



## National Fire Fighter Near-Miss Reporting System

### Safety, Health and Survival Week 2008 *Committed to Long Term Results*

2008 Key Area: Fully implement NFPA 1500, especially sections addressing PPE:

- a. Provide compliant PPE
- b. Train and enforce use of PPE, including respiratory protection

*(You may also search for these and other Near-Miss reports online at [www.firefighternearmiss.com/nmrs-query/Query.htm](http://www.firefighternearmiss.com/nmrs-query/Query.htm))*

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**Report Number:** 07-0000964

Report Date: 06/18/2007 1532

### **Demographics**

Department type: Volunteer

Job or rank: Safety Officer

Department shift: Other: Volunteer On Call

Age: 34 - 42

Years of fire service experience: 14 - 16

Region: FEMA Region III

Service Area: Suburban

### **Event Information**

Event type: Training activities: formal training classes, in-station drills, multi-company drills, etc.

Event date and time: 05/22/2007 2100

Hours into the shift: Volunteer

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

Do you think this will happen again? Yes

What do you believe caused the event?

Individual Action

Equipment

Procedure

Training Issue

SOP / SOG

What do you believe is the loss potential?

Lost time injury

Minor injury

### **Event Description**

During the final evolution of evening vehicle rescue training, the assistant chief conducting the training was standing approximately 15 feet away from firefighters using spreaders to pop a door on an overturned vehicle. The door popped and a large bolt flew into the face of the officer hitting him square in the safety glasses. Luckily, he had proper eye protection on, which probably saved his eye. During the wrap up from the class, he pulled out the bolt and explained what had happened to those who had not been watching the evolution. He also stressed the importance of wearing good eye protection and PPE at all times.

### **Lessons Learned**

The lesson learned was that wearing eye protection at all times, even when wrapping up at the end of training, is extremely important. Always be aware of your surroundings and keep alert. It was a particularly hot evening and several of the firefighters had started to break down equipment and take off their gear. This officer was diligent in

keeping on his full PPE, and it probably saved him his sight. Be diligent, be aware, and wear your PPE all the time. Safety is #1.

**Report Number:** 05-0000054

Report Date: 05/27/2005 1410

### **Demographics**

Department type: Combination, Mostly paid

Job or rank: Battalion Chief / District Chief

Department shift: 24 hours on - 48 hours off

Age: 34 - 42

Years of fire service experience: 11 - 13

Region: FEMA Region VI

Service Area: Rural

### **Event Information**

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

Event date and time: 03/19/2005 1619

Hours into the shift: 9 - 12

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

Do you think this will happen again? Yes

What do you believe caused the event?

Situational Awareness

Protocol

Command

Control and Accountability

What do you believe is the loss potential?

Environmental

Property damage

Unknown

### **Event Description**

Single family residential fire. All wood structure. Interior fire of unknown location. Significant smoke only coming from front door. Entry made with 1 3/4" attack line through front door into heavy smoke conditions. Unable to see floor so crawled on hands and knees with hoseline. Floor about six feet inside house gave way and the firefighter on the nozzle fell through floor stopped only by his SCBA bottle. Fire was located in old basement below this new hole. Flames surrounded the firefighter on the nozzle. Back up firefighter pulled firefighter on the nozzle from hole. No injuries sustained. PPE condemned.

### **Lessons Learned**

Proper PPE will work when worn. Always crawl when you can't see your feet. All efforts should be made to know location of fire prior to entry. Ventilation before entry if possible.

**Report Number:** 05-0000578

Report Date: 10/15/2005 0041

### **Demographics**

Department type: Paid Municipal

Job or rank: Fire Fighter

Department shift: Other

Age: 34 - 42

Years of fire service experience: 17 - 20

Region: FEMA Region IX

Service Area: Suburban

### **Event Information**

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

Event date and time: 10/14/2005 2000

Hours into the shift: 9 - 12

Event participation: Involved in the event

Do you think this will happen again? Yes

What do you believe caused the event?

Training Issue

Other

Individual Action

What do you believe is the loss potential?

