



National Fire Fighter Near-Miss Reporting System Reports Related to Foam Reports

Report #	Synopsis	Page #
06-183	Water applied to hot tarpot results in "volcanic type" eruption.	2-3
06-301	Observation of a truck officer at a five alarm fire.	4-5
07-709	Firefighter descends a ladder and falls into swimming pool.	6-7
07-1008	Live wire missed on auto accident size up.	8-11
08-074	Flashovers can occur in cargo trailers.	12

Report Number: 06-183

Report Date: 03/24/2006 1536

Demographics

Department type: Paid Municipal

Job or rank: Captain

Department shift: 24 hours on - 48 hours off

Age: 43 - 51

Years of fire service experience: 0 - 3

Region: FEMA Region IV

Service Area: Suburban

Event Information

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

Event date and time: 07/16/2005 0810

Hours into the shift: 0 - 4

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

Weather at time of event:

Do you think this will happen again? Uncertain

What were the contributing factors?

- Communication
- Human Error
- Decision Making
- Situational Awareness
- Training Issue

What do you believe is the loss potential?

- Life threatening injury

Event Description

On July 16, 2005, Quint (number deleted), Engine (number deleted), Medic (number deleted), Engine (number deleted), and Truck (number deleted) were dispatched to a "commercial fire" at (address deleted). Battalion (number deleted), 20+ year's experience, and Car X (number deleted), EMS Captain, 15+ year's experience, also responded. An update from 911 Communications advised that the fire was in a "Bobcat" loader that was positioned outside the structure. Battalion (number deleted) cancelled all units except Engine (number deleted).

Quint (number deleted)'s crew consisted of a Pump Operator/Driver, five years experience, firefighter Sergeant, nine years experience, and a firefighter, five months experience. Upon the arrival of this apparatus, the firefighter Sgt. reported a fully involved tar kettle. Car X (number deleted) had also arrived on scene.

The firefighter Sgt. instructed the firefighter to advance the inch and three-quarter pre-connect from the front bumper. The firefighter Sgt. then went to obtain the foam extinguisher. The firefighter applied foam and the majority of the fire was knocked down. The firefighter Sgt. then instructed the firefighter to "cool it down." The

firefighter applied a direct straight stream into the kettle. Car X (number deleted) and firefighter Sgt. both reported a “volcanic-type eruption” accompanied by a “roar,” followed by tar and fire reaching twenty to thirty feet in the air. The gear/body of the firefighter was almost 100% encrusted with tar.

Report Number: 06-301
Report Date: 05/27/2006 2203

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 III
Service Area: Rural

Event Information

Event type: Fire emergency event: structure fire, vehicle fire, wildland fire, etc.
Event date and time: 04/30/2006 0245
Hours into the shift: 0 - 4
Event participation: Involved in the event
Weather at time of event:
Do you think this will happen again?
What were the contributing factors?

- Other
- Command
- Communication
- Decision Making
- Accountability

What do you believe is the loss potential?

- Life threatening injury
- Lost time injury

Event Description

We arrived with a fifth Alarm assignment on a block fire, dispatched for our Truck Co. to assist. We were set up to the rear of the block, with an over kill of apparatus on all sides. Four truck companies and seventeen engine companies for two buildings on fire. There was a condemned aerial ladder working the front, condemned because the ladder dangles about like a fishing pole. All sides, ABCD, had a truck company set up. Our tower alone flowed 380,000 gallons of water. The hydrant system failed. They drove three engine companies into a river to flow water down four Miles of LDH. That's four, one mile lengths of hose. While this was going on, command went to hell. The host company had to give up command, and let the second-in truck company take over. While we were flowing water into a collapsing structure, we had guys laddering the roofs with the most outrageous system of ground ladders. One section went up 36', to a porch roof that was metal, and began to ice up. So they hooked another 24' ladder on the eve spout. THE EVE SPOUT... They laid a 12' ladder diagonally across another roof, put another 36' ladder, not extended-to support their weight, across a gap in the buildings, and put a 24' ladder onto the roof of the collapsing building to "vent it". We had four (deleted) truck companies there, maybe there was a reason we weren't venting, eh? The roof was ONLY a 4" slab of rubber, slung over 150 y/o rafters. That was it. It was so soft; it just slid down, taking

