old female was possibly still in the house and was unaccounted for.

On arrival I was directed to lead a crew in for a primary search and fire attack. After advancing into the structure on the A side, it became apparent that if a rescue were to be made it would be towards the B end of the house as the well involved D side made the likelihood of finding a viable victim in that area low. The nozzle man quickly knocked down the fire to his right and proceeded left down a short hall to the bedrooms. The back-up line was in a position to protect the attack line crew. Suddenly, visibility, which had been good, deteriorated to zero and heat banked down on the attack crews. I felt water hitting my back and realized someone was operating a hose line behind me. I pulled my crews back to the entry point to find a lone firefighter (a firefighter with over 30 years on the job) operating a hand line in through a window at the A/D corner forcing fire, heat and smoke down the hallway onto my crews.

Sadly, this incident of freelancing occurred within full view of the chief who did nothing to prevent it. These actions were a perfect example of freelancing at its worst delaying rescue operations and endangering firefighter's lives. The victim was later found deceased in the area of origin. The cause of the fire was determined to be smoking in an oxygen enriched atmosphere.

Lessons Learned: Commanders must lead! Commanders must be conscious of freelancing! SOP/SOG's must be followed and crew leaders need to maintain an awareness of conditions and be ready to react to changes in environment quickly. Freelancing must not be tolerated by anyone!

Act upon reported unsafe practices and conditions that can harm firefighters. Stop, evaluate and decide.

Report Number: 05-495

Synopsis: Firefighters nearly struck by broken coupling from over pressurized supply line.

Event Description: Our engine and truck company were participating in probationary firefighter training for our newest firefighter on the shift. The drill entailed establishing and flowing an elevated master stream through our 105' pre-piped aerial. Also being trained is a relatively new firefighter who is being qualified as a back-up engine driver/operator. Because this was a familiarization-only drill, a single 20' pony sleeve of 4-inch hose was used to connect from the engine to the aerial's waterway intake. The gate was closed on the aerial side of the hose.

What followed was a series of communication errors and human errors. Due to a miscommunication from earlier in the morning, the firefighter operating the pump panel mistakenly thought that the starting pressure for the operation was to be 225 psi, our starting pressure for aerial master streams is 150 psi. In addition, the aerial turntable operator had the intake gate closed. The firefighter on the pump panel thought that the truck crew had stated they were "ready for water." In fact, they were not. The pump operator opened the gate valve on the pump outlet, and began to increase pressure on the line. Within 5 seconds, a loud "pop" was heard. The engine officer and two truck company firefighters were standing within 20 feet of the apparatus. None had their helmets on. With the "pop" noise, the 4-inch hose failed at the coupling immediately behind the (unisex) connection on the truck's waterway intake gate. The metal collar that holds the hose onto the (unisex) coupling flew off the hose as it initially whipped when it came off of the truck, and it narrowly missed striking the engine captain who was standing nearby. Luckily, no one was hurt in this event and property damage was limited to the 4-inch hose and its (unisex) coupling.

Lessons Learned:

1. Whenever pumping apparatus and/or aerial apparatus are being used, all participants in the immediate area of the equipment should at least be wearing helmets and leather gloves.
2. Assure before starting a training evolution that all participants fully and completely understand their roles and responsibilities. For new trainees, assure that an experienced member is overseeing their activity.
3. Consider a "challenge and response" means of communication. In this case, if the pump operator had taken a second to assure that the truck operator was truly ready for water, the event may have been avoided.
4. Know the limitations of all equipment you are using either in operations or training scenarios and never exceed manufacturer-recommended specifications. The hose in this case had stamped on it "Test to 200 psi" yet the pump operator thought the pump pressure should be 225 psi.
5. Establish a "safety perimeter" around training evolutions and keep non-active participants outside of the perimeter.

Report Number: 06-103

Synopsis: Firefighter jumps on moving fire truck.

Event Description: On the night of February 16, 2006, while in a classroom that was located in the engine bays of this station, the group learning about Near-Miss Reporting witnessed an action taken by an FD member.

The engine that had gone out on a run was being backed into the station, and a member jumped on the side of the truck while it was backing in. It appeared that he was positioning the engine so that they could plug in the shoreline. The instructor of the Near Miss looked at me. I commented to the group, about 60 fire chiefs, that I was going to write up a report to be placed on the near-miss reporting.

I don't even think the other officers of this company thought that anything he did was wrong, when asked what would happen if he fell, hit his head, traveled up under the wheels. It was scary.

We have folks in our business that don't think we can tell someone that they are performing unsafe acts. We must and we have to for the protection of our brothers and sisters.

Lessons Learned:

If you are having a safety program at your station, everybody should be acting in a safe manner. What is scary is they didn't think there could be an injury.

As a safety guy, I would tell my folks, "Kids don't act like you are performing your job in a safe manner when the safety guy is here. I'm not here 24 - 7."