Minor injury

Lost time injury

### **Event Description**

While extinguishing a vehicle fire, fire fighter opened driver door and started to reach for the hood release knob under the dash. Fire fighter was wearing full turnouts and helmet, but not an SCBA or face mask. Just as fire fighter was reaching for the knob, the inside of the vehicle flashed, causing the fire fighter to back away from the vehicle. The engine compartment of the vehicle was fully involved with fire, and the passenger compartment was not. The fire fighter did not see any flames in the passenger area of the vehicle, and thus felt safe to reach into the area to release the hood latch. This incident reminded me of the importance using all of our PPE's, including SCBA and facemask, on vehicle fires. The flashover of the vehicle compartment had the potential of injuring the fire fighter.

### **Lessons Learned**

Always wear all PPE's, including SCBA and mask on all vehicle fires. Personnel without proper PPE's should not enter the operational area.

**Report Number:** 06-0000538

Report Date: 10/28/2006 1753

### **Demographics**

Department type: Combination, Mostly volunteer

Job or rank: Fire Chief

Department shift: Respond from home

Age: 43 - 51

Years of fire service experience: 21 - 23

Region: FEMA Region IV

Service Area: Rural

### **Event Information**

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

Event date and time: 10/13/2006 0035

Hours into the shift: 0 - 4

Event participation: Involved in the event

Do you think this will happen again? Yes

What do you believe caused the event?

Protocol

Situational Awareness

What do you believe is the loss potential?

Life threatening injury

### **Event Description**

We responded to a report of a utility shed fire behind a residence. Upon arrival, we found a 16 x 40 wood frame utility barn/building with heavy fire conditions showing from the back half of the building with roof vented from fire. Walls were intact, with fire coming from a B side window and D side door. An exposure of a residential structure was on the A & D sides and an in-ground swimming pool was on the immediate C side of the fire building. Upon a forward lay of a supply line (1) 2 inch attack line with smooth bore nozzle was advanced for direct attack from the exterior B side and a 1 3/4 attack line with fog nozzle was advanced for exposure protection on the A D corner of the fire building and B C corner of the residential structure. The B side of the fire building was the only area easily accessible for attack due to the swimming pool and fencing. During the attack from an exterior window on the B side, a firefighter performing the exterior attack was knocked to the ground due to an explosion with fire ball just inside the area of attack. The firefighter was using a smooth bore nozzle during the attack and was in full PPE including SCBA. The fire ball made contact with his shoulder and face area. Upon extinguishment of the fire, we learned that the cause of the explosion was a propane tank BLEVE. Our firefighter suffered no injury due to proper use of PPE. During our critique, the firefighter recommended we make a policy of not only full PPE on exterior fire attack but require PPE with SCBA. Had it not been for the SCBA he would have had facial burns.

## **Lessons Learned**

Do not take for granted that a shed, barn, or small work shop is any less dangerous than a residential or commercial building fire. People store stuff in their utility building they feel is not safe to store in their home. Propane cylinders, gasoline, pool chemicals, etc. We have decided to consider utility building fires as a high risk event due to content. Attack lines should be fog pattern for close exposure to the fire area and when smooth bores need to be used give some distance and allow the reach and penetration of the solid stream do the job.

**Report Number:** 07-0000713

Report Date: 01/31/2007 0920

### **Demographics**

Department type: Combination, Mostly paid

Job or rank: Battalion Chief / District Chief

Department shift: 24 hours on - 48 hours off

Age: 43 - 51

Years of fire service experience: 27 - 30

Region: FEMA Region III

Service Area: Suburban

### **Event Information**

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

Event date and time: 12/29/2006 1700

Hours into the shift: 9 - 12

Event participation: Involved in the event

Do you think this will happen again? Yes

What do you believe caused the event?

Situational Awareness

SOP / SOG

Decision Making

Teamwork

What do you believe is the loss potential?

