



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

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06-039

Event Description

We were dispatched to a large wildland fire to assist multiple agencies. We were enroute with a wildland fire apparatus, and a water tanker to provide assistance. Both apparatus were occupied with one firefighter each. The department's assistant chief and firefighter were following in the assistant chief's private vehicle behind the apparatus. The wildland fire apparatus was in front and water tanker was following behind on a rural Farm to Market Road when they approached a train crossing. The wildland apparatus went across the railroad tracks and made a left turn on another Farm to Market Road to travel to the fire. The driver of the water tanker failed to look at the flashing warning lights. The railroad tracks did not have cross arms, just flashing lights. The driver of the water tanker didn't see the train approaching until it was too late and collided with the first locomotive just behind the front axles, and wheels on the locomotive. The driver of the wildland fire apparatus never saw the collision and proceeded to the scene, thinking the driver of the water tanker had stopped for the train. The water tanker was equipped with two 600 gallon water tanks, which upon collision unbolted from the frame of the apparatus and pressed the cab of the apparatus against the train partially ejecting the driver out the driver side window, pinning him from the thigh area down. The driver was extricated with the jaws-of-life, from a mutual aid department, and flown to a trauma center. The driver of the water tanker spent several weeks in intensive care, underwent numerous major surgeries, and is undergoing extensive rehabilitation for his injuries.

Lessons Learned

Lessons learned: Ensure all personnel are trained extensively in emergency vehicle operations. This individual was properly trained in emergency vehicle operations. He lacked knowledge of the response district, and the train crossings he had to proceed over enroute to the scene of the incident. My suggestions to prevent similar incidents from happening are to always stop at railroad crossings, look both ways to ensure there are no trains approaching. Never rely on lights, or cross arms to alert you that a train is approaching, and know where train crossings are, whether in your response district or mutual aid department districts. Actions to correct the situation are to ensure all individuals are properly trained in emergency vehicle operations, and know how to approach railroad crossings, and know that a train cannot swerve out of the way to miss you, and even with warning lights, and sirens activated a train will not be able to stop for you. Lastly, always stay alert when operating an emergency vehicle, know your route of travel before leaving the station, and the possible hazards and delays of traveling that route.

08-061

Event Description

Five hours into the initial attack phase of a major wildland fire, a small volunteer fire department responded with a strike team of engines and reported to the incident command post. Since they did not have 800 MHz radios in their vehicles (they normally operate on VHF), the fire chief was given an 800 MHz portable radio and told what the command and tactical channels were for the incident. The strike team was then assigned to initial attack and structure protection on a [name deleted] high wind driven wildland fire.

The strike team leader made initial contact with the division supervisor in their assigned area and was instructed to assist other units performing structure protection in a mobile home park directly in the path of the fire. As the fire front approached the park, numerous mobile homes were ignited, visibility deteriorated significantly due to smoke conditions, and the fire spotted all around the firefighting units. The division supervisor ordered all units to evacuate the mobile home park and reposition to a safer area. All units except the volunteer strike team withdrew as instructed. The division supervisor assumed that all units had followed instructions and moved on with trying to catch the running wildland fire.

It was later learned that the strike team of volunteer engines never heard the order to evacuate the trailer park. The strike team was trapped in the back of the mobile home park with not way out. They made a defensive stand for several hours as the trailer park around them went up in flames. Several hours later, as the flaming fire front moved on and the intensity of fires between them and the park entrance diminished, the strike team was able to leave and re-engage in the firefight. The strike team leader later reported that he had 'lost communications' with the incident for several hours. He did not hear the order to withdraw from the trailer park and was unable to communicate with anyone on the incident to report the fact that the strike team was cut off and trapped.

No injuries or apparatus damage but potential for both was high.

Brackets [] in this report denote identifying information was removed by the reviewer.

Lessons Learned

1. Use every method possible to make sure that all units operating on an incident are able to communicate on incident radio frequencies. The frequent practice of have an entire strike team of engines depend on one person - the leader - with a radio on the incident radio frequencies, creates a potential point of communications failure that is almost inevitable.
2. Use extraordinary caution when personnel are given a new piece of complex equipment - such as a complex 800 MHz portable radio - in a high pressure situation with little time for training or familiarization.

3. Command personnel on complex incidents should have aides or assistants. The task of fire command of a rapidly evolving situation, combined with the rapid infusion of resources to the incident (often without face-to-face communications), combined with high volume radio traffic, makes resource accountability a major headache. Having an extra set of eyes & ears to assist with radio traffic, accountability, and record-keeping would help.

4. When tactical decisions to withdraw and redeploy resources are made, extra effort needs to be expended to assure that all units are accounted for. In the structure arena, we would do a PAR and a similar approach should be applied in this situation.

07-1139

Event Description

At the time, our fire departments policy was to respond one individual to wildland incidents in our water tender. The unit carries 2,100 gallons of water and weighs 31,000 pounds. When operating this unit as a single driver one is expected to navigate the roads using maps, communicate with Dispatch, and maneuver the unit without help in addition to pumping the apparatus when required. This means there is no opportunity to use a backer for turning around.

It was about 0300 in the morning and I was on my 19th hour of work without rest. I found myself on a narrow, single lane dirt road with an active wildland fire in the immediate area and needed to turn around. In my attempt to do so I backed over a berm near the roadway and high centered the tender. After some time I was able to flag down another unit in the area and they pulled the tender off the berm using a tow strap.

Lessons Learned

It is now unwritten policy that two operators respond in the tender. The two operators stay together during the operation and do not split up. This allows the second operator to aid the first operator with navigation, communications, keeping alert of situational awareness, staying awake, and finally backing the unit. Had the fire been upon the tender during the time the unit was incapacitated, the fire could have overtaken the unit, injuring me severely. Our labor group approached our fire chief and insisted on the change to two operators. The department does follow the unwritten policy 90% of the time. We are still working on making it 100% for the sake of our personnel's safety.

09-776

Event Description

During an aggressive fire attack at a wildland fire, an experienced firefighter was driving the brush truck with a probationary firefighter. The firefighter was on a modified front bumper with cage operating a hoseline. Communication between the nozzleman and driver were only hand signals. The fire was being attacked from the green (unburned)

area, which intensified the heat experienced by the nozzleman (situational awareness). No anchoring was in place for the nozzleman or safety harness. The area had an abundance of low lying saw palmetto trees. The truck rolled over one of the trees that caused a violent shift/raise in the trucks tires causing the nozzleman to be thrown to the ground. The advancing fire and possibility of being crushed by the brush trucks front wheels justifies as a near-miss.

Lessons Learned

Better communication between driver and nozzle person

Increased awareness of wildland fires and proper mitigation tactics

Safety net/anchoring system to be used for nozzle person in front of brush truck

10-1193

Event Description

Our department was called out on a brush fire with mutual aid to a neighboring department. Upon arrival, all of the incoming units were advised that there were multiple acres involved. When my unit arrived on scene, one of the mutual aid pumpers, and a brush unit, were already combating fire. My unit, a 1,000 gallon per minute pumper, supplied water, personnel, and equipment, to the scene.

Two of the personnel jumped out of my assigned truck excited, and started to combat fire with no helmets on, one of the firefighters had no gloves on and was wearing tennis shoes.

A firefighter had a chain saw and was cutting down a tree that was on fire near the top. The guy with no gloves and helmet, and tennis shoes melted the bottoms of his shoes, but was not injured.

Staffing was minimal however; we had just enough to get the job done. The incident commander was aware of this situation and immediately corrected it before any more firefighting efforts were made by these two firefighters.

Lessons Learned

According to the SOP/SOG's at our fire dept, it is acceptable to wear boots, jeans and a t-shirt with a helmet and gloves when fighting a brush fire (wildland fire). So, when we conduct wildland fire training, appropriate PPE is discussed on a regular basis. Everyone on the dept. is aware of proper PPE when fighting certain fires whether it would be a structural, vehicle, or a dumpster fire.

