South Portland Enacts Report Recommendations Stemming From October 30th Ladder Truck Incident

SOUTH PORTLAND, ME – A redacted report released today by the City of South Portland reveals the three likely causes that led to a City ladder truck accidentally striking an electrical power line during a testing operation on October 30, 2018. Authored by the City’s Safety Coordinator, the report also provides recommendations gleaned from the investigation that will help ensure similar incidents are avoided in the future.

On Wednesday and Thursday of this week, City Safety Coordinator Louis Cavallaro presented his report to City Manager Scott Morelli, Fire Chief James Wilson, and Human Resources Director Stephanie Weaver. After reviewing the details of the event based on his interviews and a review of pertinent documents, Mr. Cavallaro cited three likely causes of the incident, which resulted in no physical injuries to City personnel or the public and a yet-to-be-determined amount of damage to the vehicle. Causes cited include:

1. A lack of appropriate situational awareness by certain personnel;
2. A training deficit of not highlighting the need for a spotter during the operation of the aerial during training and other non-emergency uses of the vehicle; and
3. An apparent oversight by the Fire Department to establish a Standard Operating Guideline (SOG) of requiring a spotter during training or other non-emergency use of the aerial in accordance with the equipment operational guidelines.

Based on these likely causes, Mr. Cavallaro made four recommendations, which the city manager immediately directed Chief Wilson to begin implementing. These recommendations include:

1. Establish as SOG a step for environmental assessment when conducting equipment evaluation and/or training on Ladder 45 and other similar equipment to note any obstructions that may cause injury to any employee and/or damage to the equipment;
2. Establish as SOG during the operations of Ladder 45 and other similar equipment the use of a designated spotter to assist the primary operator during trainings and equipment evaluations;
3. Review the internal process of when and how concerns with equipment are undertaken to ensure appropriate and accurate information is captured and documented in a formal process; and
4. Establish as SOG for all equipment that operational guidelines from the manufacturer are incorporated into department procedures.
“While we were extremely fortunate that none of our firefighters were injured from this incident, we may not be so lucky next time,” said Morelli. “To help ensure there is no next time, this report highlights areas we can learn from and improve upon so we can better protect our employees, our equipment, and members of the public.”

Next week the City plans to meet with its insurer – the Maine Municipal Association Risk Management Services (MMA-RMS) – so they can perform a further inspection of the truck in order to determine what is and is not damaged. This will eventually result in a determination from MMA-RMS as to what they will cover. The City believes its current policy – which includes a $1,000 deductible and replacement coverage for the ladder truck of up to $1,064,000 – will cover the needed repairs and/or replacement of the vehicle if it is declared a total loss. After the City has learned more from Pierce – the truck manufacturer – and MMA-RMS, it will provide additional information to the public.

“We are a transparent city government and are committed to providing the public with all documents allowed by Maine law,” said Morelli. “We appreciate the public’s continued patience while these outside entities work to ascertain the damage incurred by the vehicle and what the City’s insurer will cover.”

In the interim, the City will continue to utilize its 1996 Pierce ladder truck for calls requiring an aerial.

Please note: The attached version of the Safety Officer’s report has been redacted pursuant to Maine law, which prohibits the City from releasing any documents that are related to investigations of potential employee discipline, including the names of those involved, unless and until a final written decision regarding discipline has been issued. The City has nothing to release in this regard at this time and will offer no further comment on that subject.

For more information, please contact City Manager Scott Morelli at smorelli@southportland.org or (207) 767-7606.
RE: SUMMARY OF INVESTIGATION INTO OCT 30, 2018 LADDER 45 INCIDENT

This document describes the investigation into the incident of October 30, 2018, when Ladder 45, a new piece of equipment for the Fire Department, was damaged after contacting electrical wires. The scope of this investigation was to record the circumstances surrounding the incident, to determine the likely cause(s) of this incident, and to make initial recommendations as a result of this investigation to ensure further similar incidents are avoided. In order to investigate this incident, the following steps were taken:

1) Interview of [Interviewer].
3) Verify training records of [Trainee].
4) Visual review of Ladder 45 post incident.
5) Contact manufacturer to verify initial training records. (Description of the Pierce Representative’s training curriculum is pending from the company).
6) Interview of a resident of Skillings St. who reported witnessing the event.

A second individual has advised the City that they have photos of the incident, which the City has requested, but they have not provided those to the City as of Dec 5.

