



**National Fire Fighter Near-Miss Reporting System
Reports Related to Water Rescue Reports**

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Report Number: 05-0000361

Report Date: 07/29/2005 1142

Demographics

Department type: Combination, Mostly paid

Job or rank: Assistant Chief

Department shift: 24 hours on - 48 hours off

Age: 43 - 51

Years of fire service experience: 24 - 26

Region: FEMA Region III

Service Area: Urban

Event Information

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

Event date and time: 07/07/2005 0000

Hours into the shift: 5 - 8

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 do you believe caused the event?

- Procedure
- Human Error
- Decision Making
- Training Issue

What do you believe is the loss potential?

- Life threatening injury
- Property damage

Event Description

While on a boat training, swift water caught the front end of the boat increasing the load significantly, causing the (safety) rope system to fail. The ropes snapped and the rope went through the pulley system without any control. Had the ropes been wrapped around anyone's arm or foot it would have sucked them into the pulleys causing serious injury or death.

Lessons Learned

1. We need more communication during training exercises. 2. Take training exercises seriously. 3. Always plan for something to go wrong. 4. Possibly if the boat had been lowered more slowly, we could have been able to move further up in the boat to distribute the weight evenly.

Report Number: 05-0000421
Report Date: 08/09/2005 1942

Demographics

Department type: Paid Municipal
Job or rank: Lieutenant
Department shift: 24 hours on - 48 hours off
Age: 34 - 42
Years of fire service experience: 7 - 10
Region: FEMA Region IV
Service Area: Urban

Event Information

Event type: Non-fire emergency event: auto extrication, technical rescue, emergency medical call, service calls, etc
Event date and time: 07/11/2005 0930
Hours into the shift: 24+
Event participation: Involved in the event
Weather at time of event:
Do you think this will happen again? Yes
What do you believe caused the event?

- Weather
- Decision Making
- Training Issue
- Situational Awareness

What do you believe is the loss potential?

- Life threatening injury
- Minor injury
- Lost time injury

Event Description

Due to the aftermath weather of Hurricane Dennis, our community received major flood damage. Our specialty rescue squad answered several water related calls in the surrounding area in agreement to our auto-aid dispatch. On one incident, a dead-end road development was flooded under the cover of morning darkness. About six homes were eventually consumed from a nearby river's overflow. Nine residents had to be rescued from the homes. Water five feet deep rapidly flowed down the street between these houses. Our Swift Water Technicians assisted the local jurisdictions rescue teams that were already in operation. The initial responding Engine Company made a decision to attempt water entry to evacuate nearby houses. This crew's level of training is unknown, but it was apparent they were not trained in swift water rescue. The crew had entered the water wearing a Type V Rescue PFDs over full turnout gear. One of the personnel soon became trapped inside a house by rapidly rising water. This firefighter was eventually rescued by boat after the residents were taken to higher ground. Self-rescue would have had little to no risk in the chest deep water without the turnout gear. Wearing full turnout gear near the water's edge with no fire hazard, I feel, warrants a near-miss.

Lessons Learned

Every swift water training class and experience I have had expresses and justifies the dangers of wearing turnout gear near the water's edge. If equipment is placed on the apparatus with untrained personnel, safety may become secondary to the feeling of helplessness. To prevent this, proper full training is recommended. If it is unavailable, awareness of the hazards must be a training priority.

Report Number: 05-0000643

Report Date: 12/03/2005 1649

Demographics

Department type: Combination, Mostly volunteer

Job or rank: Fire Fighter

Department shift: 10 hour days, 14 hour nights (2-2-4)

Age: 34 - 42

Years of fire service experience: 17 - 20

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: 06/24/2004 0430

Hours into the shift: 17 - 20

Event participation: Involved in the event

Weather at time of event:

Do you think this will happen again? No

What do you believe caused the event?

- Situational Awareness
- Procedure
- Human Error
- Command
- Protocol

What do you believe is the loss potential?