Most of the time it's attitude; "It will never happen here," or "It will never happen to me."

Maintain frequent two-way communications, and keep interior crews informed of changing conditions.

Report Number: 07-836

Synopsis: Fuel spill explodes in flooding basement.

Event Description: Our department responded to a service call, pump out request. Upon arrival, the home owner advised the chief she also smelled gasoline in the house. The chief ordered a two person crew to don SCBA, breath air, enter the basement, and turn off the utilities. The two person crew entered the basement, which had about 3-5 inches of water. When they reached the middle of the basement, the room went up in flames. The chief noticed the flames shoot from the windows and ordered an evacuation, and mutual aid to assist fighting the fire. The two person crew, surrounded in flames evacuated. The crew was evaluated by EMS and was unharmed thanks to using full PPE and SCBA.

It was determined that a gasoline canister tipped over and the gasoline was floating on top of the water in the basement. Once the water was high enough, the pilot light on the hot water heater ignited the gasoline.

Lessons Learned: The lessons that were learned were not to become complacent about using PPE and SCBA. Since this incident, our department stresses the use of PPE and SCBA on all odor calls until the scene is assessed and stabilized.

Report Number: 08-154

Synopsis: Exterior crews operating on High Rise fire advise fire being drawn back into unit.

Event Description: Units responded to a reported fire in a 19 story fireproof high rise multiple dwelling. Upon arrival, fire was venting out a second floor window. When the first ladder company exited the stairway on the second floor, they encountered a smoke and heat condition in the hallway. The inside team entered the hallway to locate the fire apartment and conduct searches and confine the fire. Advancing into the apartment, the inside team located the fire in a rear bedroom but was unable to confine the fire. The first engine was still in the process of stretching a hose line when the ladder company chauffeur of the first ladder company started monitoring conditions from the exterior and

noticed a change in fire behavior. Fire that was venting out the second floor window a short time earlier was now being drawn back into the apartment. This information was conveyed to the first ladder, inside team now operating in the apartment. The officer, aware a charged hoseline, was not in position and that fire conditions were now changing. He suspended the primary search and ordered the inside team out of the apartment. The team closed the apartment door behind them. The fire eventually involved the entire apartment before a charged hose line was in position at the apartment door.

Lessons Learned:

1. Wind driven fires can occur on any floor; even lower floors.
2. Continually monitoring radio transmissions will increase situational awareness.
3. Members operating outside buildings should report changes in fire behavior to units operating inside buildings and the Incident Commander. Information on fire direction, travel and intensity may prompt units to alter tactics. It is essential that any change in tactics be reported to the IC. These communications must get through.
4. Maintaining control of apartment and stairway doors is critical to a safe operation.
5. Effective radio communications prompted the first ladder officer to alter tactics. Training and effective communication improve decision making.
6. Conditions on the fire ground can change quickly. Have an alternate plan to ensure member's safety if conditions deteriorate.

Report Number: 09-027

Synopsis: Observant BC gets crew out of harm's way.

Event Description: Crews were operating on the scene of a house fire involving a lightweight construction, tiled roof structure. There was exterior fire noted on the B/C corner. The second due crew was assigned to assist with extinguishment. The first due crew grabbed a hydrant. This appeared to be an exterior fire on the second story back deck (enclosed patio with gas fireplace, BBQ kitchen set up). Fire was noted in enclosed walls and above by observing the can lights. We did not realize the fire had breached into the attic space. The interior of the house and the deck were completely tenable, not hot or smoky. Crews were standing upright. Outside the battalion chief notified crews to immediately exit the structure. Within less than five minutes the truss system in the B/C corner roof collapsed. We went to defensive operations.

Lessons Learned: Use situational awareness and communication. I witnessed fire coming from a ceiling can light and did not notify captain. I also did not realize the potential of the fire getting into the open attic space above the head of the working crews. The smartest thing that happened was the battalion chief noting active fire venting from the roof and getting the interior crews out of harm's way.

Report Number: 12-047

Synopsis: Tactical channel not properly assigned by dispatch.

Event Description: Our communications plan was changed by dispatch at the receipt of a first alarm assignment to a structure fire. The message only appeared on the Mobile Data Terminal (MDT) and was

never broadcast over the air to responding units. Out of the ten units that were dispatched, only three were correctly assigned and using the right radio channel once on scene. The building was fully involved with crews working inside and the incident commander was unable to communicate with everyone.

Lessons Learned: Check the MDT for the communication channel plan. If it's a different tactical channel than what appears to be normal, check with dispatch en-route so everyone hears the change. After giving the size up, announce the tactical channel and command channels on the radio so everyone is in the same page.

Obtain frequent progress reports and revise the action plan.

Report Number: 06-454

Synopsis: Situational awareness minimizes danger when floor collapses.