Receipt of Equipment and Initial Training

On October 4, 2018, the City of South Portland’s Fire Department received a 2018 Pierce Arrow XT 1500 GPM 107 foot Ascendant Aerial Apparatus. The department had formal training (in-service training) specific to aerial operations of this new equipment from October 15-18. Administered by a Pierce manufacturer representative, this training was provided to available personnel from the department’s four separate shifts. Subsequent training, provided by a second Pierce representative, took place on October 23-26 and covered additional functions and capabilities of the apparatus; this training also was provided to available personnel from the department’s four separate shifts. After completion of the required trainings by the staff, the apparatus went into service on October 28, 2018, as Ladder 45.
On the morning of October 30, 2018, at approximately 10:30 am, [redacted] returned from an emergency medical call and had initiated a training and equipment evaluation session behind the Cash Corner Fire Station when the incident took place. (Conducting such a training at this site was noted as usual.)

[Redacted], the [redacted] had passed onto information regarding a possible problem with one of Ladder 45’s stabilizers. According to [redacted] when Ladder 45’s stabilizers are functioning properly, an indicator light will illuminate green, suggesting the truck is level. When all the stabilizer lights are green, the aerial ladder will be operational. The message as passed onto [redacted] was reportedly that, during certain aerial functions, the green light on one of the stabilizers would turn red, possibly indicating issues with the operations of the aerial. It was unclear to [redacted] which of the three stabilizers was in question, or what definitive aerial position caused such a result. [Redacted] stated that therefore planned a full day of evaluation and training in an attempt to simulate the condition(s) when the red light indicator would come on, as well as to provide extra training on Ladder 45 for [redacted].

[Redacted] parked Ladder 45 outside, directly behind the truck bay that houses the apparatus at Cash Corner Station. The truck was facing the fire station with Skillings Street to the right, and Rumery Street to the left. [Redacted] stated that the truck responded normally to all aerial set up preparations, such as providing electric power to the aerial system via the master switch, engaging the aerial power take off transmission, and deploying the stabilizers. Following this, [redacted] ascended the rear steps leading to the control console located on the turntable. The control console is where all the functional capabilities are located to operate the aerial. [Redacted], however, did not operate the controls during the training.

[Redacted] assisted [redacted] with aerial set up procedures, and joined at the primary control position on the control console. [Redacted] assumed the role of primary operator at the console at this point in time, and operated the aerial functions during the training. [Redacted] goal was to lift the aerial out of the cradle, swing it to the right, extend it out towards Skillings Street and lower it to different elevations to monitor the status of the aerial stabilizers. [Redacted] stated [redacted] was attempting to reproduce the conditions under which the red light indicator problem, as described by the previous shift, occurred. As the aerial lifted out of the cradle, [redacted] climbed aboard Ladder 45 via the folding steps on the pump panel, and positioned around the area of the hose bed and equipment storage space. When the aerial is stowed into the cradle, it is difficult to work around this area. So, when the aerial was elevated, [redacted] stated it was a good
opportunity to review the other equipment around this space. Also assessed the conditions of the hydraulic oil reservoir, as wanted to observe the fluctuating oil levels while the hydraulic fluid pumped through the hose-lines into the aerial system. As operations continued, remained focused on monitoring the hydraulic oil reservoir gauge. (Image of the equipment with the reported location of follows.)

were now up on the apparatus, at the control console and in the area of the hose bed and equipment storage space. stated that was performing a dual function, both extending the aerial and lowering it at the same time, when the actual contact was made. had noted cable television, telephone, fire alarm, and residential wires positioned along Skillings Street, however, did not observe the higher primary CMP wire (photo of actual wire at the location is attached to this report).

Maneuvering the aerial outward and down, glanced down at the information center on the console. Designed to assist the primary operator with information useful for the operations of the aerial device, the information center contains many common screens providing important data. One screen in particular is the aerial set-up screen that indicates the status of the aerial stabilizers. was concentrating on this screen during the aerial operations. was also monitoring this screen. stated would intermittently stop operations while monitoring the display screen to evaluate the distance and elevation of the aerial, and evaluate the efficiency of the aerial stabilizers. Believing was a safe distance from all wires, continued operations.