the rear third floor wall with it. At this point, they went back to their first roof, and left one ladder to fall in as the roof collapsed. So next, they start pulling 1 1/2" lines up these ground ladders, and spraying water over the second building, into the first. Of course, they knock the walls out, which fall onto the LDH manifold for two truck companies, and it crushes three huge propane tanks. So now, we're flowing foam through the pumps to keep these big (deleted) tanks from taking out the whole town. They don't give up, they cut the outer walls off an unburned house, cut a hole in the floor, ladder that, and cut a hole through the fire wall into the second building, and set up a ground monitor and flood it. It wasn't even on fire anymore. A 2.5" team knocked that fire before they even got this latest hair brained idea. All the while, w/ the smoke, etc. None wearing SCBA; a few don't even have full TOG, just coats and helmets. One slips on the 25' roof, falls on the ice, and almost flies off the roof. The eye gives way and falls off, and down goes the ladder, breaking on the pavement. It was the biggest cluster I've ever seen.

Lessons Learned

What did I learn? Boy am I glad we do training.

Report Number: 07-709

Report Date: 01/27/2007 1408

Demographics

Department type: Paid Municipal

Job or rank: Captain

Department shift: 24 hours on - 48 hours off

Age: 43 - 51

Years of fire service experience: 14 - 16

Region: FEMA Region IX

Service Area: Urban

Event Information

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

Event date and time: 05/15/1999 2200

Hours into the shift: 13 - 16

Event participation: Told to and submitted by safety officer

Weather at time of event: Cloudy and Dry

Do you think this will happen again? Yes

What were the contributing factors?

- Situational Awareness

What do you believe is the loss potential?

- Life threatening injury

Event Description

My crew and I were assigned to make access to the rear of a working house fire in residential neighborhood. The only access to the back was over a wall that was common to a business parking lot. We had taken apart a banger ladder and put one half on each side of the block fence. The back yard appeared fairly narrow from fence line to back of house. This was at approximately 2200 hours so it was quite dark in the back yard. The yard was nearly covered with foam that was being used by engine companies operating on the fire. I climbed the fence ladder and transitioned to the descending ladder on the house side. As I stepped off the ladder to what I assumed was foam covered grass, I fell into the swimming pool in full bunker gear and SCBA. There was a deck around the pool of approximately 24 inches, which abutted the block fence that the ladder had been resting on. Our department had done training years before where we went into a public pool with full turnouts. In the training, we found that air pockets in bunker gear act as buoyancy and allow you to float easily. Also when wearing an SCBA, it is nearly impossible to go under water due to the air in SCBA bottle. Although certainly surprised to find myself in the water I did not panic and was able to fall back on my training and easily remove myself from the water in a shallow area of the pool.

Lessons Learned

It is imperative that when faced with stepping onto ground which you cannot see, sound the area thoroughly before stepping off your ladder, or other equipment. Be sure that someone is watching you when on a ladder, to see that you ascend and

descend safely. Consider lighting to be put in place before operating in dark area.
[Reviewers note] It is very dangerous to enter the water in turn-outs. While there is a small advantage to the initial floatation in the bunkers, it will not last, and it is very hard to swim in waterlogged turn-outs.

Report Number: 07-1008
Report Date: 08/02/2007 1446

Demographics

Department type: Combination, Mostly volunteer
Job or rank: Captain
Department shift: 24 hours on - 48 hours off
Age: 43 - 51
Years of fire service experience: 27 - 30
Region: FEMA Region IV
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: 07/16/2007 2049
Hours into the shift:
Event participation: Involved in the event
Weather at time of event: Clear and Dry
Do you think this will happen again?
What were the contributing factors?

- Communication
- Decision Making
- Situational Awareness
- Procedure

What do you believe is the loss potential?