07-1038

Event Description

A Firefighter was working the scene of a woods fire when the top of a snag fell and almost struck him in the head. The tree fell within five feet of the firefighter. Other firefighters were in the area and none were looking at the surroundings.

Lessons Learned

The lesson learned is to be aware of your surroundings while performing on the scene of a wildland fire. To prevent further events it would be best to work in teams of two and always wear your protective equipment while on the scene.

06-225

Event Description

Our department had been dispatched for a wildland fire in a remote section of town. The duty shift, 3 personnel, responded with a forestry vehicle and an ambulance. The fire chief arrived on scene and established command. A staging area was established approximately 1/4 mile from the command post. Off-duty and call personnel responded to the staging area with the department's utility truck and all terrain vehicle on a trailer.

Once the location of the fire had been determined, personnel and equipment were moved from the staging area to the command post, located at a cul-de-sac. The ATV was unloaded and parked next to the trailer. A crew of four firefighters were loading it with equipment. The driver of the utility truck/trailer moved without warning the firefighters working around the ATV. As the trailer was moved, the steel safety shield for the brake light assembly on the trailer brushed against my calf. Luckily there was no injury from this incident. However, there was potential for a lost time leg injury.

Lessons Learned

Several lessons can be drawn from this incident. First, all personnel must be aware of the activities that are going on around them. I was not aware that the utility/trailer was being moved as I was preparing the ATV for use. The driver of the utility should have been aware of the personnel operating next to the trailer and let them know he was about to move the vehicle. A better solution would have been to let the ATV leave the crowded cul-de-sac before moving the utility. This would have removed the firefighters from the side of the trailer and provided more room for the vehicle to maneuver. The department is in the process of reviewing our driver safety SOP. The revised policy addresses the need for safety during operations of vehicles around firefighters and the need for spotters.

10-247

Event Description

The following incident took place on the scene of a small two acre wildland fire in a rural mountain area. While conducting a shuttle operation, the driver of a water tanker was backing to my pumping engine. Without sighting me as his backer, he turned his vehicle around and began backing up toward the pumping engine. The driver accelerated backward with me standing between his tanker and the pumping engine. At this point, when I saw that he was not looking at me and traveling too fast in reverse, I looked behind me briefly to gauge how far the driver had before hitting my engine. By the time I looked back up to see where he was at, he traveled to within approximately three feet of the pumping engine. At that point I dove out of the way, landing onto the ground just outside of the area where the two vehicles collided. The bumpers of the pumping engine and the tanker hit right about where pelvis and upper femurs would have been affected. The discharge valve of the tanker was smashed back into the tank and the vehicle had to be taken out of service. This entire incident transpired over approximately 20 to 30 seconds. Had I not dove out of the way, my pelvis and femurs would have most likely been crushed, possibly leading to death due to severe trauma and loss of blood as the nearest hospital was approximately 40 miles away.

Lessons Learned

N/A

06-173

Event Description

On Tuesday, December 27, 2005, the (name deleted) Fire Department experienced its worst wildland/urban interface fire in recent history. Early into the incident, I was attempting to set up a command post in a residential area, where houses were being lost to fire. I was located near an intersection, with a fire department engine operating about a half-block away, uphill from me. Visibility was poor due to heavy smoke conditions. The operator of the engine, a 30+ year captain was alone due to reassignment of his crew on another rig.

As I was directing incoming units and standing outside the driver's door of my command vehicle, near the middle of the street, the engine's parking brake failed, allowing the engine to roll, unmanned, downhill toward my location. As the engine picked up speed, it veered off the roadway, rolled into a ditch, and hit a culvert, causing the front wheels of the apparatus to turn to the left. This caused the apparatus to change direction, cross over the roadway, and come to rest after hitting a residential structure located near my location. I never saw or heard the runaway apparatus coming my way. There is no doubt in my mind that I would have been injured, or worse, had the apparatus not turned when it did.

Lessons Learned

Personnel must be aware of their surroundings, regardless of how busy they may be.

A maintenance program for equipment and apparatus is extremely important. NEVER assume it is okay. Check it out.

When splitting personnel into different crews, be sure to maintain the appropriate number of personnel on each rig. Never allow someone to work alone.

09-699

Event Description

As a dozer operator, I was called to assist on a mutual aid call from a local fire department with a wildland fire that involved a field with sagebrush and woodland.

My first task after arriving on the scene was to unroll several burning bales of hay so they could be extinguished. This resulted in the dozer being coated with a layer of soot and ash. As I was preparing to leave the scene, the fire department assisted me by washing off the dozer. This also got the trailer bed wet. When I started loading the dozer on the trailer, as I attempted to straighten it, the dozer slid off the side of the trailer and crashed onto its side.

I had my safety belt on, but the impact still slammed me into the roll cage causing pain and bruising.

Lessons Learned

The great lesson I learned was, though I am grateful to the fire department for assisting me in washing the dozer, it should have been done away from the trailer to keep it dry and prevent slippage

09-243

Event Description

We had a 911 dispatch to a wildland brush fire and did not know there was a high voltage wire down. A firefighter stepped on the line and was partially electrocuted. Voltage went through the hand-line to the fire apparatus, which shorted out the batteries. The firefighter now has partial paralysis to his arm. If he didn't have fire boots on during the incident he probably would have been electrocuted much worse than he was.

Lessons Learned

When responding to any call, always have personal protection gear on. Also be aware of surroundings at the scene and always have situational awareness.

*National Fire Fighter Near-Miss Reporting System
Reports Related to Natural Disasters*

06-400

Event Description

I was dispatched to a wildland fire [place and date removed], I was on the first unit out, and we had about a 5 acre woods fire. I asked a worker from the site how that fire started and he told me that it was from a down power line. He told me that the power line was at the back on his property and it was dead. The fire was moving fast so we took our grass truck around to a right of way. I got off the back of the truck and pulled a red line and started fighting the fire. I went about 10 feet into the woods and I stepped on a 5600 volt power line that had been on the ground for some time. The line was under so much brush and trash that it could not be noticed. I was told at the hospital that the line was a 12k and was running 5600 volts through it and that I was lucky to be alive. I was rushed to the hospital by champion EMS personnel. I really do not recall much after that and to this day have not regained any feeling in my right leg. I cannot recall anything from this event that has almost taken my life and would have left my wife a widow and my newborn son without a father.

Lessons Learned

Keep your eyes open at all times and do not always trust what other people (civilians) say or think.

[Reviewer added] Treat every downed power line as if it were live until confirmed by power company personnel.

09-521

Event Description

Our engine responded to Division A of a wildland fire. Weather was hot and dry with erratic dusty winds. We were assigned to drive up a dirt road. With the aid of a 25 person hand crew, we were to protect a housing subdivision, keeping the fire on the uphill side of the road. Down-slope winds drove the fire faster than we could hold it. Two helicopters kept us from being burned over by dumping on our apparatus and us. The hand crew ran into a house. We got our rig turned around and retreated.

Lessons Learned

Situational awareness and slope wind. If orders seem to be unsafe, ask questions. Get clarification if not sure. Keep rigs on pavement if possible.

07-1022

Event Description

While working a wildland fire my right boot became stuck in "muck" close to a stream. I had known for sometime that the size 14 boot was two sizes too large and had failed to ensure that I got new ones that would properly fit. Our department had needed other equipment so I decided the cost would not outweigh what I needed...after all I have been on the fire lines for 30 plus years.

During this event, my boot became stuck in muck, and as I tried to pull it out the foot came out, which caused me to trip. When I fell backwards, my right ankle was burned by several hot embers. Although not life threatening, it created an on-scene void for our team. The injury took several weeks to heal.

Proper fit of all of PPE is a mandatory requirement. As the department safety officers, we are responsible for ensuring our personnel are protected including ourselves.

Lessons Learned

Ensure all personnel are properly equipped. Keep open communications with all personnel and have them report torn, damaged, or loose fitting equipment.