Property damage

Life threatening injury

### **Event Description**

Units responded for a report of a structure fire; fire reported in an attached garage under renovation. Upon arrival of the first unit, there was heavy fire in the garage, with extension to the house. The first arriving unit reported propane tanks involved and on fire. Within the first 5 minutes of units arriving and operating on the scene, there were 3 large explosions, each involving a 100 lb. Propane cylinder. Units arrived out of their assigned running order, and jumped positions from the SOPs. This included the fourth due engine arriving and taking the second due engine's water supply responsibilities, and both trucks arriving late due to getting lost. In addition, there was a face-to-face miscommunication between the driver of the fourth due engine and the officer, who was detailed in from another station. This resulted in a several minute delay in the establishment of a sustained water supply for the first due engine. Initial actions were focused on ensuring evacuation of the houses on exposures B and D, and then defensive operations. The three explosions occurred while personnel were engaged in these activities. The explosions were powerful enough to knock several firefighters down, but due to their wearing PPE and not being in immediate proximity, there were no injuries.

## **Lessons Learned**

**Situational Awareness:** The calling party reported to the 911 operator that there were propane tanks involved in the area of the fire. This information was never relayed to responding units. **Teamwork:** The driver and officer on the 4th due engine did not communicate effectively. According to our SOPs, the first responsibility of the second and fourth due engines is to "Ensure and expand upon the water supply as necessary for the first (or third) due engine. In this case, the officer gave instructions which were either not heard correctly or were misinterpreted by the driver/operator, the officer and the firefighter abandoned the apparatus driver/operator and went up to the fire, leaving the driver/operator to complete a labor-intensive water supply operation by himself. Especially when pairing personnel who are not used to working with each other (the officer was detailed in on overtime) it is imperative that two-way communications techniques be used to ensure that messages are understood and followed correctly. **Area Knowledge:** Unit officers and apparatus drivers must have greater familiarization with their response areas, not limited to just their "first due" area. They must also be able to get to any location from different directions of travel. Enhanced GPS mapping capabilities would be a welcomed addition to all responding apparatus. **Standard Operating Procedures:** Units must know and follow their SOPs. It is extremely difficult for units and personnel to readjust to last-second changes in assignments. **Communications:** When units will be delayed, they must notify the Incident Commander, so that consideration of the delays can be made, and adjustments made as necessary. **Protective Clothing:** Again, the importance of properly wearing all appropriate PPE is a lesson learned. The force of the explosions might well have caused serious injuries had personnel not been properly protected.

**Report Number:** 06-0000044

Report Date: 01/29/2006 0241

### **Demographics**

Department type: Volunteer

Job or rank: Captain

Department shift: Respond from home

Age: 25 - 33

Years of fire service experience: 7 - 10

Region: FEMA Region IV

Service Area: Rural

### **Event Information**

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

Event date and time: 01/27/2006 1300

Hours into the shift:

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

Do you think this will happen again? Yes

What do you believe caused the event?

Situational Awareness

What do you believe is the loss potential?

Lost time injury

Life threatening injury

### **Event Description**

Members of the department were working to extinguish a fully involved front-end loader fire. While operating in close proximity of the vehicle an oil line busted spraying 2 firefighters with hot oil. Both firefighters were in full turnout gear including SCBA. The oil sprayed both firefighters from head to toe. All PPE was grossly contaminated with oil. Had either of the 2 firefighters been missing any PPE they likely would have sustained at least minor burns but it likely would have been severe. As far as contributing factors, I am not aware of the complete circumstances surrounding the incident, however after inspecting the turnout gear worn by the firefighters felt that it should be reported.

### **Lessons Learned**

Wear full PPE at any fire incident regardless of the type of and size of the fire. Also, remain aware of what you are dealing with at all times while you are working on scenes.

**Report Number:** 05-0000568  
**Report Date:** 10/07/2005 1943

### **Demographics**

Department type: Paid Municipal  
Job or rank: Captain  
Department shift: 24 hours on - 24 hours off  
Age: 43 - 51  
Years of fire service experience: 24 - 26  
Region: FEMA Region V  
Service Area: Urban

### **Event Information**

Event type: Fire emergency event: structure fire, vehicle fire, wildland fire, etc.  
Event date and time: 09/17/2005 1429  
Hours into the shift: 5 - 8  
Event participation: Involved in the event  
Do you think this will happen again? Uncertain  
What do you believe caused the event?

Situational Awareness

What do you believe is the loss potential?