- Minor injury
- Lost time injury
- Life threatening injury

Event Description

We were dispatched to a motor vehicle accident of a car versus utility pole with persons trapped and the vehicle on fire. The first responding command officer called for the utility company to respond immediately. Upon arrival, we found a utility pole that had been hit low and snapped into two pieces near the base. This was a larger than normal pole in diameter as well as height and it contained more wires than the average pole. We later discovered it contained a transmission wire that powers a large portion of the Metro area as well as other high-voltage wires (7,200 volts). We arrived to find no obvious wire down. We had a vehicle on fire in a field that had gone through a fence. One patient from the vehicle was lying in the field. Our CAD information from our mobile data terminal indicated there were possibly two people in the vehicle that was on fire. The utility pole which was between the roadway and the fence was leaning away from the roadway and toward the fence. Due to the height of the pole and the direction it was leaning, the vehicle on fire and the patient both were underneath the wires. Though none of these wires appeared to be damaged, they nevertheless were of great concern to us.

I was the company officer of the first arriving engine with a crew of four (myself, two firefighters and the apparatus operator). One command officer also arrived with us and a second command officer arrived as we were deploying the attack line. The initial command officer assumed command, appointed me as operations and assigned safety to the second command officer. Command indicated his reasoning for these assignments was so he and the safety officer both would have a "big picture view" leaving me better able to focus on the tasks that needed to be completed with consideration of the potential wire hazards. A Heavy Rescue and another engine would complete our response. However, those units would be staffed by volunteers traveling from their homes to the station and thereafter to the scene with the additional apparatus. Command and safety sized up the potential wire hazards, the leaning pole and the scene in general. Neither officer saw a wire down so it was agreed that it would be appropriate to attack the fire and care for any victims. Our apparatus operator deployed our 200 foot 1" 3/4 bumper line toward the vehicle. One of our firefighters began an initial attack with a dry chemical extinguisher. The second firefighter began extinguishing the fire with the 1" 3/4 and both firefighters checked for victims inside the vehicle. I was delayed in joining them because I did not hear during the initial dispatch that the car was on fire so I had to first don my coat and SCBA prior to joining them. By the time I arrived, they had knocked down the fire in the engine compartment and determined there were no victims still inside the vehicle. Our apparatus operator took our EMS equipment to the patient during these activities since we also are EMT certified and provide first response medical care. An off-duty Emergency Room physician was attending to the driver of the vehicle who apparently had been removed by bystanders prior to our arrival. I then assigned one of our two firefighters to assist the Physician and our apparatus operator with patient care.

Once the fire was knocked down, I directed the firefighter who was on the nozzle to assist with patient care since he is a paramedic. He advised me he got foam in his eye. We use Class B foam on our attack line for vehicle fires and he had not donned his SCBA prior to making the attack. He started hitting the fire from a safe distance due to the potential victims and achieved excellent knock down with the foam. When he got closer to the vehicle to check for victims in the passenger compartment, the foam bounced into his face so he then crossed back over the fence and went back to the apparatus to flush his eye.

EMS arrived and I directed them to an opening in the fence made by a police officer. This created closer access to the patient. I decided to check on the firefighter who got foam in his eye so returned across the fence to the apparatus. Our apparatus operator had taken a backboard off of our apparatus to the patient and was assisting in securing the patient to the board. Shortly after I made it back to the apparatus, one of the large electric lines came loose from the broken pole. It made a huge buzzing sound and the EMS crew, some bystanders who were in the field, the physician, our apparatus operator and a firefighter who were all on the opposite side of the fence, began to scatter. The physician, our apparatus operator and a firefighter grabbed the patient on the board and attempted to take him out of the hazardous area. Command was instructing them to run toward the field away from the fence and the road and I was yelling for them to run toward me and the opening in the fence and towards the back of the road. About the time they reached the fence, the

wire that had come loose (or possibly a different one) energized the fence. The fence was a cross wire style fence (wire construction made with four to six inch squares or rectangles) and it literally looked like the filament of a light bulb. There was a lot of vegetation and trees growing along the fence. There were also other wires on the pole that were energized and much of this burned or caught fire even a quarter mile or more down the fence line. As all of this was taking place, our Chief arrived on scene and he said everything in the area turned white from the light of the arcing. It was apparently a spectacular sight. I recall only the loud noise and seeing the fence and things in contact with the fence appearing to spontaneously combust.