Event Description: We were dispatched to a house fire with one person trapped on the roof. Our units arrived along with the battalion chief right behind us. My truck was the first unit to turn on to the street. Visibility was diminished due to the amount of smoke being produced. We finally arrived and I gave a report of "Truck [# deleted] on the scene, with a two story single family, heavy smoke showing." ECC in turn asked if I was direct on the one trapped on the roof. I advised that "I was OK". At this point, my driver retrieved a 16' roof ladder and placed it to the awning on side-A and began to try to rescue the homeowner. This freed my tiller-man and me to do forcible entry for the Engine Co. as well as rapid ventilation. Once I donned my SCBA and proceeded to side-A, the homeowner advised me the floor was only held up by three beams and expressed concern for Fire/Rescue units operating in the house. I in turn radioed an urgent message to command advising him that "The homeowner advised that there are only three beams holding up the first floor, advise units that will operate on the first floor to use extreme caution." I then forced the front door open by kicking it and was greeted by a large amount of thick smoke.

My next task was to perform a circle check. While performing this I realized that the fire was in the basement, again I gave an urgent radio message to command, "Be advised that the fire is in the basement." They acknowledged and asked if there was an entrance to the basement from the exterior. I advised command that there was and ordered my tiller-man to force the door open. Unfortunately, he had dropped his hydra-ram in the front believing that when I kicked the front door we would proceed in to the first floor. I asked him at this point to retrieve it and come back in order to fulfill my request. At this point, I vented a window on side-B to the basement and could see where the bulk of the fire was. Engine [# deleted] crew was with me at the window, I asked the OIC if they were ready to attack the fire; he said yes. I then entered through the window followed by Engine [# deleted] crew. We began an aggressive attack on the fire, but realized our pressure was not sufficient to do the job. At this time, the door which I had asked to be forced was open, so by my tiller-man, along with Engine [# deleted] crew entered the door and joined in the operations in the basement. We continued our operation for a few minutes until I observed the first floor sagging and beginning to give way where the fire was most concentrated. I ordered all the personnel from the basement and advised command for a third time of an urgent message, "Be advised the first floor just gave way in to the basement." Command then advised me to remove all personnel from the fire floor. I advised him that "All personnel were told to do so and everyone was already out of the basement." At this point, we began to operate in a defensive attack until we extinguished the fire.

Lessons Learned: Proper communications played a key role. The ability to have control of personnel and have them follow orders also assisted in no one getting seriously injured and or killed.

Report Number: 09-218

Synopsis: Communication not trusted almost leads to disaster.

Event Description: Fire company was dispatched to reported structure fire in a residential dwelling which was a log home originally built in the 1700's that had experienced several renovations throughout the years. Upon arrival there was fire visible from the roof and the structure appeared heavily involved in fire. The fire chief and I arrived at the same time, and after donning PPE I took operations while the fire chief set up command of the incident. Our fire station responded with an 85' aerial platform truck and pumper/rescue carrying 1500 gallons of water. As part of my size up, I entered the building and proceeded to the second floor. There was limited smoke on each floor. At the base of the attic stairs I noticed a heavy smoke condition visible from the interior and requested an aggressive interior attack coordinated with vertical ventilation by the truck crew. With an interior crew consisting of 4 firefighters (2 officers and 2 firefighters), a 1-3/4" attack line was advanced up the attic stairs to the entrance of the attic. The attic had been converted into a finished space that served as a bedroom for a young child. The child was accounted for upon arrival. The captain reported the fire intensity in the attic was too great to make entry, which I dismissed without verification. I proceeded past the crew to the nozzle and attempted entry myself only to find the captains report credible. At this time there were all four fire fighters located in the stairwell when the wall gave way behind us effectively cutting off our means of egress. Quick action by one of the other fire fighters extinguished the fire and the crew was able to return to the second floor. We attempted another advance to the attic by opening the walls on the way up the stairs and extinguishing the fire on the way up. We finally reached the attic to extinguish the fire. At this point another team had to replace us, as our cylinders were running out of air. Upon refreshing our air cylinders, I proceeded back into the building to verify the progress of the interior crew and determined the replacement crew was making progress on the fire. I reported the fire under control. At this point the fire chief reported there was still significant fire showing through the roof which was undetectable from the interior. After the fire was extinguished, and upon complete investigation of the building, the fire chief and I determined the fire started the attic above a plaster ceiling and progressed down through the walls into the void space surrounding the stairs leading to the second floor. Essentially the initial attack crew was completely surrounded by fire as the initial attack was attempted, unknown to us. This situation created a potentially deadly scenario which could have resulted in possible death or serious injury to the initial attack crew.

