National Fire Fighter Near-Miss Reporting System

LDH-Related Reports Requested by FirefighterCloseCalls.com

Report Number: 06-0000337 **Report Date**: 06/22/2006

Event Description

On Wednesday 6-14-06 the (name deleted) Fire Department in (Jurisdiction/State deleted) had an incident that occurred while performing an ISO /DOI inspection drill for a neighboring department. We had a firefighter that was injured, due to a catastrophic failure of an (Manufacturer deleted) 5" manifold. The firefighter was operating the manifold valves while filling tankers. There was about 100 psi on the LDH manifold when the failure happened. The manifold valve that we were using was 15 years old. The firefighter is at home resting, bruised around left upper leg area, but will return to work. (Manufacturer deleted) has been contacted by the Deputy Fire Chief. A representative from (name deleted) came down on Monday the 6-19-06 to investigate the LDH manifold. He brought with him a new manifold to replace the damaged one. (Name deleted) took the damaged manifold with him to test and find out what caused the failure. Our department was advised by (Manufacturer deleted), that currently there are no written test procedures on this type of equipment. However, they did recommend that fire departments testing their LDH hose use the manifold at the end of the line when testing hose at 200 psi. and use caution.

Lesson Learned

Use extreme caution when dealing with LDH hose and adapters. All personnel had helmets, gloves, and turnout gear pants on during the exercise. Inspect all adapters for stress cracks.

Report Number: 06-0000426 **Report Date**: 08/18/2006

Event Description

I was participating in a departmental hose test in rear parking lot of our fire station. We were in the process of testing some of our LDH 5" supply hose, approximately 250' in total length. We were all wearing PPE per departmental SOG. A [brand deleted, sexless]LDH gate valve was attached to the end of the line. This valve had a wheel type handle with a protuding handle facing upright. The valve was cracked open to bleed air from the hose line. The hose line was attached to our 100' Ladder Tower's pump. The line was slowly charged to fill line at hydrant pressure (approx 50-60 psi static). The air bled from the line and I began closing valve. At this time water began exiting from around retaining nut at the top of the screw yoke on the valve assembly. The valve was almost completely shut and I signaled another engineer to shut down the line. Before that took place the valve stem failed and shot out of the appliance. I still had a grasp on the wheel at time of the failure and it ejected approximately 2 feet out of the appliance. The line was being shut down as this was occurring. The appliance was removed and taken out of service. Hose testing resumed with a [brand deleted, sexless] to 2 1/2" threaded adapter with a 2 1/2" fog nozzle after this occurred. The test was completed with no other problems.

Lesson Learned

Always be aware of your surroundings and potential for equipment failure. Never at any time place your body or head over any appliance of this type while under pressure. Always have pump panel attended during any hose test with communication at all time with the operator. Always wear proper PPE when testing hose.

Report Number: 06-0000556 **Report Date**: 11/04/2006

Event Description

While preparing for a live fire exercise and checking out the pump on the engine, the manual valve control for the 6" front intake was found to be frozen. A firefighter assigned to the crew attempted to open the valve with the manual control on the pump panel and managed to break the valve control such that it spun freely. The Driver and OIC were made aware of the broken valve control. No leakage from the front intake was noted yet the pump was filled with water as is typical for non-freezing weather. An hour later, this engine was assigned as one of the two attack pieces for the exercise and a 4" LDH supply line was provided. When the supply line was connected, charged and the side intake slowly opened by the pump operator, the 20' x 6" front intake soft sleeve filled with water and jumped out of the front bumper, nearly hitting a member of another crew. At that point, the supply line water was shut down and a cap was placed on the front intake so that the engine could continue to be utilized.

Lesson Learned

-When a piece of equipment breaks, do a full evaluation of the system that it operates as. Consider all possible problems that may arise. -Specifically, when a valve control is broken for a pump, assume that the discharge or intake is now open, remove any hose attached to it, and provide a cap for it. -This incident also confirms the benefit of what I've heard is a fairly recent NFPA requirement for Engines. To have motorized valve controls for large valves. Had this engine had a motorized valve control there would have been a lower chance for valve failure.