09-1048

Event Description

I was part of a wildland hand crew fighting fire in a national forest. A dozer was leading the way, cutting the line and pushing trees over. The hand crew was at a safe distance behind the dozer. At some point, without our knowledge, the dozer started coming back down the line in the direction of the hand crew. Just before coming into sight, the operator pushed over a large tree. The last 10 feet of the tree struck our crew, throwing us to the ground. The diameter of the tree was small but had enough force to knock our 4-man crew to the ground. Because of our PPE, helmets, etc., the injuries were minor.

Lessons Learned

Stay alert and don't become complacent on the line. Maintain good communication.

07-982

Event Description

I had just finished working at a wildland fire with a house in danger. When I was returning the truck to the station, I lost the brakes on a steep hill. The truck flipped twice sideways and landed on its side. My passenger and I where hurt and taken to the hospital. The brake line had dirt balled up on it and should have been noticed with truck checks.

Lessons Learned

All truck checks should be reviewed and make sure that they are being done right. Trucks should have air brakes so they will stop when you lose a line.

08-291

Event Description

This incident occurred while carrying out mop up operations following a wildland fire. Our brush engine crew was assigned to pick up hot spots and secure a cold line from Point A to Point B. As these orders were being carried out, being the firefighter on the crew, I noticed a handcrew from a different organization beginning a backfire operation. Conditions were hot and dry. The crew was located below us and it was apparent that we were in a canyon that was going to carry the fire to our position. Although open communications are encouraged within our engine crew, the fact of the firing operation beginning was not communicated to us by the handcrew. I was able to make the company officer aware of this potential situation. We discussed the location and route to our escape area provided we could not exit the area in time. The fire indeed blew up. We were using a hoseline to attempt to keep the fire under control. When it was recognized that the water was having little effect, we dropped the hoseline and ran along with the handcrew that was involved in the back fire operation. In our retreat we experienced extreme fire conditions (heated gases/smoke) and had difficulty getting to the safe zone. Our PPE showed signs of extreme temperatures and without the proper gear we surely would have been injured. Some minor burns were experienced.

Lessons Learned

Lack of communication between all personnel located on the division caused confusion and could have caused possible death or injury. Open communication within our crew allowed my speaking up when I noticed a dangerous situation (our culture is getting better at allowing this). Wearing the appropriate PPE is what prevented further injury. Regional training would help avoid miscommunication between different municipalities.

07-880

Event Description

We were involved with a wildland fire. The fire was actually started the day before. We were out the next day checking for hot spots. We came across a heavy area requiring us to remove a few trees by way of a chain saw. My partner and I started cutting the first tree that was in our way. It was about 6 inches in diameter and all of 30' tall. Falling victim to tunnel vision, my partner was cutting with the saw as I was standing behind anticipating the tree to fall in the direction we wanted. As the tree started to fall a third individual that was driving the brush rig noticed that a second tree was falling behind us

toward our direction. Luckily the second tree missed me, my partner, and the individual in the brush rig. There was no damage to personnel or equipment. At that time we realized that we never assessed the surrounding area except in the direction that we anticipated the tree would fall. It turns out that the tree we cut was supporting the second tree which had fallen some other time. As soon as we exited the woods we advised command of the incident. The situation would be shared at the next department training to remind everyone to be aware of your surroundings.

Lessons Learned

Check your surroundings.

Insist your partner checks his surroundings.

Evaluate together and discuss any potential danger.

10-864

Event Description

A neighboring department responded to an uncontrolled wildland fire. Upon arrival, the first arriving brush unit found a fire in the woods. As they worked on attacking it, they found a large amount of vines and growth from trees. A FF came in contact with an unseen downed 7200 volt power line and was injured.

Lessons Learned

A lot of the time we take brush or grass fires as an everyday thing (put it out and go home). I know that departments in our area will now look at situations like this differently.

10-747

Event Description

This was an arson wild fire that spanned three fire districts. A firefighter was struck in the head by a tree while fighting this wild fire. Unfortunately, the tree was being cut down by another firefighter but luckily he had all of his PPE on. He was taken to the local ER, was treated and released but will be off-duty for a period of time due to neck and back pain. An investigation is in progress.

Lessons Learned

Be careful and communicate when there are falling trees.

Make sure you wear all appropriate PPE.

Sometimes, structural firefighters do not take wildland fires seriously and tactics are incorrect.

08-364

Event Description

Our department was called to assist in a wildland fire in a mutual protection city. Our assignment was to station on the other side of the mountain that was burning and watch for the fire to crest the ridge. After watching for a few hours, we decided to turn off our over head emergency lights, as we where parked on the side of the road clear of any traffic, and we didn't want to impede traffic. A few hours later the fire seemed to be dying down. Any signs of a threat of it cresting the mountain were clearing, so we were cleared from IC to go home. Our rescue/brush truck radioed to dispatch that they were clear of the scene and heading back to the station, and I headed to our department's "chief truck". I was riding shotgun and had another member of our department driving. As he and I were about to get into our truck, a jeep pulled up on his side and started talking to him. As I reached for the handle to my door I saw a man driving a red [pick-up] about 60-80mph straight toward us. The firefighter driving my truck saw this red [pick-up] at the same time I did and started running away and shouting "GET DOWN, GET DOWN." I waited. I knew this man was going to hit our truck and I knew if I ran in the wrong direction, I would get hit either by the red [pick-up] or by our chief truck from the impact. I had two choices, either running down into a gully towards a river, or (inches) towards our chief truck. As I watched the truck coming for me, I saw the driver veer toward the gully and river, so at that instant I dropped to the ground in a fetal position and got very intimate with the front tire of our chief truck. As I dropped, the truck passed inches from me and the bed swung over my back. Miraculously he missed our chief truck and me by less than 18 inches. The firefighter driving the chief truck saw me drop as the truck passed me and thought I had been hit. As soon as the truck had passed, I jumped back up and we began the search for this red truck that just "rolled" off the edge of the canyon road. I radioed for help. We found his truck 400 feet from the road upside down and wedged into a thicket of scrub oak. When we got to the red [pick-up], the driver was standing outside of the truck holding a 9mm hand gun at his side, which was quickly taken from him, and he was strapped to a back board sent to the hospital and later arrested for DUI, among other charges.

Lessons Learned

We can not prevent stupid decisions of other people. As a department, and as firefighters responding or stationed at a scene, we should have left our overhead emergency lights on, as it draws attention and notifies drivers to slow down and drive with caution.

09-445

Event Description

*National Fire Fighter Near-Miss Reporting System
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While operating at 15,000 acre wildland fire, a brush vehicle began a fire attack in an area with no clear escape route. During the firefighting operation, the brush unit became stuck in soft soil and fire nearly overtook the unit with two personnel on-board. The brush vehicle sustained burn damage. The crew was not injured because another brush unit was able to attach a towline and pull the vehicle to safety.

Lessons Learned

*(Reviewer note: L.A.C.E.S. is the acronym for Lookouts, Communication, Escape Routes, and Safety Zones.)

Crews must maintain situational awareness, use the 18 watch out situations, and apply L.A.C.E.S.(*)to ensure safety awareness by recognition of hazards and minimizing exposure to known hazards. Human performance issues such as situational awareness, decision making, risk management, fire-line safety, and communication are crucial for risk management.

09-810

Event Description

Information in squared brackets [] has been de-identified by the reviewer.

E-[1]was engaged in fire suppression efforts on a spot fire in [location deleted]. The fire on this division was burning in medium to heavy brush. Two firefighters assigned to E-[1] were engaged in fire suppression. This was along the fire line in heavy smoke with intense heat conditions. Firefighter [A] complained to a fellow crew member of a scratchy throat moments after the exposure. The second firefighter complained of shortness of breath, which resolved on its own.

As the day progressed, E-[1] continued with suppression efforts on various spot fires through the division. Approximately eight hours later, firefighter [A] had a second onset of difficulty in breathing with weakness. An ALS engine was called to assess and treat the firefighter. Subsequently, the firefighter was flown out by helicopter to the nearest receiving hospital and then on to a burn center. The second firefighter was also assessed and transported to the hospital for evaluation.