Lessons Learned: Constant communication with the outside command would have allowed the interior crew to know that their progress was not having any effect on the visible fire from the exterior. The use of thermal imaging cameras would have assisted the interior crew to recognize the extent of the fire surrounding them while making the interior attack. Listening and trusting comments made by fellow officers as to the situation they are experiencing i.e. the captain reported the attic was too hot to enter and I dismissed this accounting. An operations officer not getting directly involved in the actual fire fighting activities would have allowed me to recognize the seriousness of the situation and the opportunity to take corrective action to allow a successful attack on the fire.

Ensure accurate accountability of every firefighter's location and status.

Report Number: 06-500

Synopsis: RIT activated on single family residential fire.

Event Description: Upon my arrival, I found a 1 story residential, 1000 square foot structure with smoke coming from the A/B side of the home. Flames were visible in the living room. I took Command and struck a 2nd alarm. I made contact with the occupants and ensured there would be no rescue needed. After a 360 walk around, the first in engine arrived and was instructed to perform an interior attack, entering the structure from the B side garage utility door. They entered the house through the C side door with a 1 3/4 attack line with Class "A" foam, tools and TIC. The kitchen was to the immediate right with the basement stairs directly ahead. The 2nd in engine was assigned as the back up team. RIT arrived and was informed of the situation. Updates from the interior crew were that they were still in the kitchen area experiencing heavy heat and trying to make their way to the living room. Command noticed a sign of conversion from the A side of the house then it stopped. The interior asked for ventilation, the B side kitchen windows were already vented along with the A side picture window. Now heavy black smoke was pushing from the A/B sides. The back up team was instructed to enter and assist. The PPV fan was placed at the B side utility door, which proved to be ineffective because of poor placement and the wind blowing into the A side picture window. Interior reported still making no headway inside. Command advised them that they will be given a few more minutes to get the fire under control or they would have to pull out. As conditions worsened, Command made 2 attempts to contact the interior crew with no response. As Command walked to the B side, the backup crew and one FF from the interior crew had exited. When asked the location of the interior crew, the FF stated "I do not know". Command immediately activated the RIT. They [RIT] followed the hose line and found the two FFs in the corner of the kitchen. The nozzle man had collapsed due to heat and the company officer was attempting to pull him out and got turned around. RIT removed both FFs and after an accountability check was made, a defensive attack was made and the fire was extinguished in 5 minutes. The nozzle man was transported for heat exhaustion.

Lessons Learned: What happened was the interior crew never realized that the fire had spread into the kitchen and was above and behind them. When asked if the TIC was used to help in locating the fire, the C/O [Company Officer] stated that it did not work. Water/foam was never applied except for the brief moment when Command noticed the conversion. This was explained as the nozzle accidentally opening, then being closed. As the conditions worsened the nozzle man collapsed. The C/O told the backup crew and #3 FF to exit and then attempted to remove the nozzle man. These occurrences were never communicated to Command. When questioned about this, the C/O stated he was more focused on getting his crew out than talking on the radio. The lessons learned were to be more aware of the conditions and situation, how equipment works, and communications. This could have been a tragedy. We were very fortunate that it was not. Hopefully we will take this event and apply it to our training to ensure it never happens again.

Report Number: 09-990

Synopsis: Crews caught in roll-over, communications blamed.

Event Description: Our department was dispatched to a structure fire reported by police who were initially dispatched to a burglar alarm. First companies arrived to find a two story, wood frame multi-use structure with moderate smoke issuing from the structure. After forcing entry, the engine company (three person hose team) entered with an inch and three-quarter attack line and a TIC. The crew reported high heat conditions and indicated that the TIC screen was red! They proceeded to the right and pushed to the rear of the structure with heavy black smoke but no visible fire. A rescue company (2 person team) entered shortly after the engine company. They too reported extreme heat at the floor and a Red screen on the TIC. The rescue crew also proceeded to the right and pushed to the rear.

Outside, the IC and ladder company crew observed smoke conditions rapidly changing from laminar light brown smoke to a turbulent black smoke pushing from the entry doorway. At this time, IC attempted to contact the initial engine company without success.

Back inside, the rescue crew reached the engine company at the rear wall. They all reported the same high heat conditions with no visible fire. Some confusion occurred when personnel mingled together and at some point, the rescue crew lost contact with each other. The engine captain also lost track of one of his two rookie firefighters. One of the rescue members retreated outside and reported he had lost his partner. At the same time, the engine captain attempted to radio IC that he too had lost a member of his crew and to report the condition encountered inside.

Back outside, the IC ordered the ladder company to "vent" a large window on the A Side of the structure. As this window was vented, the ladder crew observed fire at the floor level and it rolled across the room toward the rear of the structure.

The captain of the engine observed the fire roll over head and ordered his crew to evacuate. He reported extreme heat and made a hasty exit out of a window. Upon exiting, he reported that he had lost his crew and a MAYDAY was called. Almost immediately, all interior crews were accounted for at the entry doorway. The engine captain sustained 2nd degree burns to his face. No other injuries were reported. Crews quickly regrouped.