Lost time injury  
Life threatening injury

### **Event Description**

My engine company was first due at a fire in a building where drill bits are manufactured. Heavy smoke on arrival and employees told us there was fire on the mezzanine level. I did not order a line stretched because I wanted to find out what was burning before applying water. While trying to find access to the mezzanine, there was none. I was just about to call for a ladder, when an explosion occurred and a large piece of pollution control equipment came crashing to the floor. It was about 8'x6'x4', weighed about 1 ton, and was burning fiercely. It hit one of my firefighters on the way down but it was a glancing blow because it came down at an angle. My other firefighter was behind him when it fell and was able to pull him out from under the equipment. I was separated from my 2 firefighters by the fallen equipment and the last thing I saw before it stopped was one of my firefighters lying face down on the floor. I couldn't reach him from my side. The equipment was wedged between a wall, and drill making machinery. I called a MAYDAY and the RIT arrived about a minute later. The firefighter had all PPE properly worn. His only physical injury was to his right knee. He was able to make it out of the building on his own with my other firefighter assisting. He was sent to the hospital for tests and then sent home for the rest of the shift.

### **Lessons Learned**

Our department does not have a formal commercial inspection program anymore. It is left to company officers to inspect any occupancy he/she deems hazardous. While it would be nearly impossible to recognize every possible hazard, the companies could ascertain the main hazards and the layout of said buildings. I used to inspect a lot more than I do now and this is not a forum for discussing why, but this close call reinforces the fact that hazards don't go away, and shows that the old saw "what you don't know won't hurt you" is utterly false in our line of work. It also reinforces the need for wearing full PPE properly, and the need for staffing all companies with at least 4 people.

**Report Number:** 07-0001000

Report Date: 07/23/2007 1033

### **Demographics**

Department type: Combination, Mostly paid

Job or rank: Lieutenant

Department shift: 24 hours on - 48 hours off

Age: 25 - 33

Years of fire service experience: 14 - 16

Region: FEMA Region III

Service Area: Suburban

### **Event Information**

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

Event date and time: 06/29/2007 1600

Hours into the shift:

Event participation: Involved in the event

Do you think this will happen again?

What do you believe caused the event?

Equipment

What do you believe is the loss potential?

Lost time injury

### **Event Description**

While operating on a personal injury collision with entrapment, one of the firefighters assigned to the extrication effort was using the small cutter of a high pressure hydraulic system to cut the hinges of the entrapped driver's door. He was wearing full PPE with eye protection in place and extrication style gloves on. While the firefighter was attempting to cut the top hinge a loud pop was heard, followed by a large spray of hydraulic fluid (in this case mineral oil) issuing from the tool. The spray struck the firefighter directly in the hand that was operating the tool. The firefighter immediately dropped the tool and stepped back, holding his struck hand in the other. He removed his glove to find the fluid had penetrated through his glove, but there appeared to be no penetration of the fluid into his skin. The firefighter was sent to the hospital for evaluation and found to have no injuries. The firefighter stated after the event that the force of the spray was so powerful that he initially thought it had cut his fingers off. Further investigation of the tool found that the body of the tool that houses the piston had completely cracked, resulting in the spray of fluid.

### **Lessons Learned**

There were no warning signs that the tool was about to fail, the firefighters use of proper PPE may have been the only thing that saved him from a serious hydraulic injection injury.

**Report Number:** 07-0000726

Report Date: 02/13/2007 0420

### **Demographics**

Department type: Paid Municipal

Job or rank: Fire Fighter

Department shift: 24 hours on - 48 hours off

Age: 25 - 33

Years of fire service experience: 14 - 16

Region: FEMA Region IV

Service Area: Urban

### **Event Information**

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

Event date and time: 01/13/2007 2245

Hours into the shift: 17 - 20

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

Do you think this will happen again? Yes

What do you believe caused the event?

Decision Making

Task Allocation

Situational Awareness

What do you believe is the loss potential?