Fortunately none of our people were injured. Our apparatus operator, who crossed the fence line, said he felt a tingling in his legs as he crossed it. A police officer had knocked a section of the fence down so if it was still connected to the part of the fence that got energized, it may have been connected by only a wire or two. The two EMS workers did sustain minor injuries when they were running through the field away from the hazard. Their injuries were due to stepping in holes or tripping as they ran through the field and were not at all related to the electricity.

We quickly recomposed ourselves, got the patient on the stretcher and EMS transported him to our trauma center. The patient showed signs of a closed head injury according to our firefighter/paramedic who rode with the patient in the ambulance. We later received information that the patient died within 48 hours of arriving at the hospital.

Though the foam had practically extinguished the fire and very little overhaul was required, we waited until our utility company arrived to confirm that the fence and the electrical lines on the poles were de-energized. We then began overhauling the vehicle and retrieving any of the EMS equipment that was left in the field.

While some will say this was a freak incident and “the stars were all in alignment” to have it happen the way it did, we really felt like we were taking as many precautions as we could when we were on the scene. We thought we were being very conscious of the power lines but didn’t really understand how quickly they could cause problems. We were all very lucky!

Lessons Learned

1. It is easy to become complacent when you so frequently respond to incidents involving damaged utility poles. Be extra cautious at these incidents.
2. You should look at and discuss what can happen when you arrive at a situation like this and if possible, plan and agree upon escape routes or a plan of action if the situation should escalate.
3. Sometimes it may be necessary to just wait for your utility company to arrive before you take action.
4. Higher lines on utility poles typically mean higher voltages especially if you see insulators on the poles.
5. Poles containing more than three lines (i.e., one phone, one cable, and one power line) may have greater stress on them and may react differently than poles that contain only three lines.

6. The police officer could easily have been killed if he was knocking down the fence at the time it became energized. The same could be said for our crew who crossed the fence to extinguish the fire while holding the hose line.
7. When possible, expedite the amount of time spent inside the hazardous area.
8. Though not applicable in this incident, realize that a line down anywhere on a guard rail even if it is a great distance from the scene can still energize that entire guard rail.
9. Consider developing an SOP/SOG that clearly provides guidance for situations such as this one.
10. Use the Risk/Benefit concept and establish a safe zone that will not be entered until the power is shut off. Confirm that the power is shut off by a utility company representative regardless of the presence of patients or fire.

Report Number: 08-074
Report Date: 02/07/2008 1954

Demographics

Department type: Combination, Mostly volunteer
Job or rank: Fire Chief
Department shift: 24 hours on - 48 hours off
Age: 34 - 42
Years of fire service experience: 24 - 26
Region: FEMA Region X
Service Area: Rural

Event Information

Event type: Fire emergency event: structure fire, vehicle fire, wildland fire, etc.
Event date and time: 02/06/2008 0640
Hours into the shift: 0 - 4
Event participation: Witnessed event but not directly involved in the event
Weather at time of event: Cloudy and Rain
Do you think this will happen again? Yes
What were the contributing factors?

- Decision Making
- Command
- Situational Awareness

What do you believe is the loss potential?

- Lost time injury

Event Description

A fire department was operating at a commercial vehicle fire on an Interstate Highway. The fire communicated into the cargo trailer which was refrigerated. The combustibles within the container ignited and when the crew made entry into the container they entered standing up. As they made entry, the smoke level descended down approximately 24" from the roof of the container. As the smoke banked down, more of the combustibles ignited (foam insulation) which produced a rapid ignition of the entire top of the cargo container. Upon ignition, both firefighters descended to their knees and started to extinguish the fire.

Lessons Learned

Lessons learned: Remember your fire behavior regardless of the operation. While no injuries occurred, the recognition of smoke and heat did not occur because of the situation. Neither firefighter nor the Incident Commander recognized the potential fire behavior because of the confinement within the container.

To correct this incident, firefighters must remember that fire behavior must be recognized when combating fires in confined containers regardless of the incident size.