Later arriving companies were assigned to the fire attack, and the fire was quickly contained.

Lessons Learned: Communications- The interior crews had some difficulty with the radios inside. The radio seemed to work fine. User errors lead to the problem. Better training in the use of the radio will correct this issue.

Situational awareness- All personnel on the interior crews failed to recognize the conditions they were entering. While it was during the early morning hours, better education and understanding of fire conditions and behavior would prevent this error in the future. During a critique, the involved personnel recognized the conditions and agreed they should have made some tactical priority changes prior to entering.

Decision making- The decision to vent the window once the conditions were recognized was a risky one at best. This action most certainly prevented a flashover that could have resulted in a catastrophic event for the interior crews. However, this decision placed the interior crews in extreme danger. The decision to vent should have been communicated to the interior crews so they could be prepared for the change in the environment.

All involved personnel did an extraordinary job and reacted to the changing conditions accordingly. The mayday was called immediately in accordance with department policy and a RIT team was in place and prepared when the MAYDAY occurred. Our department has recently increased training in situational awareness, communications, and size up. This training did aid in recognizing the changing conditions but additional training will occur.

Report Number: 12-010

Synopsis: Good SA protects FFs at structure fire.

Event Description: Our department responded to a residential structure fire reported from a neighborhood near our headquarters station. Upon arrival we were faced with a heavily involved garage fire that was spreading into the attic of the house. We started a fire attack on the burning garage from the exterior with a 2.5" hose and a team consisting of two firefighters and myself. During the attack, our team positioned themselves on the empty driveway and had moved to within several feet of the burning garage. Our assistant fire chief was functioning as an operations manager from the front yard, giving direction to crew members entering the front door. As he was doing this, he noticed from the side of the garage the brick veneer wall above the garage door had begun to bow out and was leaning towards our location in the driveway. From our vantage point we could not see that the structure supporting brick veneer had burnt away. During our initial attack the extent of damage to the structure was somewhat hidden by the flames and smoke. As we began to knock the fire down, the assistant fire chief recognized the signs of an unsupported brick veneer wall that was in imminent danger of collapse. He immediately came over and moved our attack team back roughly 15 feet away from the garage. Not more than 30 seconds after we repositioned, the entire brick veneer wall pulled away from the destroyed framework and collapsed onto the driveway with debris tumbling right up to the feet of the hose team. Both the chief and I ran up to the firefighters checking for injuries and found them to be ok. From our vantage point in the driveway the wall appeared flat and gave no signs of potential collapse.

Lessons Learned: The importance of recognizing the potential for structural collapse during a fire cannot be overstated. Adhering to the principle of knowing the collapse zone and staying clear becomes critical. Residential structures built using brick veneer should always be suspect to failure when a heavy fire condition exists in the area of the wood framing adjacent to the wall. Always play it safe and keep personnel away from these such veneer walls should you discover those significant conditions and consider the time the fire has acted upon them. Acting immediately and not waiting to see what happens is the final step. Step in, use a "lean forward" attitude and correct the situation before something goes wrong.

If after completing the primary search, little or no progress toward fire control has been achieved, seriously consider a defensive strategy.

Report Number: 05-418

Synopsis: Fire in church traps several firefighters. Multiple maydays called.

Event Description: Units responded to automatic alarm at church. While enroute, incident was upgraded to full alarm assignment on reports of fire in the "red brick" building. First alarm assignment consisted of Q(X), E(X), E(XX), E(XXX), E(IV), B(X). Q(X) and E(X) arrived 1st with nothing visible from large church. Q(X) took command and positioned on the south side, and E(X) positioned on the North-side. On investigating E(X) reported working fire on second story and was stretching line to attack fire. Approximately 1 minute after arrival command requested 2nd alarm and sent Q-crew in to assist with evacuation and investigation. At 2 minutes in command advised that smoke condition had changed, and warned interior crews that they possibly had a "well charged attic".

E(X) acknowledged and proceeded to attempt to locate and extinguish a fire located in 1 room (per radio report). At approx 4 min in E(XX) reported fire at an exterior porch and ceiling starting to come in on the north side. As B(X) arrived and assumed command, radio time was hampered with the request for additional resources such as police and our laundry list of things. At approximately 6 minutes in we had approximately 3 big boosters and 1 super booster operating. Units on the interior were requesting more pressure. At approximately 8 minutes in, units were not reporting any progress and command was debating a switch to defensive operations. At this point a total of 3 maydays were transmitted by interior crews with members lost and off of hose lines. E(X) firefighter ended up outside the building and was out of air. His lieutenant was left in the building.

At this point the decision to go defensive was made, and all members were ordered out. E(XX), knowing the situation, decided to stay and was able to find E(X) lieutenant, who was lost and low on air. All companies were able to exit and after a large aerial assault the fire was brought under control.