Life threatening injury

### **Event Description**

We were involved in fire suppression activities on a working attic fire at a church. Company crew members were attempting to perform a trench cut to ventilate and confine the fire to an area adjacent to the fire wall. Upon laddering the roof, and while crew members were still operating on and from the aerial apparatus, a sudden collapse of the truss roof occurred, endangering the crew due to fire and radiant heat. The collapse involved approximately 40 ft. of the roof line and a fire ball extended upward approximately 30 ft. in the air. The ventilation crew had to make an immediate descent down the aerial to escape harm. The collapse occurred about 10 minutes after arrival of first in companies. All firefighters involved were in full PPE and SCBA. Awareness of wood truss construction must always be considered during fire suppression activities.

### **Lessons Learned**

Fire ground accountability, awareness of wood truss construction, the fires impact due to direct impingement, and the duration of the fire must always be considered during fire suppression activities. Had the crew actually been actively ventilating or on the roof, there would have been serious injuries and most likely firefighter fatalities. Awareness training for wood truss construction should be included in any ventilation and structural fire suppression training. Command and control, fire ground accountability and fire

ground safety officer training should also be included. We must always keep in mind that the fire ground is a dynamic, ever-changing scene and we must adapt to those conditions and stay aware. Remember; no structure is worth our lives. Everyone goes home.

**Report Number:** 05-0000339

Report Date: 07/08/2005 2056

### **Demographics**

Department type: Paid Municipal

Job or rank: Fire Fighter

Department shift: 24 hours on - 48 hours off

Age: 25 - 33

Years of fire service experience: 7 - 10

Region: FEMA Region V

Service Area: Urban

### **Event Information**

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

Event date and time: 03/01/2003 0300

Hours into the shift: 17 - 20

Event participation: Involved in the event

Do you think this will happen again? Uncertain

What do you believe caused the event?

Situational Awareness

What do you believe is the loss potential?

Other

### **Event Description**

I was on an engine crew performing a search for hidden fire in knee walls on a second story house. Our truck crew was on the roof performing vertical ventilation procedures. I heard the truck crew above us using a chain saw. Visibility in the house was extremely low. Due to the style of the house, the ceiling of the room that we were in was pitched. Where we were standing the ceiling was approximately 1 to 2 feet above our heads. While I was removing the wall exposing the hidden fire, I felt a quick jerk to my helmet. I immediately dropped completely to my knees. When I looked up to see what had hit my head, I noticed that the chain saw blade was through the ceiling. The truck crew was directly above us completing their ventilation procedure. I was lucky enough to be with crew members who reacted very quickly. My officer and another crewmate grabbed me because they thought I had fallen through a hole in the floor. We exited the structure and I noticed that I had a mark on my helmet, but it was still intact. When I talked to the truck crew members, they were unaware of anything that had happened. They were not far from the peak of the roof. After going back to look, I was hit when they were making the bottom cut of their vent hole.

### **Lessons Learned**

Lessons that were learned include: 1. Always ensure that your proper PPE is worn. 2. Chin straps do keep helmets on heads. 3. Both crews involved were doing the allocated task assigned to them and doing it correctly. However, we need to be aware of the type

of structure that we are in and where crews could possibly be located both in and out. 4. Be aware of what crew members that you are with are doing because you never know when something might happen where you need to react quickly in their assistance.

**Report Number:** 06-0000586

Report Date: 11/29/2006 0119

### **Demographics**

Department type: Combination, Mostly paid

Job or rank: Fire Fighter

Department shift: 24 hours on - 48 hours off

Age: 25 - 33

Years of fire service experience: 7 - 10

Region: FEMA Region IV

Service Area: Suburban

### **Event Information**

Event type: Training activities: formal training classes, in-station drills, multi-company drills, etc.

Event date and time: 06/01/1999 0000

Hours into the shift:

Event participation: Involved in the event

Do you think this will happen again? Yes

What do you believe caused the event?

Situational Awareness

Training Issue

Command

Accountability

Human Error

What do you believe is the loss potential?