Firefighter [A] suffered minor upper airway injuries and was in the burn unit for three days and one day in the medical ward. Since released from the hospital, he has returned to the emergency room for breathing problems and respiratory tract infections. He will, more than likely, be off-shift recovering for a long period.

Lessons Learned

RECOMMENDATIONS FOR IMMEDIATE CORRECTIVE ACTIONS

- 1.Maintain situational awareness at all times.

2. PPE is to be worn in-place during suppression activities.
3. Promptly report all injuries to immediate supervisors.
4. Provide updates on any situation change.

Maintain LCES (Lookouts, Communication, Escape Routes, and Safety Zones) on wildland fires. This crew remained at the scene to protect a crew that did not have a lookout present. The fire was burning up the draw from below, and the captain of the other engine company was out of radio contact. Eventually, the engineer hailed the captain with three horn blasts.

09-823

Event Description

On a six hundred acre brush fire, the fire was moving towards staged vehicles on the road. A storm front approached creating a fire storm. The fire crossed the road. Several firefighters were caught in the middle. The firefighters did not have fire shelters. The fire moved quickly making escape impractical. The firefighters hit the ground as fire passed overhead. No injuries occurred.

Lessons Learned

Better situational awareness: Understanding the hazards posed by weather. Firefighters needed shelters to deploy.

Corrective action: Fire shelters placed on all units.

Wildland urban interface training for all personnel.

10-1050

Event Description

Brackets [] denote reviewer de-identification.

On [date and time deleted], I was responding to a report of a wildland call. The apparatus I was driving was struck in the rear quarter panel by a drunk driver who crossed the center line of the county road I was driving on. I was running red lights at the time, but was within the speed limit. I crested a hill and saw him coming towards me up the hill. I tried to move onto the shoulder, but was unable to steer the apparatus far enough to the right in time. The other vehicle, a [manufacturer deleted] pickup truck, struck my left rear fender. I assume he must have torn the pickup's mirror off, though no damage could be seen on my vehicle (they're pretty well worn already). Both me and my rider heard the crunch of the impact. The other vehicle slowed, but continued to drive off. My chief, in his POV, was able to follow the vehicle to the residence and wait there until sheriffs deputies arrived. As of this time I have not been contacted by police.

No fire was discovered at the location we were sent to and as I had to work at the next day, I went home when we were released to get some sleep.

Lessons Learned

I feel I did all I could do to avoid this. But the crucial lesson here is to maintain alertness no matter the time of day or night, especially on crowded holiday weekends.

07-1015

Event Description

A fire crew was on the scene of a wildland fire in rough terrain. One individual was operating a department owned 6x6 ATV with a pump skid unit on the back. He attempted to reposition the apparatus for a better attack on the fire when he came to a particularly steep section of terrain. He paused to evaluate if he could make it up the hill. He decided he could and proceeded forward. The ATV immediately tipped over on the passenger side. The pump skid unit fell out of the back. The gasoline from the pump unit leaked out of the tank and came in contact with the manifold of the pump, which ignited the gasoline. The firefighter escaped the 6x6 by climbing over the unstable vehicle. The firefighter escaped down grade while the ATV quickly was overtaken by the flames.

Lessons Learned

Always wear a seat belt while in a moving vehicle (when available).

A positive outcome was attributed to the fact that the ATV had seat belts and was being used.

Know the limitations of equipment being used.

10-741

Event Description

Brackets [] denote reviewer de-identification.

On [date deleted] at approximately [time deleted], we were toned out to participate in an out of county type-3 (wildland) strike team to [city deleted] for the [name deleted] Fire. I was driving down [street deleted] to the meet up location where the strike team was to assemble and then leave together to the fire. While en route, I was driving in the outside lane on the highway with no traffic around me. An ambulance sped past me going code 3 in the inside lane. About 300 yards in front of me the ambulance moved into my lane at a 45 degree angle, cut me off and slammed on his brakes. I had to slam on my brakes and swerve into the inside lane to narrowly avoid hitting the ambulance. I was traveling about 65 MPH. When I braked and swerved and then compensated to stay in the inside lane, the rear right tires of the rig actually came off the ground. We later

found out that the ambulance thought that they had to get off the highway on a side road that they were about to pass, but it turned out to be a few miles ahead.

Lessons Learned

All drivers should be more aware of their surroundings.

05-352

Event Description

(Geographic location deleted) wildland fire, (XX) miles east of (city, state deleted). Air space incursion, TFR in place. (Flight Restrictions)

While flying as an Air Tactical Group Supervisor, during the afternoon shift, at an altitude of approx. 8500 ft., a twin engine aircraft entered the airspace at same altitude. While in a right turn, aircraft was observed by pilot and evasive action was taken. Aircraft passed behind and was within a 1/4 mile. Aircraft should have not been in the area.

Lessons Learned

Lesson learned. Always keep your eyes in the sky and be aware that any aircraft can enter over a fire area unannounced. Aircraft was identified and related information given to the FAA. Private aircraft when flying need to pay more attention to NOTAMS (Notice to Airman) for fire information and flight restrictions. Air Tactical Supervisors are the eyes in the sky not only for other aircraft working the fire but for the safety of all on the ground. Good coordination between pilot and ATGS are essential to the mission and in this case it shows that we work as a team.

10-964

Event Description

Brackets [] denote reviewer de-identification.

We responded to a wildland fire off highway [x], above [location deleted]. We tried to contain fire to the north side, off highway [x]. The road was mid-slope. As the fire was backing down the slope, wind gusts carried embers overhead, and ignited the brush below us. We were caught mid-slope and had to evacuate our positions. As we drove away, the smoke was very thick and visibility was very low. We made it to a large pull out area and deployed hoselines to protect us from the fire.

Lessons Learned

Always be mindful of the weather and wind conditions. Be aware of spotting and at all possibilities don't be caught mid-slope. Have an escape plan and don't panic.

08-126

Event Description

On a windy afternoon department "A" was called to assist department "B" on a large wild fire. The fire in its southeastward movement was being pushed by 35-45 MPH northwest winds. The fire was approaching a major highway running north and south. An attempt was being made to keep the windblown fire from jumping the highway. There would not be another opportunity to try and stop the fast moving fire for another 15 miles or until it got to another paved roadway.

While protecting a major highway from an approaching wildfire in dense smoke, a brush truck from department "A" was slowly moving south in the south bound lane when a POV approached from the rear. The driver lost sight of the vehicle in his rear view mirror. When the driver saw the vehicle again it had passed the brush truck on the right shoulder and was making a "U" turn back toward the truck from the borrow ditch. Out of reaction, the driver of the brush truck jerked the steering wheel to the left placing his truck across the center line of the roadway. It was then that department "B's" brush truck was going the opposite direction at a much greater speed and collided head on into department "A's" brush truck entrapping a firefighter that was riding on the front.

Lessons Learned

Department "A" should review and revise its policy and procedures to remove firefighters from the front of brush trucks.

Make it mandatory that fire equipment not be allowed to operate on a roadway surface when visibility is compromised. Coordinate with law enforcement to shut down the roadway on both ends to ensure that only fire equipment is in the visually compromised area.

Finally, mandate that any time fire equipment must operate on a roadway surface when visibility is compromised they not get out of first gear. Hopefully, they would not be able to drive faster than they could react.

09-357

Event Description

I was the engine boss with an operator and firefighter. We had a fast moving wildfire with 70 MPH winds. My operator didn't know his equipment well and it was the firefighter's first fire. Things were going quickly and I asked my firefighter to get in the cab. I didn't have time to show him how to work; he kept freezing up. We were holding a road, mobile attacking. I was on the nozzle with full PPE, goggles, and shroud down.

I needed to go back to a spot so I had the operator back up. He didn't know that you could pump in reverse, so he shut the pump down to back up. When he did this, I lost

water and became completely engulfed in flame until I ran behind the brush truck. The hose was slightly burned, if I had not worn my goggles and had my shroud down, I would have burned my entire face.

Lessons Learned

The lesson was to make sure my operator knows his equipment.