Lessons Learned:

1. Exterior smoke conditions must match reports from interior companies.
2. Consider the size of the structure when reading smoke conditions.
3. Sound your mayday as soon as you are in trouble.
4. Company officers must keep track of their crew members and their air supply.
5. Radio discipline (must be observed) from units not engaged in fire ops.
6. Support units can be called for on cell phones or included as automatic dispatch.
7. Fire is not 1 dimensional. If your lines are not reducing the volume, it may be beyond interior operations.
8. Thermal imagers are a must for every company on the fire ground.
9. Sometimes the building will win.
10. Know what the fire is doing to the building and what the building is doing to the fire.

Report Number: 08-121

Synopsis: Fake chimney collapses into garage near crew.

Event Description: We responded to a reported structure fire in a residential structure. The first arriving engine reported heavy smoke in an approximately 6,000 square foot, two story house. I arrived shortly after the first engine and as other apparatus arrived they were assigned tasks. There was an IC in place, accountability in place, and fire ground communications on a dedicated TAC channel. There was a primary and secondary water supply established and two aerial trucks positioned for a defensive attack if needed. About ten minutes into the fire, the IC asked for a progress report. Interior crews reported some progress. They were operating two 1 3/4" handlines on the second floor at the top of the stairwell.

About 15 minutes into the fire, a significant structural collapse occurred. An emergency evacuation order was declared on the TAC and Dispatch channel, secondary emergency evacuation signal (apparatus horns sounded) was given, and radio confirmation was received. Crews were removed and an accountability check was OK. The structural collapse was a large section of masonry chimney that extended past the roof line, but was supported by a 2x4 frame underneath the roof. The chimney was for aesthetics only, not a function chimney. The large piece fell into the garage where it smashed a late model Cadillac down to the concrete slab like it was a beverage can. If the chimney had fallen in the other direction, it would have collapsed directly where the crews were operating. It is unlikely any of them would have survived the impact.

Lessons Learned: Try to identify these structures in their construction phase. Our department is considering a visible marker to indicate structures with these features. It is difficult to identify real chimneys from these "fake" ones post construction. We are also working with plans review and the fire marshal's office to receive notification of these structures. This will be entered into our dispatch program. The owner of the home rebuilt the home after the fire. I had a chance to speak to him after the fire and we discussed the potential for significant loss. The new home does not have the chimneys.

Report Number: 08-326

Synopsis: FF freelances and narrowly escapes flashover.

Event Description: We responded to a structure fire with one person trapped. Upon arrival, my initial assignment was to extricate the victim. I did this with my lieutenant. We pulled the victim through a bedroom window. He was elderly, burned and suffering from smoke inhalation. My lieutenant and another crew began patient care. I noticed an attack line had been laid in the front yard with no one on it. I picked up the line and headed for the front door. Two more firefighters assisted my advance. I forced the door and we entered. The house was fully involved with fire in every room. We managed to knock down fire in the living room and had to decide to advance left or right (bedroom or kitchen). When we turned toward bedroom, the house flashed over. We bailed through the picture window. Lessons Learned: I should not have left my officer. No ICS at the time. Don't freelance. Probably did not need an interior attack. No accountability. Patient expired so we did not save anything. House was a total loss and bulldozed the next week.

Always have a rapid intervention team in place at all working fires.

Report Number: 06-083

Synopsis: RIT leader ignores responsibility and attempts to get another assignment.

Event Description: After arriving at a structure fire in a single family home, and having initiated the incident command system, I ordered two fire fighters that arrived on a call back apparatus to initiate a rapid intervention team. We had a well-involved structure with reports of a person trapped, and the fire was communicating to a second structure. After the initial attack team entered, I noticed the RIT team putting their masks on and preparing to enter the building. Apparently, a Captain had ordered them into the building. The RIT team leader was upset he was "just standing around" so he solicited the Captain to go to work. I questioned the Captain and had them withdrawn from the building. The RIT team leader

did not take the job seriously, and did not communicate his assignment to the Captain, leaving us without a RIT team at a very dangerous fire.

Lessons Learned: Assignments are to be carried out without argument. RIT is vital to our safety. When making assignments, first consider if the crew was assigned and accounted for by command as they arrive at the incident scene.

Report Number: 08-287

Synopsis: Changing conditions in balloon-frame home.