Life threatening injury

Lost time injury

### **Event Description**

The following event took place following a ten week recruit training class. I had just entered the fire service and had just completed ten weeks of recruit training at our fire academy. The instructors had attained an abandoned residential structure to perform a live burn. The house was a one story, approx. 1500 sq. ft. building. Almost all of the windows had been removed. The class of about twenty, all dressed in full PPE huddled in the two front rooms of the house. The instructors lit a fire in the rear hallway with some hay and a gasoline/diesel fuel mix. The instructors regrouped with the class in the front of the house and were explaining that the purpose of the drill was to witness thermal layering and possibly some rollover. While they were explaining what to look for, they were donning their PPE. At this point the smoke is filling the house at a rather fast pace and dropping to the floor. As the front two rooms begin to fill with smoke the instructors notice that the fire is rolling down the hall, also at a fast pace. The instructors verbally order everyone out of the structure and the evacuation begins. Forced to the floor by the intensifying heat, we all get bunched up at the exit. I was

about twenty feet away from the exit when the top half of the room started to flashover. Luckily, about six of us, including the instructor, found one of the open windows and bailed out face first just before the entire room became engulfed in fire. Everyone made it out, but the instructor received a few second degree burns to his hands and ears due to the fact that he did not have his full PPE on before he lit the fire. Looking back now, I can think of least a dozen things that were done wrong in this drill, but at the time we had put our inexperienced lives in the hands of the "experienced" instructors.

### **Lessons Learned**

As a recruit, I learned the hard way that fire is, at times, unpredictable. But most importantly, the position of "instructor" is not one that should be taken lightly. Someone could have very easily been killed that day, and it would have been on the hands of the instructor. Also, preparation is key when performing "live burns". Make sure all safety concerns are addressed prior to lighting it off. [Reviewer added] Make sure all NFPA guidelines are followed at live burns and everyone's (instructors included) PPE is fully donned prior to ignition.

**Report Number:** 07-0000960

**Report Date:** 06/14/2007 1603

### **Demographics**

Department type: Combination, Mostly volunteer

Job or rank: Fire Fighter

Department shift: 24 hours on - 48 hours off

Age: 34 - 42

Years of fire service experience:

Region: FEMA Region V

Service Area: Urban

### **Event Information**

Event type: Training activities: formal training classes, in-station drills, multi-company drills, etc.

Event date and time: 12/16/2006 0000

Hours into the shift:

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

Do you think this will happen again?

What do you believe caused the event?

Decision Making

Accountability

Weather

Communication

Procedure

What do you believe is the loss potential?

Lost time injury

Life threatening injury

### **Event Description**

Training began at approximately 0720 hours with a briefing conducted at the station in which all members participating were given an orientation in the classroom of the schedule, assignments and objectives for the training session. A diagram was produced on the dry erase board of the incident area sketch. Eight companies were assigned with inside safety crews and 3 stokers were used for prop setting and fire growth monitoring. All stokers were given instructions not to deviate from fuel load sets. Evacuation signal and PAR procedures were reviewed along with floor plan, MAYDAY radio call, all training objectives and safety line placement was discussed. At the training site, the lead instructor and inside safety crews completed a walk through of the site reviewing fire set locations and ventilation cutaways. All NFPA 1403 compliant devices were reviewed and identified (egress points, vent holes, etc.). All lines were laid out, PPE was checked, and roll call of all companies was taken prior to the first evolution. Three burns had taken place prior to the incident burn. Burn 4 began with the fire on the front porch in Division A. Fire was ignited by stokers and allowed to begin free burning. Fire set was 4