Train the firefighter to know his job.

Make sure I'm not on the nozzle when I should be overseeing the crew.

09-660

Event Description

While fighting a wildfire in a rural area, we were relocating to a different position. A number of us were riding on the back of a brush truck when we hit a large hole in the rough road. The impact knocked me off the brush truck and threw me onto the road. After falling off the truck I became unconscious and had to be carried out of the woods on a stretcher. I was then carried to an ambulance and transported to the hospital. I woke up slightly before getting to the hospital. I was found to only have a slight back strain and was sent home after spending several hours at the hospital.

Lessons Learned

The lesson learned was that you should not ride the back of any vehicle that is not equipped to handle multiple individuals. Even if it takes longer to get the job done, it is better to be safe than to possibly cause someone an injury that could be fatal. No fire is worth risking someone's life.

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

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08-244	F3 tornado endangers crew	21
09-177	Tornado narrowly misses fire station.	22
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09-498	FFs standing near downed power line.	24
11-163	Unseen electrical line endangers FF.	24

08-238

Event Description

The local weather service issued a tornado warning for all of the local county. The news media tracked one potential tornado on the ground within the jurisdiction of this fire department. Fire service crews were aware of the warnings, however they did not have a total awareness of the situation. The on duty Battalion Chief allowed crews to respond during the tornado warning. The response that generated this report was a false alarm activation that placed four apparatus and seven people in the direct path of a tornado. The tornado damaged two apparatus and trapped emergency crews from entering the area as a result of fallen trees and debris.

Lessons Learned

Lessons Learned: Do not respond to calls in the path of a tornado. Should a tornado warning be given, crews should update themselves to the situation by watching local news outlets about the storms path.

Prevention: Training and accountability are the two suggestions to preventing this from happening again.

Corrective Actions: Complete a comprehensive investigation to ensure all facts are identified. All crews will be asked to review standard operating procedures concerning response during inclement weather situations. Training will be required to reinforce guidelines and command decision making. Accountability for poor decision making will also aid to reinforce the safety culture of the department.

08-244

Event Description

On above date, our fire department responded to a reported fire alarm. Control had sent out a page approximately 3 hours before, stating that the county was under a severe thunderstorm and tornado watch. A new firefighter and I responded to the scene and were first on scene. The new firefighter put on full PPE, with the exception of SCBA and structural firefighting hood. I placed my helmet and coat on, without the chinstrap of my helmet secured. The engine arrived shortly after we did. We were directed by a senior firefighter to conduct the walk around of the structure. While walking from Division A to Division D, the wind started to pick up. Our walk around of the structure could not be completed, due to a fence blocking us at Division D. We backtracked and walked to Division B. At that time, the wind got stronger. The new firefighter and I heard a tree start cracking, and we ran for the truck. An F3 tornado had just touched down across the street from where the fire alarm was located. The new firefighter, a senior firefighter, and I were all thrown a minimum of 5 times. The senior firefighter and I both lost our helmets during one of our falls; one helmet was found over 1500 feet away from the scene of the fire alarm. During our attempt to get to the safety of our

engine, the tree that was approximately 30 feet away from us was uprooted and fell, blocking the roadway. The wind was blowing so hard that it was impossible to open the door to the cab from the driver's side; we had to run to the passenger's side to get into the safety of the cab.

Lessons Learned

Proper PPE should be worn at all times, including chinstrap buckled and gloved. If the tree that was uprooted had fallen onto us, my helmet would not have provided much protection without the chinstrap buckled. Also, if the house where we were investigating the fire alarm had been destroyed by the tornado, we would have become buried and trapped by the debris. My chance of survival would have been decreased by not wearing proper PPE.

Control has access to weather conditions 24/7. There is a monitor placed near the ceiling dedicated to weather monitoring. Although a page for a general tornado warning was given, control advised us, after we radioed that we were taking shelter from the extreme conditions, that the weather was bad! They saw the cell of bad weather coming and could have advised us to take shelter. The cell that hit us was hot pink, which indicates extreme weather conditions.

I learned that Situational Awareness is critical at all times, even during the most extreme events. Approximately 30 seconds before the tornado hit, I noticed that we were under power lines. I told the new firefighter that due to the winds, we should move away from the power lines. If the lines had fallen during the tornado, our exit would have been blocked by the lines and the fence at Division D.

09-177

Event Description

I was called in to duty at Station [1] during a severe weather storm with verified tornado touchdown. The time was about 0330 hours. Rain was intense for about 16 out of the 18 mile ride. When the rain cleared, there was an eerie silence. The clouds were moving east under a constant wind.

I arrived at Station [2] to pick up my gear and report to Station [1]. The rest of my time there, I spent running errands. The last thing on my list to do was a breakfast run for the guys who had actually worked that night. As I turned into the drive at Station [2] (my station), I noticed something was different. The sun was rising by now and the skies were completely clear. As I made my way around the drive to the back, I realized what was different. Station [2] sits on the south side of town with a training ground behind it. There is a tower, PAT course, car fire simulator, single-wide training trailer complete with maze, hose station, and a thick shadowing tree line that wraps the east and south perimeter. Now only the east side was there. That was the difference. The tornado had taken out the trees about 200 yards from the station. I can't even imagine what the guys

were thinking when they got back and realized just how close the tornado came to them. They said they heard an awful noise like a freight train but then the tones dropped and they left thinking nothing else about it. The tornado was determined to be an F-2, 200 yards wide at the time of touchdown, destroying several homes in our response zone. The storm was said to have weakened and lifted just after destroying trees behind the station. All the training equipment survived, so it's business as usual.

Lessons Learned

Consider the disaster scenario for a station hit by a tornado. What could you do to help them and the community? How would you overcome the loss of trucks and staffing? Cut down trees to close to the station.

06-260

Event Description

Our department was conducting defensive fireground operations at a large commercial structure. Building was a non-sprinklered, concrete tilt wall construction approximately 20,000 square feet with 50 % involvement. Tenant space involved was a flooring business with carpet showroom and storage. Approximately 30 minutes into fireground operations our area was placed under a severe thunderstorm warning. This weather warning was upgraded to a tornado warning. Doppler weather radar indicated a possible tornado 15 miles west of our location moving east. The leading edge of the storm was producing heavy rain and lightning and had reached our location. Incident Command was in place and our command staff was in constant contact with local emergency management officials on the impending weather. Weather conditions and a threatening tornado made fireground operations unsafe. Incident Commander made decision to suspend all fireground operations and advised all personnel to seek shelter in business next door. Two firefighters were positioned in the platform when order was given to suspend operations. They exited the platform by climbing down the ladder of the platform, leaving the ladder still in the raised position. Within 30 seconds after the last firefighter had dismounted the ladder and was seeking shelter, the platform was struck by lightning. Our personnel forced entry into the business next door and over 30 firefighters were moved to interior hallways for protection. While sheltered in the building emergency management officials advised us that trained weather spotters had spotted a funnel cloud 1/2 mile east of our location. Fireground operations were suspended for approximately 30 minutes because of weather. After it was safe to resume operations we found our ladder was inoperable after the lightning strike and stuck in the raised position. It has since been returned to the manufacturer for repairs. Had the Incident Commander not made the decision to suspend operations we would have had at least two firefighters seriously injured as a result of the lightning strike.

Lessons Learned

Lessons Learned:

During threatening weather the Incident Commander must stay in contact with outside agencies and local media to determine if it is safe to continue fire ground operations. Local TV media had interrupted local programming to cover the tornado threat. We had one person in contact with a local TV weather meteorologist who was tracking the storm and one person in contact with local emergency management officials who were receiving information from weather spotters and the National Weather Service. Information from both sources was passed to the Incident Commander which allowed him to make a sound decision that prevented serious injury or death to firefighters. Local TV media has resources that can be of value to the Incident Commander. Call upon these sources. They are more than willing to provide information on potential weather threats.