- Life threatening injury

Event Description

I have been in the fire service for going on 19 years. I have certifications as a Level 2 Firefighter, Level 1 Instructor, Live Burn Instructor, HAZMAT Technician, Emergency Rescue Technician, Swift Water Technician, Company Officer certified, Emergency Management certified, and the list goes on and on. The point of me telling the preceding? I just wanted to make the point that one can have all of the experience in the world on paper or in life and still make mistakes that are or could be detrimental. In the early morning hours of 24 June, 2004, my engine responded to a vehicle crash with ejection. Upon the arrival of the Assistant Chief of Rescue Operations, command was established and a helicopter requested from our local trauma center. We were advised that the helicopter would not fly due to foggy weather conditions. We were also advised by command of power lines being down at the scene. Upon our arrival, we found a male lying in a ditch approximately 25 to 30 yards from his vehicle, which had struck two power poles, breaking the bottom out of one and the top out of another. Later the Highway Patrol estimated that his car had rolled 8 to 9 times and that his speed was approximately 100+mph. As the lead firefighter, my responsibility was to see that the primary medical equipment was taken from the rig. As I exited the truck and got to the patient, I began holding C-spine, which was taken over by a basic first responder so that I could assist in the hanging of an IV. Other firefighters on the scene had brought traffic cones to the scene

in order to mark a boundary due to the downed power lines. After the IV was established and the patient was packaged for transport, we began walking across the yard toward the wagon. Without having knowledge of downed wires in the yard of the home we were in front of, the two Paramedics, the other firefighter, and myself all four stepped on or over a main power feed running to a transformer behind the home. If the wire had been live, then there would have been a charge of roughly 10,000 volts on this line. I know without a doubt that I stepped on the line. That is the only way that I knew that the line was there. Without a doubt we all would have died, including the patient. This line was not marked by any cones. It was still dark outside, so the black insulation on the wires was not visible against the dark, wet grass.

Lessons Learned

1- As an incident commander, it is his/her responsibility to see to it that a primary and constant walk-around takes place to be sure that he/she has located any and all visible hazards and to monitor for the changing of situations. 2- Have a working plan running within your own head. Try to get the big picture as you are standing on the ground after exiting the truck. Do this before you get to the patient. If you have to, turn away from the scene, take a deep breath, and then turn around and tackle the incident. Tunnel vision kills more than one may realize. 3- Know your surroundings. Be aware that if you are in an area that has above-ground lines with power pole(s) broken, then you need to be aware that you will probably have wires on the ground. Be aware. 4- Tunnel vision caused this situation from the beginning. Emotions are always high when dealing in the really bad incidents. Don't fall into that trap.

Report Number: 06-0000122

Report Date: 02/26/2006 2308

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 IX

Service Area: Urban

Event Information

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

Event date and time: 01/09/2005 1200

Hours into the shift: 0 - 4

Event participation: Involved in the event

Weather at time of event:

Do you think this will happen again? Yes

What do you believe caused the event?

- Other
- Weather
- Individual Action

What do you believe is the loss potential?

- Other
- Minor injury
- Life threatening injury

Event Description

An Engine and Ladder company was dispatched to assist a family of 4 from their cabin after they were trapped by mudslides and high water. Crews were forced to hike approximately $\frac{3}{4}$ mile to reach the family. The gear needed to affect the rescue would have to be carried in by the team. The family was found on the far bank of a swollen river near a fork. This was in a fire denuded canyon of the (name withheld) Mountains. Swiftwater tactics would be needed to remove the family to safety. The 4-member family, included an 8-week old male infant, an 18-month old female, and the parents. They were not cooperative with the fire department and the local sheriff volunteer mountain rescue team (name deleted) after they called 9-1-1 requesting assistance. A "tension diagonal" system was established by using a line gun and directing the father to tie a tensionless anchor on the far bank. Three firefighters "zipped" across the river with pfd's and helmets for the adults. We then began rigging for the rescue. A highline Tyrolean system with an inflatable rescue boat on tether was rigged to shuttle the victims to safety. Manpower was used to pull the rope traversing the raging creek. While moving the victims, the boat flipped in the middle, dumping one (department deleted) FD USAR/swiftwater rescue firefighter, the mother, and the 8-week old baby into the river. Four downstream rescue points had fortunately been established prior to engaging in the rescue.