wood pallets, straw and a combustible finish of wood paneling was present to approximately 3' level around the inside of the room. During free burn, the windows on Division A/B began to fail. The inside safety crew (Firefighters A & B) along with three stokers were located on the first floor of the fire building. Firefighter A & B proceeded to the 2nd floor to assume a safety position and assist in watching crews working on 2nd floor. The attack team mounted the attack approximately 8 minutes after fire ignition and had trouble with a kinked line, which slowed the attack. The stoker line was charged and positioned into the fire floor through Division C. The line was not staffed by firefighter A, firefighter B or any of the stokers. Conditions deteriorated rapidly both visibly and with heat build up. Fire began to lap out of windows on Division A extending to the soffits of the house. At approximately 1056, a radio report was heard that firefighters A & B were in trouble and a ladder was requested to the 2nd floor at Division D. At this time, 4 safety personnel, 3 stokers and a 4 person attack team were in the structure. A stand by RIT took Division A's back-up line and knocked the fire down on the main floor while other outside crews placed a second 16' ladder to the window where firefighter B was signaling for help. Dense black smoke was igniting and surrounded him. The ladder did not reach the sill of the window and instead was hooked with the ladders hooks to the sill creating an almost vertical placement. Firefighter B was able to bail out. Firefighter A came to the window with extreme deteriorating conditions of fire and superheated smoke over his head. Firefighter A escaped the 2nd floor in similar fashion as Firefighter B. During Firefighter A's escape, he lost contact with the ladder and fell to the ground striking a rescuer who broke Firefighter A's fall and both landed on the ground. A PAR check was initiated of all crews and all personnel were accounted for. Firefighter B suffered minor injuries from the bail. Firefighter A received burns over an undetermined percentage of his body. His burns included ears, neck, cheek, hand area and steam burns to his back and arms. Firefighter A refused treatment at the scene by paramedics but was later transported by his Fire Chief to a local emergency room for evaluation. Upon evaluation of the burns to Firefighter A, was transferred to a burn unit in a nearby major city. The firefighter who was attempting to rescue Firefighter A when he fell, suffered a minor neck injury and back pain that cause one day of lost time. Firefighter A remained in the burn unit for approximately 5 days and was off work for several weeks.

### **Lessons Learned**

An independent investigation was launched into this incident as directed by the hosting department Chief. Investigators were used from nearby training academy and all had experience investigating training injury incidents. The independent investigation made the following recommendations. 1. All participants must wear NFPA approved structure firefighter gear. The firefighter who received burns used an older rubberized set of gear and from burns and self admission, did not use a flash hood or the hood provided on the helmet. 2. All combustible interior wall finishing must be removed. One combustible panel was left in place and possibly increased fuel load. 3. Assure all paths of egress are maintained and protected. If training is taking place on upper floors, assure that proper size ladders are in place on all sides where egress may become necessary. 4. Ignition and interior safety teams should be limited to two personnel. Keeping safety teams interior from incipient stage through extinguishment should be carefully considered for each evolution. Every interior safety team shall have the protection of a hose line capable of

delivering a minimum of 95 GPM. 5. Prior to the start of each evolution, recheck all components of the drill using a safety officer checklist. This includes but is not limited to radio checks, water supply, fire streams and hose lines match the required fire flow for the evolution. 6. Constantly monitor weather conditions and if necessary suspend the training until favorable weather conditions exist. This includes changing wind conditions. During this training evolution, the wind increased significantly during the 4th (incident) burn. 7. Follow all components of NFPA 1403 when conducting live fire training. Continue to utilize the standards in the development of live fire training in the form of checklists and templates. Have a minimum of three separate people go through the checklist to make sure something was not missed and that all three agree that the 1403 topics have all been addressed. 8. Require all participants to sign an agreement that they will not refuse medical treatment and transport to the hospital if they are injured or possibly injured or directed by the host department and/or chief officer on the scene. 9. PPE must be NFPA approved and 3/4 boots and rubberized coats are not permitted. PPE must be worn in accordance with its designed use and inspected prior to each evolution by a safety person. This includes instructors, safety, stokers, and participants. 10. Guests participating in the training must have a signed permission slip from their Fire Chief granting permission to participate in the training. 11. Maintain a minimum of five hose lines; attack, back-up for attack, stoker line, safety line and an outside 2 1/2" line. 12. Designate radio frequencies and assign a designated person whose job is to do nothing but monitor working frequencies in a quiet, secluded location where MAYDAY and emergency traffic can be immediately recognized. 13. Consider creating safe haven rooms where crews can go for protection in critical unplanned situations.

**Report Number:** 07-0001186

Report Date: 12/30/2007 1713

### **Demographics**

Department type: Volunteer

Job or rank: Assistant Chief

Department shift: Respond from home

Age: 43 - 51

Years of fire service experience: 14 - 16

Region: FEMA Region IV

Service Area: Rural

### **Event Information**

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

Event date and time: 10/13/2007 1400

Hours into the shift:

Event participation: Involved in the event

Do you think this will happen again?