Report Number: 08-0000085 **Report Date**: 02/12/2008

Event Description

We responded to 800 square foot house fire. Upon arrival, there was heavy smoke coming from the C-side of the building. We pulled a pre-connected hose line and then a 5 inch LDH hose about 100 feet to a hydrant and made a connection for the water supply. We then waited for the driver to give the signal to charge the LDH. When it was OK to charge the line, we opened the hydrant. When the water charged the line, the 4.5 inch to LDH adapter came apart at the threaded connection. This caused a sight injury to an officer and could have resulted in loss of water supply during the fire attack. Due to quick thinking, we were able to restore the water supply in just a few moments. We have since told our personnel to check all LDH adapters for this problem.

Lesson Learned

Check all LDH adapters for this problem and I would recommend that these have a set screw and also that the manufacture look at using left handed threads.

Report Number: 08-0000484 **Report Date**: 09/30/2008

Event Description

All crews were together performing sprinkler/fire department connection drills at our training center. The crews were to lay large diameter hose [LDH] from hydrant, stop at fire department connection, make the connection and secure a water supply from the LDH. The first 2 drills went off without a problem. The third crew began the drill and was working extremely quick. After the LDH was laid and connected to the portable hydrant, the hydrant was opened. The hydrant water quickly filled the LDH with a great amount of pressure. The LDH twisted, turning over the portable hydrant opening and one of the discharge valves hit the ground. The portable hydrant moved about 20 feet striking two firefighters. Both were able the move quickly with one being grazed by the LDH and the other being knocked to the ground as he tried to jump over the hose. This caused him to twist his knee. He was transported to the hospital and treated for a strained knee with no loss of duty time. The hydrant was quickly shut down. Luckily, no one was seriously hurt.

Lesson Learned

We quickly decided to slow down the drill and prevent competition. This crew had recently performed the drill and wanted to do it the fastest. Although we want to perform these drills quickly and within the recommended NFPA times, we made crew safety the priority. We reviewed our SOG's for opening and closing hydrants. We reinforced filling the LDH slowly with the hydrant partially open. This allows the LDH pressure to build up slower. Also, we improved communication between the driver and the hydrant man.

Report Number: 09-0000064 **Report Date**: 01/26/2009

Event Description

Our engine company was practicing two minimum company standards (MCS) drills in a residential area due south of our station. The engine was to perform an MCS drill of "Ground Monitor with Supply." The battalion chief indicated that each drill should be executed within a certain time limit. A three person crew began the drill at 11:00 am. Upon arrival, FF #1 exited the apparatus and pulled a section of 4 " LDH from the rear of the truck and connected it to the hydrant. FF#2/engineer advanced the engine forward, staged the truck and decoupled the 4"hose, and then connected the 4" hose to the Jaffery valve. FF#3/captain exited the truck, climbed to the top of the truck, removed the monitor from its master stream connection, and climbed back down to the ground. FF#3 then retrieved the portable monitor base, located in the engineer's compartment and advanced the portable monitor and base to a location approximately 100' in front of the engine. FF#1, after connecting the hydrant, advanced two 100' sections of 3" hose to the monitor. FF#1 created two large loops of hose and then connected the hose to the base of the portable monitor. The hose was then secured to the monitor with a short section of chain. FF#3 attached the top section of the monitor to the stand and looked at the base to see if the connection was complete. FF#3 also lifted the monitor and tamped it on the ground several times to make sure the connection was secure. FF#3 signaled to the engineer to initiate water flow. FF#1 remained with the monitor to steady it as the hose was being charged. When the water reached the monitor the top half of the monitor separated, flew up and struck FF#1 in the face. FF#3 immediately ended the evolution. FF#1 was dazed but uninjured. FF#1 and FF#3 were both wearing an SCBA during the drill. However FF#1 was also wearing an SCBA air mask at the time. The air mask absorbed the force of the impact. Fortunately FF#1 received no trauma to the face. FF#3 then reconnected the monitor and asked the engineer to charge the line. Water then gushed from the point of connection. The water supply was again shut down. FF#3 then reassembled the monitor and had the hose charged again. On the third try the monitor did not leak or separate. The monitor flowed water successfully at approx 600 gpm. In general, during normal fire ground operations, firefighters who deploy the ground monitor are usually in a defensive firefighting mode. Usually our firefighters wear an SCBA, but generally do not wear their SCBA masks during this evolution unless atmospheric conditions dictate their use. It is only a result of good fortune that FF#1 did not sustain serious facial or head injury.