These personnel were able to rescue the firefighter after he washed into the upstream side of a large midstream tree, a strainer, using throw bags and self-rescue methods taught in Swiftwater Rescue Technician training courses. This skill is required for all rescue personnel assigned to the department's USAR and swiftwater rescue teams. However, the mother, wearing a fire department-issued PFD and rescue helmet that was donned prior to getting into the IRB, and baby, attached to the mother in a papoose-style harness, were swept downstream into a deep canyon on the opposite side of the river. Several firefighters pursued, running along the shoreline to head them off. The Rescue Group Supervisor, a USAR Company captain ended up being the one firefighter in the best position to intervene with the two remaining victims. He is swiftwater-rescue trained and was wearing full swiftwater rescue PPE including a dry suit, which is a critical issue in this situation and a Lesson Learned form a previous rescue. As he ran downstream along the banks of the river, he reported to the I.C. that a Rapid Intervention situation was in progress, with multiple victims. He passed command to another member and handed him his portable radios just prior to entering the water to conduct a Contact Rescue. The command post was 1 mile away, downstream at a dam. At a point where the mother and baby struck a sand bar in the current, the USAR captain, formerly the Rescue Group Supervisor, conducted a very rapid water crossing. He ran diagonally downstream across the river, which at that point was waist deep and moving approximately 12-15 mph, in a situation that would normally require a methodical shallow water crossing. Ordinarily, a line abreast, line astern, or single rescuer with pike pole/tripod method would be used. He encountered a rocky bottom and flood/flash flooding conditions, with boulders rolling underneath the water and trees and debris being swept past. Another Swiftwater Rescue/USAR firefighter attempted to support the primary rescuer by extending a rope across, anchored by personnel on the shoreline, in order to provide some sort of a handhold for the return trip. However, the speed and ferocity of the current and debris caused the rope to submerge and hang up several times. However, this firefighter did not give up, and continued to provide assistance for the primary rescuer. The primary rescuer made it to the mother and instructed her to give him the baby. The baby was crying strongly but suffering from deep hypothermia from long exposure to the elements even before the mishap. He instructed the mother to remain on the sandbar until he could return for her. The priority at this point was to remove the 8-week old baby from the water by carrying him in a shallow-water-crossing operation back to the near shore. He managed to cross diagonally and upstream, high-stepping in a very methodical manner to avoid tripping or being swept away with the baby in his arms. The primary rescuer handed the baby to a waiting firefighter, who in turn handed the baby up the sloped river bank to a waiting firefighter from another department. He carried the baby 1/2 mile to a local station for re-warming prior to hiking the hypothermic baby out of the canyon. The ambulance was nearly a mile hike away. To reach the ambulance, he had to hike along a flooding mountain road that was being hit by active mudslides that blocked access for all vehicles in the driving rain. Meanwhile, another firefighter from (department name deleted) entered the water to assist the primary rescuer in any way possible. He was not equipped with swiftwater rescue PPE and was not formally trained in SW ops. As the primary rescuer made his way back across the river to the mother, the other firefighter also entered and joined the other USAR/SW firefighter. Together, they placed the mother in the middle of a "line astern" crossing configuration, and methodically made their way back to safety. During this part of the operation, other firefighters, who had been involved with the upstream Rapid Intervention operation and others who ran into the canyon in support after the Rapid Intervention situation, established additional downstream safety positions in case there were any further mishaps. All personnel and victims were

accounted for, and both victims were transported to the hospital for treatment. The main injuries were hypothermia. There were no fatalities.