Event Description: This was a two-story balloon-frame single-family residence. Upon arrival, the first engine reported heavy fire on the first floor with auto exposure to the eaves on the "D" side. [Unit number deleted] was the 3rd engine on scene and ordered to search for extension in the second floor. Upon [unit number deleted] entering the building, the main body of fire was extinguished on the first floor. [Unit number deleted] advanced a dry line to the second floor in case fire was found. Upon entering the 2nd floor, a TIC revealed no excessive heat or active fire from the top of the stairs. [Unit number deleted] crew made their way to the front area of the 2nd floor and began opening the knee walls along side "D." Fire was found on the inside of the knee walls at the eave line extending midway down the "D" side from the "A/D" corner. Vertical ventilation was completed by the tower and [unit number deleted] crew took out the "A" side window. Smoke conditions improved greatly allowing [unit number deleted] crew to walk around the area moving furniture/debris and extinguishing the last remains of fire in the knee walls. The crew was still on SCBA but had no heat and good visibility. The 2nd floor was divided into three rooms with the front room being 8x10 in size. The wall dividing the front room from the middle room had a closet. During the extinguishment and overhaul phase on the 2nd floor, flames began coming from the top of the closet wall. Another crew member stated there were flames coming from the middle room extending into the hall towards the engine crew. The hoseline was directed to the flames in the closet and then to the hallway. Immediately following this action, conditions rapidly deteriorated. Thick black smoke and a rapidly increasing high heat conditions occurred resulting in the immediate order to evacuate through the Division "A" window. This window led to a porch roof and an escape ladder that had been provided by the RIT team prior to the bailout, was in place at the porch. All four members of the engine crew (two of whom were probationary) safely exited onto the porch roof. The hose was pulled from the interior to the exterior and the nozzle directed into the building through the window. Once the fire was knocked down, the [unit number deleted] crew reentered the building from the porch roof and completed extinguishment.

The crew involved was utilizing a TIC throughout the incident and had evaluated the conditions in the middle room prior to passing it by. This examination revealed no significant heat conditions or active fire. The contributing factors were a balloon frame home and a dry wall ceiling covering the underside of the original cedar shake shingles.

Lessons Learned: The major lesson learned is to always maintain situational awareness while working in and around a fire building. Our crew had been working on the 2nd floor for approximately 15 minutes with increasingly good conditions. The known fire in the knee walls was easily being extinguished and the truck work (vertical vent) had been completed. The rapid change in fire conditions, we believe, was caused by fire extending in the walls from the 1st floor into the dividing wall on the 2nd floor. This fire then extended above the dry walled ceiling, igniting the cedar shakes. At some point, the dry wall failed,

resulting in the rapid change in conditions. The changing conditions were first noted from the exterior crews as the black smoke came from the vent hole and the window on the "D" side. Command attempted to make radio contact with the [unit number deleted] captain but during that attempt the captain had already ordered the evacuation. Other lessons reinforced are:

- Bring a line when checking for extension or working above.
- Use the TIC.
- Know your escape routes.
- Explain to your crews what their actions should be when ordered to evacuate.
- Need for RIT to be constantly aware of the entire scene until everyone is out.
- Don't underestimate the potential dangers even when conditions are improving.

Report Number: 08-357

Synopsis: Wall collapse traps 2 firefighters.

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.

Report Number: 11-326

Synopsis: Mayday called when FF falls into basement at church fire.

Event Description: While operating at a working structure, a firefighter fell through the floor into the basement and declared a Mayday. The structure was a large old church with an addition. Initial crews found smoke hanging in the area and were unable to determine exactly where it was coming from. Crews later noted more pressurized smoke coming from the gable vents, but this did not result in a change of tactics.

Crews were making an offensive attack on what they thought was a small fire, but actually the fire was much larger and had progressed into the structural members of the fire building. Crews were not making progress but were still performing interior operations after 19 minutes on-scene when the Mayday occurred. Command had not established a RIT prior to the Mayday and had all crews on scene assigned to interior operations. Not all crews were inside at the time of the Mayday, some were doing other, self-directed tasks. Fortunately the basement was not fully involved, but conditions were limited visibility and low heat.

The crew of the firefighter involved in the Mayday asked for help to meet them at the point of entry, but efforts were not coordinated and no crew responded to assist. The crew entered the basement and located the firefighter without assistance. The firefighter was not injured and was able to follow crew members out of the structure.

Lessons Learned: Any amount of smoke visible from the exterior of a large structure is significant. The lack of implementation of strong ICS led to lack of coordinated efforts and self-directed actions, and a lack of RIT in place at time of Mayday (SOG's exist but not followed). There was a lack of communication to Command of interior conditions. Investigation found lack of training in ICS at the Company Officer and Chief level.

Always have firefighter rehab services in place at all working fires.

Report Number: 09-032

Synopsis: Single Company responds to working fire.

Event Description: We responded to a working structure fire with a single engine and a crew of four (captain, engineer and two firefighters). The temperature was 85 degrees with no wind. Exterior fire

extended into attic space. Firefighters went to the roof and ventilated. A captain went interior to check and pull ceiling in order to extinguish the fire. Air packs were on but we were not breathing air. Thirty-five minutes into the fire, the captain went down. Cause was determined to be smoke inhalation and exhaustion. He spent three days in the hospital with permanent injury and short term memory loss.

Lessons Learned: 1-Wear and use SCBA in all smoke conditions. Follow SOGs.

2-Rehab decisions change with weather conditions.