09-498

Event Description

The unit I was on was dispatched to a report of a structure fire. The initial response time was delayed for my unit because of weather conditions. The weather conditions at the time were heavy rain and wind in excess of 60 MPH with tornado warnings in the area and active lightning. Upon arrival my unit found a single story family dwelling heavily involved with fire on Side A and C of the structure. While making a primary attack on Side C of the structure, two firefighters on the operations crew, were made aware of a down power line. The line was approximately 10 feet from where they were standing. With the current weather conditions there was standing water in most all locations on the fire ground.

Lessons Learned

Keep your situational awareness at all times. Don't let excitement or tunnel vision keep you from using safe practices.

11-163

Event Description

A full alarm was assigned to a fully involved structure fire in the early morning. Dispatch advised that neighbors called in the fire and that the house was vacant (per the owner who was also the caller). Upon arrival, the first-in engine reported a fully involved structure fire, and that they would be operating defensively. The first hand line was placed on the "D" side, to protect an exposure. After a water supply was established, two additional hand lines were used to extinguish the fire.

After approximately 30 minutes, the lieutenant of the first-in engine was assisting in the operation of a hand line on the "B" side of the structure. While attempting to re-position the line, he felt his knees lock up and his hands clamp down on the hose and a burning/tingling sensation throughout his entire body. Not knowing what was

happening, he attempted to move away from where he was standing toward his partner to get help. After 3-4 seconds, he was able to move. After moving, general pain replaced the sensation he had been feeling. He looked around to see what caused this situation, and found that he had been standing on a main service line coming off a transformer. The line was the electrical line that supplied the house with power and had apparently burned off the house and fallen into knee-high grass.

Once he realized what had happened, he reported the line to IC, and requested traffic cones to mark the line until the power company could arrive and disconnect the line. After marking the line, he reported the incident to IC, who pulled him off his duties and replaced him with another firefighter. He was immediately sent to an on-scene ambulance for assessment, to include 12-lead EKG monitoring.

The hour of the call and lack of sleep due to that night's tornadoes perhaps contributed to the loss of situational awareness. This accompanied by debris from the storms and knee high grass could have possibly kept the line from being readily visible. The nature of the fire being simple "surround & drown" perhaps also led to a sense of complacency in a veteran firefighter/officer.

Lessons Learned

I learned to be more vigilant of my surroundings and to ask the occupant/owner about utilities (if time permits). I also learned to light up the scene sooner and to look for wires coming from the poles, not just the meter on the house.

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

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08-460	Lack of water supply, command presence, creates hazard for crew.	27
09-772	FFs work in environmental hazards.	29
10-644	FF endangered by flying debris during storm.	29
05-421	Swift water mishap in full turn-out gear	30
07-681	Tiller cab hits downed powerline causing serious injuries to tillerman.	30
05-656	Lack of training at command level leads to poor decision making that jeopardizes crew during fire attack.	31

08-460

Event Description

On [date deleted] our department responded to a reported structure fire during the remnants of Hurricane [deleted]. Heavy rain with winds gusting to hurricane strength was causing multiple responses to a variety of incidents. At the time of this incident the department was responding to 3 separate structure fires. Because of this the response was piecemealed to make up a structure fire response.

One firefighter, who was standing by at an arcing wires call not far from the incident, responded to the scene. The firefighter never told dispatch he was responding. When he went to give a report he was told to "stand by" as dispatch still thought he was at the arcing wires call and they were in the process of dispatching structure fire responses. The firefighter on the scene did not state "urgent message" or "priority traffic" or any communication that would have clued the dispatcher to answer. The firefighter did not take command as required by ICS, as well as in local county and department protocols.

The first engine on scene reported a heavy smoke condition in the area and then found a two-story wood frame dwelling with 50% involvement. The apparatus driver stopped at the hydrant and the lieutenant ordered him to "go right in". In speaking to the lieutenant after the incident, he admitted he had "moth to the flame" syndrome. His engine carries 700 gallons of water. The first due firefighter did confirm that all occupants were out of the house.

On arrival the lieutenant failed to take command, as he thought the shift commander was close to being on location. The crew then pulled a 1-3/4" line to fight a dwelling involving 50%.

The second engine arrived on location and was sent to the hydrant per department SOGs if the first unit had not already down so. Despite computers on the apparatus that show hydrant locations, the hydrant could not be located due to visibility. Later it was reported the computer system had gone down.

I arrived as the shift commander and took command, but did not seek out the first arriving lieutenant as I should have. With 2 engines on location I "assumed" a water supply had been established. Had a water supply been established I would have initiated a "blitz attack" with a deck gun, due to the amount of fire and storm conditions.

A 2-1/2" line was ordered to the front door and up the stairway to the second floor. Shortly afterward I was informed there was a hole in the floor just inside the doorway of Side A. Due to the extent of fire, the storm, and the report of a hole in the floor, all crews were ordered out. It should be noted here that they had made little interior progress anyway.

A neighboring fire chief arrived on location and was assigned to Side C. We conferred about going to a second alarm assignment but were in agreement that due to the storm

all neighboring resources were also taxed and that since it was now a defensive operation additional resources would not be of any use. The department's fire chief had arrived on location and was assigned to Safety and Accountability. With all units ordered out of the building a PAR was conducted.

About this time I asked if a water supply had been established and was told yes. However, the captain on the third due engine reported that I did not have a water supply. The second engine in, with a crew of four, not being able to find the first hydrant, left one firefighter to establish a water supply. This consisted of him hand jacking 4" LDH for about 500'.

As the fire became under control, I ordered a crew to Side C to get into the interior and start to extinguish the rest of the fire and then begin overhaul to ensure the fire was out. Doing this I, as the IC, failed to notify Safety of my change in strategy. So while I was ordering one crew in, he was ordering them out per the last report.

The incident started because when the power went out, the homeowners had lit candles in the living room. They heard their small children, the youngest being 3, yell "Fire". The father evacuated all of them and his wife out of the house and went back in to find the couch on fire. As he attempted to smother the fire on the couch with a blanket the curtains became involved and he left to call 9-1-1.

A review of the radio tapes later found that it took approximately 22 minutes to establish a water supply.

Lessons Learned

Lessons learned: The importance of first in units taking command. With command established it forces senior officers arriving on scene to physically talk to you before command is transferred.

Often when you review close calls, near misses, or fatalities, there are a number of small events that occur and together they lead to injury or death. Considering the possibilities at this incident, our department had a lucky day that there were no injuries.

The need for establishing a water supply can never be over emphasized.

Communications: When there are difficulties, such as failing to find a hydrant, or a change in tactics, those must be communicated to the IC, and/or the IC to all on the fireground. We need to use terminology such as "priority traffic" or "urgent" to break into communications to allow dispatch to acknowledge the call.

To correct this we critiqued the incident from all angles. On the on-duty shift involved we did a number of practical evolutions set up from the NFPA.

We reviewed Incident Command and communications including the department's mayday parameters.

09-772

Event Description

I was assigned as an EMT/Firefighter to a two person ALS rescue unit and was dispatched to a report of a person struck by lightning. The weather conditions were dark clouds with light rain, a heavy amount of lightning, and a hurricane that had just missed the area. The person was located on the beach. Additional calls to 911, reported that there might have been multiple people struck. The senior person (paramedic) on the ALS rescue unit did not request additional resources.

Upon arrival, we parked in the closest parking lot and made our way to the patient that was located on the beach. We found four individuals that were standing next to a large piece of steel rebar. The rebar was stuck in the sand when a bolt of light struck the rebar. One individual was touching the rebar when it was struck. That patient was found to be in cardiac arrest. The other three individuals had some extent of non life-threatening injuries. Additional resources were called.

While we worked the patient that was found to be in cardiac arrest, there were at least two lightning strikes in the area. I felt that our safety was in jeopardy. A police officer (that was out on the beach assisting us) left the beach and did not return due to the conditions. When additional resources/personnel arrived on the scene, we continued to work on the patient rather than load the patient onto our beach utility vehicle and take the patient to an area of safety.

Lessons Learned

I feel that the lessons learned were to call for additional resources quickly, early, and often. I also feel that if given the same situation, I would not continue to work on the patient in such a volatile weather situation. I would move the patient to a safe controlled environment.