While observing the information center, both noticed the display screen go blank and a warning message followed. The message stated that communication was lost to the ladder controls, or something to that effect. looked toward Skillings Street and noticed the aerial making direct contact with the higher primary wire. shouted to “we’re in the wires!” then heard a crackling sound throughout the truck and noticed black smoke billowing from the right front tire. did not hear any crackling, but heard static coming from the intercom speaker. , hearing response to the incident, attempted to raise the aerial off the line. was unsuccessful, as the controls were not functioning. who was located near the hydraulic reservoir did not notice the aerial touching the power line, but heard shouting to . initially heard a distant buzzing sound near the right front tire, and then subsequently noticed black smoke coming from that area. ordered to remain on the apparatus, stating felt it was safer to stay on the truck than attempt to exit. When the fire to the front tire intensified, an estimated twenty seconds after hitting the wire, ordered to exit the apparatus. descended the rear steps and jumped as far away from Ladder 45 as possible in order to avoid electrocution by touching the apparatus and the
were able to exit the apparatus safely without injury.

In addition to the information reported by , a witness to the incident was identified from an online posting responding to an article in a local paper. He was contacted and agreed to provide a recounting of what he saw and heard related to this incident. This witness was interviewed twice. The witness noted he was returning on foot to his home on Skillings St coming from Main St following a walk. He was walking by the station and all on the ground and that he assumed were . He noted “a truck coming with lights on,” but was not certain if that was as he was walking or at a later time. He placed the he was certain were present on either side of Ladder 45 at the front, while the who may have been present toward the rear of the truck. He stated the truck was facing Skillings Street, with the ladder extended out over the cab and into the street. During the second interview, he confirmed this several times using a photo of the site to diagram what he recalled seeing. He noted at the front of the truck appeared to direct the ladder into the wires while the other watched. He reported he heard call out “we got contact.” He stated he then saw the ladder fall and lay on the lines. He did not hear any noise, but noted he was slightly hard of hearing, or see any sparks when the ladder made contact with the wire. He did not see anyone exit the truck. He did not see smoke or the truck’s front passenger tire catch on fire. Concerned about his safety being around the wires and transformer nearby, the witness noted he then continued home. He said the total time he spent observing as he was walking by the station was about one minute. The witness said he later discussed the incident with his roommate and learned of the fire. He reported seeing no photos or video of the incident, before or after.

In assessing this version of the incident and to reconcile this version with that of , the investigation noted the following factors: 1) the incorrect orientation of the truck as facing the street per the recollection of the witness (the truck was facing the station and sideways to the street and once immobilized by loss of power could not have moved); 2) that the witness recalled perhaps seeing a second vehicle with lights coming; 3) that the individuals he identified were all on the ground; 4) that the witness could not recall the large tree at the site that is very near where the front of the truck was actually located; 5) that he noted no fire, which is documented and happened almost immediately; and 6) to have the ladder intentionally placed into the wires would mean intended harm to themselves and/or the equipment, which makes no sense as the witness also noted. Based on these aspects and absent further information, the investigation concluded that while the witness certainly saw and heard some of or the entire incident, it was likely he may have been confused as to the sequence and certain aspects of these events, perhaps as he was focused on the ladder in the wire.
Conclusion and Recommendations from Investigation

Based on the information reviewed to date, the likely causes of this incident are a combination of three factors:

1) [redacted] not maintaining appropriate situational awareness (in this case, that there was only a single CMP electrical wire, which is somewhat unusual, may have contributed to [redacted] not noting the wire. However, the location was familiar to [redacted]);

2) a training deficit of not highlighting the need for a spotter during training or other non-emergency use [redacted] all report no recollection of this being part of the in-service training); and

3) the department’s apparent oversight to establish a Standard Operating Guideline (SOG) of requiring a spotter during training or other non-emergency use in accordance with the equipment operational guidelines.

Of note: That there was no loss of life following this incident is a direct result of [redacted] ability to regain incident control and execute challenging decisions in particularly dire circumstances.

The following are recommendations (1-2) for non-emergency use of Ladder 45 and other similar equipment to ensure no future incidents during aerial operations, as well as recommendations (3-4) for department operations to ensure appropriate oversight of vehicle training, evaluation and use.

1. Establish as SOG a step for environment assessment when conducting equipment evaluation and/or training on Ladder 45 and other similar equipment to note any obstructions that may cause injury to the employee and/or damage to the equipment.

2. Establish as SOG during operations of Ladder 45 and other similar equipment the use of a designated spotter to assist the operator during trainings and equipment evaluations.

3. Review the internal process of when and how concerns with equipment are undertaken to ensure appropriate and accurate information is captured and documented in a formal process.

4. Establish as SOG for equipment that operational guidelines from manufacturer are incorporated into department procedures.