Lesson Learned

Possible Lesson: All persons should don SCBA mask during this MCS drill. FF#3 contacted the battalion chief and assistant chief about the incident. The ground monitor was deemed unsafe and placed out of service until further investigation could be completed. The investigation is proceeding to ascertain if there is an equipment or training problem. The department safety officer has received numerous emails and calls stating that a similar occurrence has happened at least four other times since the department acquired this two-piece monitor/base master stream. Despite performing this drill numerous times in the past, no one on the crew had ever received training on the proper use of this device. Solution: If the device is proven to be mechanically sound, all department members will need to receive training on this device. Solution: Reconsider purchasing two-piece monitor/base devices in the future. Go with single-piece unit.

Report Number: 09-0000433 **Report Date**: 04/22/2009

Event Description

Our crew was performing annual hose testing on a concrete street in an industrial park. The manufacturer recommends that five inch LDH should be tested at 200psi for five minutes. During the first test, a coupling disengaged from the hose being tested. As the two sections of hose disconnected, the affected hose catapulted approximately 25 feet into the air. The retaining ring came off the hose and flew about 50 feet from the test site. The locking mechanism on the hose fragmented when the hose slammed back onto the concrete. This sent pieces flying 10 feet from the position of the hose. Before pressuring the hose, all of personnel positioned themselves away from the hose. Considering the distance debris traveled, they could have been struck had it not been for the direction of travel of the debris.

Lesson Learned

When testing hose, all personnel should don the PPE required for hose testing. All personnel should not be in an area where they could be struck by fragmented parts in the event of a failure.

Report Number: 09-0000490 **Report Date**: 05/13/2009

Event Description

While conducting annual hose testing, the hose was laid as recommended in NFPA 1963 (300 feet maximum length). The hose was pressurized to the 300 psi test pressure. A section of LDH 4.5" double jacket fire hose began to fail with a shrill noise. The hose then catastrophically failed and split in two. All personnel were in a safe location prior to beginning the test and were wearing the proper personnel protection. No injuries were encountered due to situational awareness and the dangers involved with the "routine" testing of hose.

Lesson Learned

This was a success story of following Standard Operating Guidelines (SOG's) in preventing unnecessary injuries. All personnel were wearing helmets as well as maintaining a safe distance. The pump operator was able to shut down the apparatus without any other incident.

Report Number: 09-0000604 **Report Date**: 06/25/2009

Event Description

As part of our training drill, our crew was instructed to determine how much water we could flow from our monitor nozzle. After connecting to the hydrant, we ran two 2.5" hoses from the pump discharge outlets to the monitor nozzle. As we increased the pump speed, we were watching the flow out of the nozzle increase to 1,000 gpm. At that point, the discharge pressure of the pump was at about 250 psi. Suddenly there was water spraying everywhere. We thought possibly a hose had ruptured. We closed the discharges and ran to check on the condition of the two firefighters manning the nozzle. One of them was limping and the other was dazed. Further investigation revealed that the monitor nozzle failed and became dislodged from its portable base. The nozzle struck both firefighters resulting in a slight leg injury to one and the other firefighter was struck in the helmet. If either firefighter was not wearing their full PPE, injuries would have almost certainly been more severe (possibly deadly). After the incident, we noticed a plate attached to the base stating a maximum operating pressure of 100 psi. The entire crew failed to read the plate when we were initially attaching the nozzle to the base. No member of the crew (including the apparatus operator) was aware of the limitation of the device.

Lesson Learned

It is important to understand the proper operation of all equipment before using it. Before operating equipment, all attached warning labels should be read and adhered to. PPE is essential during all training exercises when there is even the slightest possibility of injury.