3-Ensure adequate staffing. We were a single engine on a structure fire for the first 15 minutes.

Report Number: 10-652

Synopsis: Life threatening problem found during rehab.

Event Description: I was the Instructor in Charge (IIC) of a live fire training class that was being conducted at a facility which has a gas field for scenarios. We were following NFPA 1401 and 1403 for live fire operations for our drills. Prior to having the physical portion of the class we conducted a one hour review of gas fires, attack methods, and safety precautions to be used. Prior to starting the scenario, we began a stringent firefighter vitals screening check in accordance with NFPA 1401 and 1403 for live fire training. After the vitals were taken, we did a walk thru of the area where the operations were being performed and how they would be conducted.

After a successfully first evolution, the second entry team began their evolution. Approximately three minutes in to their evolution, one of the firefighters walked out of the hot zone stating that he did not have a good face mask seal. We started assisting with removing his gear and getting him to sit down in our rehab area. After a couple of minutes, the safety officer asked him how he was feeling. He stated he was ok and said, "I just need to catch my breath." We allowed him to rest for another five minutes while taking his vitals and giving him water. At this point he was acting like any other firefighter would in his position-MACHO. He was telling us he was ok and that he was just tired. However, the rehab sector officer decided that it was more than just being tired and he began following our local firefighter rehab protocol. While taking the firefighter's pulse a second time, he noticed an irregular heart beat which the firefighter said he did not have. At this point the firefighter was still in defiance that there was anything wrong with him. We initiated ALS procedures and put him on an EKG monitor which showed that the firefighter had a heart rate of 120 with over 20 PVCs a minute scattered throughout his EKG. After this was noted, we started to call for a transport unit to take the firefighter to the local hospital for further evaluation.

The firefighter was still in denial and was trying to sign a refusal of care stating that he would go tomorrow and get checked by his primary physician. We stuck to our guns and kept insisting on how serious his condition could be. After another of 15 minutes of arguing, the firefighter went to the hospital via rescue. After one day in the hospital, he had an emergency STENT put into his heart due to severe clogging of his arteries. Without our persistence in making sure that this firefighter got further medical evaluation, he would have had a heart attack and possibly died.

Lessons Learned: The lesson that we learned during this near miss is that firefighter rehab is not just for water and cooling down; it is serious place for looking at vitals and other signs and symptoms. We might discover something that has been missed for years or catch a new onset of something that has just started. The key is rehab should be taken seriously, not only by the people running it, but the

firefighters coming into it. You should have a strong rehab officer that will follow the guidelines and does not care what the firefighter is trying to say to get out of rehab. Firefighters in rehab should make sure to get their vitals taken in a timely manner and speak up if they feel something out of the ordinary. This could save their life.

Report Number: 10-922

Synopsis: Medical emergency occurs during training.

Event Description: District members were conducting scheduled live fire training operations at a metal burn building familiar to the majority of the members of the District. Operations were being conducted on floors one through five and in three burn rooms. Only one fire was ignited at one given time. During training evolutions, the weather was clear and dry with varying winds. Temperatures were in the low to mid 90s. There were 10 instructors/safety officers scheduled for the training sessions due to high heat indexes, and implementation of district firefighter rehabilitation standard operating guidelines. During the course of the three hour session, firefighters and instructors attending the training were cycled through rehab immediately after each live fire evolution. Instructors were given varying assignments in order to insure that they were in and out of rehab at different times, thus allowing efficient use of instructors.

Immediately preceding the final evolution, instructor 10, who at that point had yet to enter the training structure, was assigned to assist another instructor with breaking down a standpipe connection from the third floor. The two instructors cleared the building and returned outside. Instructor 10's SCBA was at approximately 4000 psi on a 4500 psi bottle upon completing his initial assignment. Instructor 10 was requested to return to the structure to help set-up for the final evolution. At that time, instructor 10 advised the lead instructor that he was not feeling well. The lead instructor advised him to go to rehab and another instructor was assigned to assist him getting to rehab.

When instructor 10 reached rehab, approximately 75 feet from the training structure he was alert and oriented. Within three minutes of his arrival to rehab, he passed out and had an apparent seizure. Medical attention by a paramedic ambulance crew and EMT firefighters was initiated immediately. Upon moving instructor 10 to the back of the on scene ambulance, he became alert and oriented. The ambulance transported him to a local hospital non-emergency. He was later released from the hospital and cleared for duty. The cause of the episode was unknown.

Lessons Learned: While conducting operations, whether training or true emergencies, it is imperative that rehab is established and members are monitored for effects of heat and cold. Physical conditioning programs for district members should be in place and members should be involved in ongoing health and fitness monitoring at least on an annual basis. While conducting live fire training operations or any prolonged operations in harsh environmental conditions, assign a paramedic ambulance to rehab to assist with firefighter evaluation and medical attention.