10-644

Event Description

Our engine was dispatched for debris in the road outside of an airport during a hurricane. The high winds ripped off part of a hangar roof and tossed it into the roadway. Our engine blocked traffic and I was ordered to control traffic on the opposite end. The weather conditions deteriorated and the engine sought refuge behind a four story building from flying debris. As the engine passed by me, a cracking noise was heard and a 10x14 piece of plywood ripped off the hangar roof. I quickly exited the area and the roof section landed where I was standing.

Lessons Learned

Situational awareness and decision making in weather conditions is important. I should have never been standing there and should have been in a safe area.

05-421

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.

07-681

Event Description

Hurricane [name deleted] had just passed and our station was on damage assessment and checking buildings that were damaged. Our response on this incident was routine. The engine and a tiller ladder truck were returning back to the station after our response. We were working on our 32nd hour of duty. The ladder, which had 2 drivers (1 driving and 1 in the tiller cab) and a captain, was heading northbound at a speed of about 25 MPH and traveling in the left lane of a 4 lane road. As the ladder approached the station a police car pulled in front of them and stated that their tiller driver was in the street 8 blocks south. The driver and the captain got into the squad car and went to

the scene where they saw the driver in the street with critical injuries and a tiller cab that was demolished. The tiller driver suffered [deleted, multiple traumatic injuries]. It was determined that a low hanging power line hooked the tiller cab and tore it off the truck. The driver of the ladder had no indication that anything was wrong. The ladder truck was a 100 foot [brand deleted] tiller drawn truck.

Lessons Learned

The tiller cab of this truck offered little protection to the person in the cab. It was hard to see a power line hanging low but maybe it could have been recognized. A rain lip on the roof of the cab caught the power line and that should be redesigned.

05-656

Event Description

A structure fire occurred during the final hours of Hurricane Wilma. It began as a car on fire beneath the structure. It extended through the wall to the roof of the structure. The building was a pre-fab, balloon construction, truss roof. The (deleted) IC directed a firefighter to check the roof for ventilation. The firefighter climbed the ladder, and without accessing the roof, reported the roof had self ventilated. The IC direction was to "go ahead and cut a hole anyway" There was a fire crew inside the structure as well and was not advised of the fire through the roof. Interviews with the interior crew determined at that time they were still not aware the fire was in the walls or the roof. They were searching for extension with a TIC.

The vent team admitted not knowing any better and prepared to ventilate. When his partner was bringing the roof ladder up to set, he took three steps onto the roof and fell through to his chest. If this was any other firefighter it is generally accepted that they would not have been able to self rescue, but this firefighter is exceptionally fit and pulled himself out. He later attributed this to adrenaline and the fact that the fire was burning directly beneath him. He came down and reported to the IC who is not a Firefighter I, II, or trained officer but holds a (deleted) Chief title. The Chief, aware of the situation, did not immediately order the evacuation of the building regardless of suggestions by another firefighter on scene. The structural stability had already been proven as dangerous. The firefighters had to take it upon themselves to pull the evacuation order, air horn blast. This IC has not been investigated or suspended pending investigation regardless of all efforts of members.

Lessons Learned

Severe lack of training was exhibited by the IC and the firefighter on the roof.
Certification should be required for the position you occupy.
Full investigation should have been initiated immediately.
Unsafe orders can be refused.

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

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10-990	Airbag deploys during flash flood.	37
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07-1054	Conflict regarding roadway protection for FF's	39
07-868	Boat overturns tossing FF's into water.	39
05-421	Swift water mishap in full turn-out gear	40
09-201	Rescue boat needs to be rescued during flood.	41
09-1052	Boat breaks down during water rescue.	41
10-522	Fall into unseen pool results in FF injury.	41

07-868

Event Description

During a major [Rain and wind] storm that hit the [local area], several areas in [State deleted] were impacted by heavy localized flooding. While assisting a neighboring department with their overloaded call volume, we were dispatched to an area of town known for flooding to assist with a reported car under water with a person on the roof of the vehicle. Upon arrival, we saw two personnel heading out in the flood in a lightweight aluminum boat to check for victims. My crew and I began walking up the side embankment to a railroad bridge above the scene. We found the police department performing CPR on a victim they had removed from the water prior to our arrival. We began assisting with resuscitation efforts while the crew in the boat continued searching for any other victims.

Without warning the boat capsized and sent the two firefighters into the cold flood waters. Immediately, a fellow firefighter and I slid down an angled concrete wall and grabbed a hold of both firefighters. After a long struggle, we were able to gather ropes and ladders to remove them from the water. The members were evaluated by EMS after being removed from the water.

Lessons Learned

After reviewing the events of the evening, several lessons were learned when operating at this type of call. Paramount was the fact that neither member had a life jacket on. This simple piece of equipment would have allowed the members to stay afloat without a struggle and without the necessary assistance of members operating in a dangerous position. In addition, members should be trained on the proper operation of the boat. This should include the importance of evenly distributing the weight across the boat in order to prevent it from tipping.



06-065

Event Description

On-duty during significant flooding event and was acting operator for the shift on a light rescue, 2 personnel. While responding to a confirmed structure fire there were only 2 roads for access to the neighborhood where fire was located. One road had been closed due to flooding but since flood waters had started to recede, we decided to try it, since alternative route was considerably longer. Past one area of roadway covered with water w/o incident but then came upon a significant amount of flowing water over roadway, completely obscuring road. Water was approximately 2-3 feet at deepest and moving pretty fast. Stopped staring at road, or lack thereof, within visible distance of major amount of smoke showing while bystanders are waving at us. We placed vehicle in 4 wheel and went for it, barely making it across. Water flow could have pushed us into a 10-15' X 20-25' deep ditch that was already completely over its banks. Later realized vehicle had locking hubs and was never in 4 wheel. Structure fire was involved garage

submerged in 3-4 feet of water which required crews to stretch lines from dry ground through floodwaters to fight fire.

Lessons Learned

- 1> Know your equipment. Being the operator that day, acting or not, I should have been familiar with that rig.
- 2> Try not to get caught in the moment. We were more worried about what the public would think by us turning around than if we could make it.
- 3> Consider the situation. Was the road still even there under the water? I didn't contemplate that until right in the middle of it.
- 4> It's good to be lucky but that can go away at any moment.

06-122

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.

09-576

Event Description I was working during a flooding storm and my uniform was soaking wet. I returned to the station to change, and was dispatched to another call. I slid the pole with a wet uniform, causing a free fall to the bottom of the pole.

Lessons Learned

Never slide a pole with a wet uniform.

08-421

Event Description

Dispatched to verify the status of a road during extreme weather (Rain). We found a road in a low lying urban area that was prone to flooding. The road already had several inches of fast moving water across it. The decision was made to close the road down. Traffic barrels were available due to road work in the area. The flooded road was blocked at the two closest intersections, preventing access to the flooded area and diverting traffic to other streets. 4 barrels (Size equivalent to a 55 gallon drum) were used on each side along with flares to close the road. We were waiting for the Police to arrive to secure the road. A car came around a corner at a high rate of speed saw the barrels and slammed on his breaks. With the high rate of speed and the slippery surfaces, it was quickly apparent the driver had no control of his vehicle. This caused myself and the 3 other FF's to run out of the way; we were narrowly missed. The fallout could have been catastrophic had he struck the four of us.

Lessons Learned

We were aware of our surroundings and we were able to get out of the way to safety quickly. It is important to remember just because you are aware of your surroundings, it does not mean everyone else is. When on a roadway in a similar situation it is wise to put yourself in a location that has the least amount of risk associated with it. It would be foolish to assume that all motorists would see the 4 large barrels , 3 road flares , and a large fire truck blocking the roadway.