Lessons Learned

1. Risk vs. gain is always a prime consideration when deciding to engage in rescue or to "protect in place" In this incident, the children were both suffering from hypothermia. Their exposure to the rain and storm conditions, and their entrapment with no other option for rescue made it imperative to attempt a rescue. The roads were impassable, the weather and terrain prevented any potential for helicopter rescue, and darkness would arrive in a few hours. 2. Safe crossing locations must be scouted. Personnel scouted upstream and downstream for 1/2 mile or more before determining there was no safe "shallow water crossing" potential. Therefore, they shot a line across the river with a line-throwing gun. The father was instructed how to create a tensionless anchor, which was used to establish the "tension diagonal" system. Three USAR/Swiftwater firefighters, wearing dry suits and other PPE, then hooked their webbing straps and carabineers to the tension diagonal line, and entered the water, which propelled them across the river. 3. Preplanning is important. This was the site of a similar rescue just 11 months earlier with the same Engine and Truck Company, and the same Rescue Group Supervisor/USAR captain as well as the same SAR team. Therefore, even though not assigned to this area of the County, the USAR captain/Rescue Group was familiar with this location.

Report Number: 06-0000126

Report Date: 02/28/2006 1113

Demographics

Department type: Volunteer

Job or rank: Captain

Department shift: Duty night (in-station)

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: 06/12/2005 1600

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 do you believe caused the event?

- Fatigue
- Human Error

What do you believe is the loss potential?

- Life threatening injury

Event Description

During water rescue, the submerged diver located victim. When the diver surfaced, he became entangled in his search line, dislodging his regulator. The safety boat was receiving directions from the shoreline due to a failure of their radio. When the diver surfaced, neither command on shore nor the boat operators could see the diver. The safety diver located on the opposite shoreline of the river entered the water rapidly and was noticed by the IC. The IC then directed the boat operator to turn around and assist the diver. The diver was conscious and ok.

Lessons Learned

Safety diver is needed on any diver down. Possibly needs to be floating over dive site, or in boat. There was a time lag between the safety diver getting out to the diver in distress.

Report Number: 06-0000196

Report Date: 03/29/2006 1941

Demographics

Department type: Combination, Mostly paid

Job or rank: Fire Fighter

Department shift: Other : 5D 5off 4n5off 2d3n 4 off

Age: 16 - 24

Years of fire service experience: 0 - 3

Region: Canada

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: 08/25/2004 0400

Hours into the shift: 5 - 8

Event participation: Involved in the event

Weather at time of event:

Do you think this will happen again? Uncertain

What do you believe caused the event?

- SOP / SOG
- Decision Making

What do you believe is the loss potential?

- Unknown
- Other
- Lost time injury
- Life threatening injury

Event Description

Responded to a call for a van driven into a reservoir while on a shift change with an acting captain, FF#1, 4 years experience, and a driver. I will be FF#2. After preparing for land based water rescue, I was ordered to enter the water and search for the vehicle while wearing bunker pants and fatigues. I am not a member of the water rescue team. Only water rescue team members may enter the water when the technical rescue water rescue program has been put into place at the call. This order violated a direct SAG/SOP. The training of FF1 was unknown to me. I did not disobey the order and made entry due to work refusal legislation, not questioning the acting captain at the time. When discussed with my shift captain nothing came of the incident formally to my knowledge.

Lessons Learned

(Reviewer provided) SOPs are created to ensure personnel safety. Acting officers should be familiar with department SAGs/SOPs prior to assuming responsibility. Acting officers should be shadowed on incidents by more experienced officers. SOP violations that could result in needlessly endangering members should be brought to an officer's attention immediately.

Report Number: 07-0000981

Report Date: 06/30/2007 1652

Demographics

Department type: Paid Municipal

Job or rank: Other: River Pilot

Department shift: 24 hours on - 72 hours off

Age: 34 - 42

Years of fire service experience: 21 - 23

Region: FEMA Region III

Service Area: Urban

Event Information

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

Event date and time: 06/18/2007 1900

Hours into the shift:

Event participation: Involved in the event

Weather at time of event: Cloudy and Dry

Do you think this will happen again?