What do you believe caused the event?

Situational Awareness

Decision Making

Weather

Staffing

Procedure

What do you believe is the loss potential?

Lost time injury

Property damage

Life threatening injury

### **Event Description**

Our department received a call to respond to a structure fire (barn) and surrounding grass fire. The fire started from a camp fire that was not fully extinguished from the night before and spread next day to the barn. The owner of the property (who had the campfire), was cited for having a fire without a permit. Our state was under a burn ban due to the severe dry/drought conditions. The first arriving pumper and brush truck unit staged and parked as normal. It took a while for firefighters to arrive on the scene. As pumper operator, I pulled and stretched the preconnected handlines preparing for arriving of firefighters. Upon arrival, a small section of the barn around a large doorway showed fire. In just a matter of one minute, the entire barn was totally engulfed. Surrounding temperatures spiked quickly. All responders in the immediate area left their work station or fire apparatus vehicles and fled on foot away from the heat. The pumper was left unattended for a few moments. I had to make a decision to either go move the pumper or let it potentially burn up. It was a three year old \$200,000 pumper. I decided to go move the pumper. As pump operator, I did NOT HAVE ANY PPE on. I

knew better. Usually, I have been the promoter of 100% compliance with wearing turnouts in our department. My turnouts were in a back compartment on the pumper. When I ran up to the pumper to move it, the driver's seat was smoking. In the time it took to disengage the handline valves, shut down the water supply, disengage the pump, and put the vehicle in reverse, I received third degree burns to my left arm. I also received second degree burns to my neck and left abdomen. There was a small period of time when I received the burns and the pain started kicking in. Even the on site EMS personnel did not react to the blisters showing on my arm. I had to transfer incident command and hail a neighbors help to drive me to the hospital. Once at the hospital, it did not take them but a second to notice severe trouble. I was given good emergency treatment at the local hospital and immediately transferred by ambulance to our closest burn center fifty miles away. I spent one day in the burn centers ICU and six more days as a patient. I had full thickness third degree burns to my arm, requiring full thickness skin grafting from my shoulder to my wrist. This all could have been averted by having full PPE on. Having a burn is no fun. It was hard on my entire family throughout my medical treatment that is still ongoing.

### **Lessons Learned**

Continue size up all the time while on the scene. Make sure fire apparatus is positioned as needed. Everyone on the fireground should have PPE on. Do not begin fire suppression activities until properly trained and ensure firefighters don proper PPE.

**Report Number:** 08-0000133

**Report Date:** 03/07/2008 1733

### **Demographics**

Department type: Paid Municipal

Job or rank: Lieutenant

Department shift: 24 hours on - 72 hours off

Age: 43 - 51

Years of fire service experience: 21 - 23

Region: FEMA Region II

Service Area: Urban

### **Event Information**

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

Event date and time: 03/01/2008 0000

Hours into the shift:

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

Do you think this will happen again?

What do you believe caused the event?

What do you believe is the loss potential?

### **Event Description**

Several members received severe burn injuries to their hands during firefighting operations. Some members reported removing their gloves in reaction to being exposed to severe fire conditions. Other members never donned their gloves. These members received severe burns to their hands that required lengthy hospitalization. Some members required skin grafts followed by a long period of rehabilitation.

### **Lessons Learned**

1. Wearing approved Department issued firefighting gloves reduces the chance of receiving burns to your hands and protects the hands from other injury. 2. It is no longer an acceptable policy to remove your glove to feel for heat during firefighting operations. 3. Members should not remove any piece of the protective ensemble to operate, manipulate, or handle equipment. 4. These injuries occurred because the gloves were not utilized properly, not because the gloves were defective. 5. When a member receives burns to their hands, they are not only in extreme pain but become helpless and need assistance in completing some basic bodily functions. 6. Members who have recovered from burn injuries have stated that it was a very painful, degrading process that added unnecessary strain and hardship on their families - mentally, physically, and financially. 7. It is senseless to remove any PPE when you need it the most during fire operations. Practice operating all of your equipment with your gloves on. 8. Wear your protective gear and utilize it properly during operations to reduce the risk of being burned or injured. This is something that you, the individual can control.