10-990

Event Description

While responding to several rescues involving occupants trapped in vehicles during a flash flood, we utilized several different tactics to remove the occupants from harm. On this particular event, we found an occupant stuck in her vehicle in knee deep water. Due to the weather and the debris on the street under the water, we determined the best way to remove the occupant from the hazard was to have her place her vehicle in neutral and push the car approximately twenty feet in reverse to higher, dry ground. Three firefighters took a position on the hood and I took a position to lean down and push on

the driver's side “B” post. There was no impact to the vehicle, it was just stalled and stuck in the water. We began to push the vehicle in reverse and, instantly, the steering wheel air bag deployed. I immediately received hearing loss in my left ear from the detonation blast that triggers the air bag and it stunned me. I was taken to the ER for evaluation and followed up with a specialist to determine if there was permanent hearing damage. It was found that the damage was only going to be temporary and would only last a couple of weeks. The specialist advised that this could very well have caused permanent damage. The occupant, fortunately, was not injured in this event.

Lessons Learned

After the incident, we did extensive research and found that the Air Bag Control Unit (ABCU), which reads the sensors and triggers the air bags, is commonly located under the floor mats or driver's seat. This puts it in a low lying place and is subject to water damage. Water damage has been known to trigger air bag deployment. This can happen instantaneously or even days or weeks after the initial water damage. There are documented cases where air bags have deployed after vehicles were subjected to flooding. There are no cases where a firefighter has been injured in these circumstances that I could determine. Air bag deployment can result in noise levels of 165 to 175dB and they deploy at 3,000 to 4,000 lbs per square inch. This can cause severe hearing damage if your head is near the air bag and, if impacted, can cause severe injury or death. Manufacturers recommend that if a vehicle is involved in a flood, immediately disconnect the battery and have it towed. We are changing our SOG's to reflect this and to protect the occupants by immediately removing them from the vehicle.

10-606

Event Description

Our area had experienced three days of rain. There was flooding in low lying areas. We responded to a flooded basement in a two story cape house. We went into the basement to pump out two and a half feet of water. When the water got down to one foot left, I found family photos floating in the basement. I waded into the water to collect the photos and save them for the homeowners. About ten minutes after collecting the photos, I saw a glowing orange light at the base of floor. It was a power strip with several items attached. The electricity was still on and I am surprised we did not get zapped. We had used a generator for electric pumps and also a gas powered pump!

Lessons Learned

We were under the assumption that the power was off. We thought there were no electrical hazards under the water. We should have considered all hazards and what was in the basement. Is it a finished basement, etc.

We learned to assess "all calls" not just fires.

We found out afterward that some circuit breakers tripped and that power was still on!

07-1054

Event Description

At approximately 0800 hours, 2 command staff members and 2 firefighters were instructed to take the squad and brush truck east of town to the two-mile section of a highway that was closed because of flooding. We were instructed to enter the closed section and clear debris so that the road could be opened back up after inspection. The squad commander communicated with the brush commander in reference to parking the fire units across the roadway. This portion of highway was legally closed by [organization name deleted]. The reason for this positioning was to provide a safety barrier for the crew cleaning the roadway. Traffic was still traveling on the roadway. If crews were not interrupted while cleaning, it would only take a fraction of the time to finish the job. The brush commander thought it was a good idea so the squad commander parked the truck across the closed highway. The brush commander did not do so and created confusion for the squad commander. While the squad team started on their end of the highway, they came upon traffic trying to make their way through the closed road. Some of the traffic personnel were not happy with the truck parked across the road. While the squad commander talked with the individuals, one person in a pickup truck decided to drive around traffic on the gravel side and proceeded around the squad. While this person proceeded to do this, he almost ran over the squad commander. The squad commander communicated by radio to the brush commander to look out for the pickup truck and get the license plate number. The truck proceeded past the brush crew at a high rate of speed and nearly ran them over. After that 5 minute disruption, we continued to clear debris off the roadway. It only took approximately 5 additional minutes to clear the roadway. After getting back to the station we were confronted by a civilian about blocking the closed road. We did not have our chief's support about the whole event. The chief told the squad commander that keeping the road unblocked is more important than the safety of the firefighter crews cleaning the roadway. He said if we were police officer's then we could block the roadway. He even drove through the scene and didn't say a word about the squad blocking the roadway. A sheriff deputy drove through the scene and did not say anything about our positioning.

Lessons Learned

- Better communications.
 - Have more personnel at the scene.
 - Have law enforcement officials stage at both ends of the closed road if possible.
 - When an idea is established and approved, stick with the plan.
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07-868

Event Description

During a major [Rain and wind] storm that hit the [local area], several areas in [State deleted] were impacted by heavy localized flooding. While assisting a neighboring

department with their overloaded call volume, we were dispatched to an area of town known for flooding to assist with a reported car under water with a person on the roof of the vehicle. Upon arrival, we saw two personnel heading out in the flood in a lightweight aluminum boat to check for victims. My crew and I began walking up the side embankment to a railroad bridge above the scene. We found the police department performing CPR on a victim they had removed from the water prior to our arrival. We began assisting with resuscitation efforts while the crew in the boat continued searching for any other victims.

Without warning the boat capsized and sent the two firefighters into the cold flood waters. Immediately, a fellow firefighter and I slid down an angled concrete wall and grabbed a hold of both firefighters. After a long struggle, we were able to gather ropes and ladders to remove them from the water. The members were evaluated by EMS after being removed from the water.

Lessons Learned

After reviewing the events of the evening, several lessons were learned when operating at this type of call. Paramount was the fact that neither member had a life jacket on. This simple piece of equipment would have allowed the members to stay afloat without a struggle and without the necessary assistance of members operating in a dangerous position. In addition, members should be trained on the proper operation of the boat. This should include the importance of evenly distributing the weight across the boat in order to prevent it from tipping.

05-421

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.

09-201

Event Description

During the flood of [date deleted] we were dispatched for a water rescue with our hovercraft. After working for several hours and rescues, the weather drastically turned colder causing everything to re-freeze. This change caused the motor of the hovercraft to freeze up during a rescue. The operator and a victim were stranded and floating down the flooded area. The hovercraft struck several trees and the two occupants were thrown into the swift water. They both were able to latch onto two separate trees and were rescued several hours later after several attempts by helicopter and finally by a second boat. This was done only after the water receded. Both victims suffered hypothermia. The total time from the accident to rescue was two and half hours.

Lessons Learned

Monitor weather conditions.
Know the limitations of the apparatus (hovercraft).
Have a backup plan.
Practice better decision making.

09-1052

Event Description

We were conducting a water rescue in a flood-stage river in a gas powered boat. The crew started out in the river when the gas line came loose and the motor stopped. The boat operator was able to reconnect the line and regain control of the boat.

Lessons Learned

Run all equipment and check all fittings before rescue attempts.

10-522

Event Description

Following three consecutive days of 65 degrees plus temperatures with steady rain, snow melt and ground thaw, several hundred basements in our community flooded. Our

department pumps out basements that flood as a public service. Our department on average does 250 runs per month (fire and EMS). On this date the department did approximately 150 calls in a 24 hour period (two engines, one ladder, one transporting rescue/ambulance, and a car).

The firefighter who was injured was assigned as the back step on a three man engine company, and was setting up a sump pump - running a discharge hose out a basement bulkhead. While coming out of the bulkhead into the back yard of the building, there was a pool cover approximately two feet outside of the bulkhead. Weather conditions were moderate/heavy rain and it was dark. Not realizing how close the edge of the underground pool was to the house, the firefighter stepped onto the pool cover and fell into the shallow end of the pool, wearing his bunker pants and boots. While trying to catch himself while falling, the firefighter was injured. Now that firefighter is on IOD status for several weeks.

Lessons Learned

Suggestions to prevent a similar event; the department can issue 3/4 boots for flooded basement calls instead of having firefighters wear structural firefighting bunker gear. Have a fourth man assigned to the engine company so that the company officer can better ensure scene safety for his company. Have a safety officer brought in on the shift so that appropriate re-hab time can be allotted for the companies to reduce fatigue and carelessness. Put a reserve engine into service to distribute the work load; minimizing the fatigue to the men who are assigned to suppression, but are overburdened with service calls.