What do you believe caused the event?

What do you believe is the loss potential?

Event Description

Suicide attempt near fireboat quarters. From firehouse pier I witnessed an elderly female climb a fence and jump approximately 15 feet into the [name deleted] river. The subject was elderly female; no splashing, no attempt at swimming: subject immediately sank upon hitting water. No other rescue personnel were nearby and other boat crews were on another incident involving a sinking boat. Time was 1900, weather clear, light winds, seas less than 1 foot. I ran from the firehouse towards her last seen location, grabbing both a life ring and life jacket. I ran approximately 200 yards, around a security barrier (which hangs over water) over 2 fences, and began to look for her in the water. Upon seeing victim 3 feet under water, I decided against donning life jacket in order to be able to swim below the surface to affect a rescue. I threw in both the life ring and lifejacket, took off my shoes, wallet and cell phone, and jumped 15 feet into water. In doing so, I held my nose, covered my face, and crossed my legs, landing feet first. (Water in that area is about 22 feet deep- about 75 degrees.) While underwater, I located victim and took her to the surface. I placed her into the life ring and found her to be rigid, unconscious, and not breathing. I managed her airway and swam her away from the seawall in anticipation of arriving wake from approaching rescue boats. I attempted rescue breaths and she began coughing and breathing. My decision not to don a PFD for my own protection was based of personal extensive experience in water rescue obtained through training both in and outside of the [name deleted] Fire Department as well as training and time served as a Boatswain's Mate in the US Coast Guard. Such a rescue is not for everyone! What I did was against many safety standards, and I only did it because I was confident in what I was doing and knew I would be unable to recover her if wearing a life jacket. There were several police officers and another firefighter nearby when I jumped into water, ready to assist me if necessary. My decision to "go" was based on: 1. Victims age and apparent fragility. 2. Seeing victim underwater, not struggling and lifeless. 3. Rate at which

victim was sinking. 4. The fact that I had 2 flotation devices within reach. 5. Knowledge of water depth. 6. Availability of backup rescue swimmers.

Lessons Learned

Along the waterfront we must remain vigilant at all times and expect to effect a rescue at a moments notice without warning and very little time to consider other options. If a similar event unfolded, I would proceed in a similar manner. If it were a conscious, struggling patient I would don a life jacket, throw a flotation device and await back-up. I would adhere to the rules of water rescue: REACH, THROW, (motor) ROW, GO, HELO. After many years serving on the fireboat I have seen numerous attempted suicides, most of which are not sincerely done. This one was. Most suicides in the river survive their plunge, and the fire department or police pull them out without any confrontation. This person wanted to die and seemed to have weighted herself or done something to help her sink. She was in the water well over a minute when I finally got her above the surface. This event will occur again. The rescuer MUST make a well educated decision on how to approach and rescue a person in such a situation.

Report Number: 08-0000033

Report Date: 01/20/2008 1523

Demographics

Department type: Paid Municipal

Job or rank: Battalion Chief / District Chief

Department shift: 24 hours on - 24 hours off

Age: 43 - 51

Years of fire service experience: 21 - 23

Region: FEMA Region IX

Service Area: Urban

Event Information

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

Event date and time: 01/04/2008 1400

Hours into the shift:

Event participation: Involved in the event

Weather at time of event: Cloudy and Rain

Do you think this will happen again?

What do you believe caused the event?

- Situational Awareness
- Training Issue
- Decision Making

What do you believe is the loss potential?

- Life threatening injury
- Lost time injury
- Minor injury

Event Description

After receiving heavy rains, we were dispatched on a water rescue in the river. The waters were slowly rising with strong currents in parts of the water. As the IC, I requested our Water Rescue Team. The department Safety Officer, PIO, and overhead personnel responded. It was determined that the rescue would be done using the gas power water craft. Although this is not routine for us, we are trained in water rescue and I felt confident all aspects of the rescue were covered. All personnel donned the proper safety gear (helmets, life jackets, dry suits). The IAP was reviewed by all personnel. Additional Safety Officers, Spotters, and a back up gas powered water craft was also deployed in the water in case it was needed. An incident briefing with a safety message was conducted. The rescue was uneventful, with one exception. After picking up the victim from the water, the two personnel on the gas powered water craft, decided to attempt to retrieve the victim's sleeping bag from the water. They diverted the boat with the victim in it, in an attempt to retrieve the bag. This was never discussed in the IAP/incident briefing. The firefighter was unable to lift the wet sleeping bag from the water and consequently released his grip. The sleeping bag immediately was wrapped around the propeller thus killing the gas power engine. They began to float uncontrollably down stream. The back up gas powered water craft was deployed but quickly realized that the currents were

too strong for the under power engine and they were ordered back to shore. The river widened approximately 300 feet down stream and the current slowed enough that the two rescuers were able to paddle to the shore.

Lessons Learned

We learned that we should stick to the stated "Incident Objectives". As harmless as it seemed, retrieving the sleeping bag, could have resulted in tragic consequences. We also learned to not under estimate the strength of the current. We have found out that there are better water craft on the market with much more power to assist in getting through the strong currents. The biggest lesson learned is the need for "more training" in performing water rescues.

Report Number: 08-0000050

Report Date: 01/29/2008 1602

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: 17 - 20

Region: FEMA Region II

Service Area: Urban

Event Information

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

Event date and time: 10/01/2007 0300

Hours into the shift:

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

Weather at time of event: Not reported

Do you think this will happen again?

What do you believe caused the event?

- Situational Awareness
- Decision Making
- Human Error
- SOP / SOG

What do you believe is the loss potential?

- Life threatening injury

Event Description

On an early October morning at 0257 hours, an alarm was received for a female in the water of the [name deleted] river. Units arrived on the scene at the shore line. A marine company boat, while en-route, received confirmation that a person was in the water. The boat arrived within five minutes and proceeded toward the units on shore to find out the location of the victim. The land units informed the marine unit that they had a member in the water and that the boat just missed striking both the victim and the rescuer. An engine company member jumped into the water prior to the boats arrival with just a personal floatation device (PFD). In total darkness, with two people using one PFD and their heads barely above the water line, the thermal imaging camera was unable to locate them. The member was not tethered to a line and no lights were on him. Brackets [] denote identifying information removed by the reviewer.

Lessons Learned

1) Members entering the water should be wearing a personal floatation device. 2) Members entering the water must be tethered and in sight of members on the shore. 3) A second device, ring buoy or floatation device should be available for the victim. 4) During operations at night, all available spotlights, flashlights and apparatus headlights should be directed at the

victim and rescue swimmer. Caution should be used to avoid shining a light directly at the responding fireboat. Lights from the shore may interfere with the visibility of the boat operator. 5) A slower approach in the immediate area of the operation is required when people are in the water. 6) Thermal imaging cameras can be used by land and marine units to locate victims that are floating on the surface and to keep track of the rescue swimmers. It will not locate victims that are under the water. 7) Rescue swimmers should have local knowledge of the area including tides, current and underwater obstructions. Victims on the surface will drift with the current at approximately 100 feet per knot. During tide changes, currents in this particular river can exceed four knots. 8) The Incident Commander should advise the Dispatcher that “members are in the water” and the responding fireboat should be notified of the exact location. 9) Land units should establish contact with the responding marine unit via portable radio or through the dispatcher to coordinate their efforts.

Report Number: 08-0000232

Report Date: 05/08/2008 2128

Demographics

Department type: Combination, Mostly paid

Job or rank: Fire Fighter

Department shift: Straight days (10 hour)

Age: 25 - 33

Years of fire service experience: 7 - 10

Region: FEMA Region I

Service Area: Rural

Event Information

Event type: On-duty activities: apparatus and station maintenance, meetings, tours, etc.

Event date and time: 05/05/2008 1100

Hours into the shift: 5 - 8

Event participation: Involved in the event

Weather at time of event: Clear and Dry

Do you think this will happen again? Yes

What do you believe caused the event?

- Situational Awareness
- Human Error
- Decision Making
- Procedure

What do you believe is the loss potential?

- Property damage
- Life threatening injury

Event Description

While testing water rescue equipment, a line used to inflate hose sections so they float exploded inches away from me. As it turns out, the last person had left the regulator turned up to 1500 psi even though the line is rated to 200 psi. When putting this equipment away we are suppose to turn the regulator to zero. However, if I had follow procedure and opened the supply bottle connected to the regulator prior the connecting the fill line, I would have noticed the discharge side of the regulator was turned up too high therefore preventing the explosion.

Lessons Learned

To prevent this event, procedures need to be followed. Also, to prevent serious injury other firefighters need to be aware of what others are doing. If one of my brethren had been walking by when the hose exploded, they could have been injured or worse if hit by the adaptor end of the hose.

Report Number: 08-0000611

Report Date: 11/22/2008 1056

Demographics

Department type: Paid Municipal

Job or rank: Fire Fighter

Department shift: 24 hours on - 48 hours off

Age: 43 - 51

Years of fire service experience: 17 - 20

Region: FEMA Region X

Service Area: Urban

Event Information

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

Event date and time: 11/07/2008 1200

Hours into the shift:

Event participation: Involved in the event

Weather at time of event: Cloudy and Rain

Do you think this will happen again?

What do you believe caused the event?

- Situational Awareness
- Communication
- Weather
- Decision Making
- Individual Action

What do you believe is the loss potential?

- Life threatening injury

Event Description

Brackets [] denote identifying information removed by the reviewer. On November 7, 2008 at approximately 0945, I was contacted at home by lieutenant [name deleted] stating that [department name deleted] had an ongoing dive incident and needed divers. He asked if I was available and if I would report directly to the scene to assist in the effort. Lieutenant [name deleted] briefed me that the incident was a car in the river with a two year old and a thirteen year old still missing. He stated that the incident was now in the recovery mode and that there was a high priority to get the car and the kids out of the river. The incident commander initiated a zone 3 technical rescue response, which netted approximately 65 firefighters with technical rescue experience from throughout [county name deleted]. I responded from home in my private auto and civilian clothes. I arrived on location and made contact with battalion chief/safety officer [name deleted]. I stated to him that I was a diver called in from home and that I was checking in. Battalion chief/safety officer [name deleted] made up a passport for me and checked me into the incident command system. I met with firefighters [names deleted]. We all suited up with gear that was on [dive unit number deleted]. We all remained at the dive unit waiting for an assignment. Captains [names deleted] arrived on location shortly after this and they both proceeded to the command post. Captain [name deleted]

came back to the dive unit and instructed us to proceed to the Rescue Group Supervisor. I do not remember speaking to the Rescue Group Supervisor personally. My contact was with Captain [name deleted], Lieutenant [name deleted], and firefighter [name deleted]. We were briefed that the car was located by the last diver. River current conditions prevented the [department name deleted] firefighter from doing a complete recon of the vehicle. It was decided that a diver would be used to hook the car to a tow truck cable to recover the vehicle and presumably, recover the missing children. The plan was for the diver to attach a rope to the vehicle that would act as a means to slide the tow strap and cable to the vehicle. We were briefed that visibility was zero and the current was extremely swift. I inquired about the experience level of the previous divers. The answer was that all the previous divers had minimal experience. The diving order was me as the primary search diver, firefighter [name deleted] as the safety diver and firefighter [name deleted] as the 90% safety diver. My tender was firefighter [name deleted] who was in the river raft tending my communications lifeline. Firefighter [name deleted] was also in the raft with his tender [name deleted]. Firefighter [name deleted] was sitting on the bank of the river next to me. I was also advised that conditions warranted the use of extra weight to overcome the current. I would normally use a 20 pound weight belt in non moving water. I knew from previous experience in river diving, that I would easily need at least 50 pounds. I donned a 35 pound weight belt and placed 20 to 30 pounds of sand weights into my buoyancy control device for a total of 55 to 65 pounds of weight. I was also briefed by captain [name deleted] from [department name deleted]. He restated the plan and we discussed safety concerns. He stated that conditions were extreme and warned me to exercise caution. Another firefighter was tending the ½" rope that I was going to attach to the vehicle underwater. I attached the communications lifeline to my chest harness with a snap shackle. This is standard procedure. I entered the river when everyone was in place and firefighter [name deleted] gave me the go ahead. I immediately noticed that the water was moving faster than anything I had ever experienced. I was planning along the surface of the water while the raft was moved into position by a highline rope system. I used my hands and body to plane below the surface. I immediately landed on what felt like a car. I felt the jagged glass shards around the frame of a window, a seat back, and a round object that became dislodged. This object was later reported to be a basketball that surfaced while I was under water. I located a wheel and felt that this would be the best attachment point for the rope. I attempted to release the rope that I had attached to my communication lifeline with a small carabineer attached to a prussic loop. The rope was so taught that I could not release it from the prussic. I told firefighter [name deleted] to slack the rope. This had no effect on the rope. I suddenly felt an acceleration of force on my body. The force was strong enough to put a strain on my chest harness, which constricted with each exhalation until I was unable to inhale. I told firefighter [name deleted] to pull me up and get me out of there. I simultaneously ditched my 35 pound weight belt and inflated my buoyancy control device. I was suddenly on the surface still unable to breathe until I was brought back to the river bank where the river flow was markedly slower. I ripped my mask off to get a breath of air once I made it to shore. I was able to get up the river bank on my own. I was met by numerous officers and several other people that I cannot recall. I remember stating that the situation was untenable and that no other diver should be put in the water. I was then sent to rehab where I was monitored and given water and food. I was in rehab when the magnitude of the situation sunk in and I felt physically ill. I heard from others that the recovery operation was suspended and turned over to [sheriff department name deleted]. I was released from duty at approximately 1300.

Lessons Learned

Brackets [] denote identifying information removed by the reviewer. I have had the opportunity to think about this over the past two days and have some observations on how this happened: •Everyone that I had contact with seemed extremely focused on recovering the bodies even though this was clearly a body recovery which wouldn't normally justify the high risk operations. The fact that children were involved may have had something to do with this. I was also caught up in the emotions of the event. •I did not recognize that the flow of the river was untenable for divers even though other divers were unsuccessful. I gauged my ability and experience to other divers with less experience. This caused a false sense of security. •Placing weights in my BCD was a mistake because there is no way to ditch them quickly in an emergency. •I was told that flow was at approximately 2,600 cubic feet per second and normal flow is between 600 and 1,000 feet per second. This should have been a red flag. •I am not aware of a threshold flow that would indicate that diving is contraindicated. The team needs to research and implement a means of determining flow and speed to help make decisions in the future. These things went well: •Firefighter [name deleted] was observant and decisive when she became aware of my situation and immediately moved the boat back to shore. She tuned into the fact that something was wrong immediately by detecting a sudden change in water velocity and a change in my breathing rate. •Panic avoidance training that was taught by firefighters [names deleted] instilled important skills that kicked in during the emergency situation. My first thought was to drop my weight belt, make myself buoyant, and call for help. The feeling of panic was still present but I was able to get myself out of a scary situation. The chain of events that could have led to injury was interrupted by this training. I recommend that the dive team enhance and emphasize this part of our training in the future. I want everyone to learn from my experience so that this never happens again. I have never had a near miss in 19 years on duty and I do not want to have another. I consider myself extremely safety conscious and I always try to maintain a high level of situational awareness when it comes to my job. If this can happen to me, it can happen to anyone.