PE13-017

SUTPHEN

7-25-2013

Request 10

Accident Investigation Report - 8-20-12

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Attorney-Client Privilege

Date: August 20, 2012

To: Steven Potts, David Weber (Potts & Associates), Jim Juneau (Juneau Stacy & Ucherek)

To: Drew Sutphen, Julie Phelps, Eric Bates

From: Ken Creese

Re: Accident Investigation – Production #HS4596 Green Valley AZ, SPH100 Aerial Platform

At approximately 11:30 pm on Wednesday August 15th I received a call from Scott Herb (original sales person for this machine) telling me that the SPH100 aerial platform in Green Valley AZ experienced some type of failure and that several people were hurt. We assembled a team to go to Green Valley to provide investigative support. The team included me, Paul Miller (Production Manager) and Gene Maharg (Delivery Engineer and Aerial Technician). The following is a brief outline of what we were told happened:

The fire department was hosting a group of people from the local Rotary Club. They were invited to have dinner with the fire fighters on shift at station 51. At some time during the event the guests were invited to take a ride in the aerial platform. One (1) firefighter and four (4) civilians were in the work platform and extending out at an angle of 40 degrees. At about two thirds extension the device stopped extending. It is unknown if the operator continued to attempt to extend the device. It then rapidly retracted. Everyone was wearing safety harnesses. ***Note that on August 20th we viewed a photo from a news article in the Green Valley News. This photo shows the rescue effort to remove the occupants of the aerial platform. The angle of the bucket in the photo leads us to believe that the aerial was at a steeper angle than we were told. It may have been as steep as 65 to 70 degrees.***

We boarded get a flight to Tucson at 7:45 am on August 16th less than 9 hours after learning of the incident. We arrived on site at approximately 1:00 pm August 16, 2012. The truck was parked at the rear of the fire station just behind the center bay. This is the position the truck was in when the accident occurred. The stabilizers were deployed and the aerial device was bedded. However, the aerial was not completely retracted. Two cables where lying off the left side of the vehicle. The entire area was closed off with yellow plastic tape.

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Photo showing the cables lying off the side of the apparatus

We approached the group of people near the truck and were introduced to **Terry Johnson** who is an investigator with the AZ Department of Public Safety.

6401 S Tucson Blvd
Tucson AZ 85706
520 746 4667
jtjohnson@azdps.gov

There were also several firefighters and the fire Chief Simon Davis.

Mr. Johnson explained that the DPS had cut some of the cabling for samples and had taken the two cable ends to their facility. We did not get a chance to see the cable end pieces. We were told that we could get access to the components upon request. I questioned the cutting of the cables with surprise.

Officer Johnson explained his concern was with two pulley sheaves located at the end of the second boom section. He asked us to look at the two sheave wheels. He wanted to know if it was normal for them to be tight and not turn. The two wheels appeared to be off center by about ½" and locked up tight. We explained that it was not normal.

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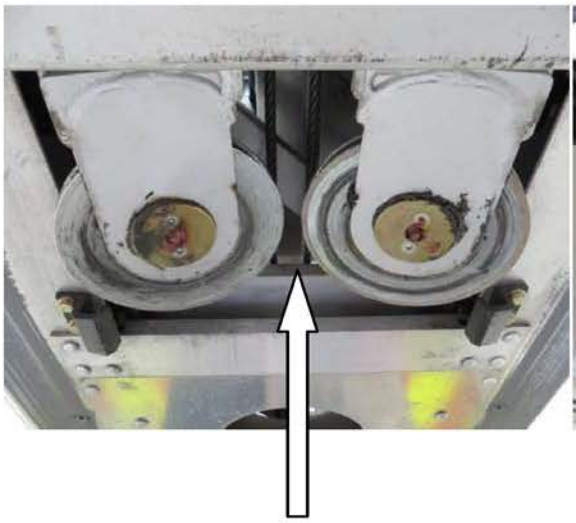


Note in the above photos that there is no visible grease around the sheave wheel and that the wheel is pulled off center approximately 3/8". These two wheels could not be turned by hand.

It is important to note that both extend cables failed.

Below are photos of the same components on a truck (Rostraver PA # HS4382) that was manufactured one year prior to the Green Valley unit. The grease is plainly visible and the pulley wheels are centered.

We did find one cable end that was frayed.

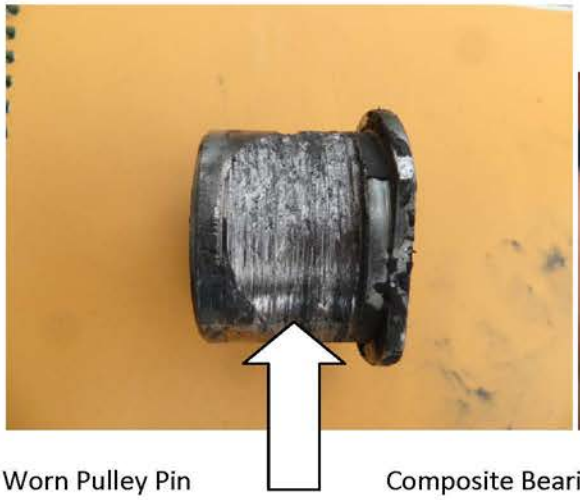
Visible broken strands of the extend cables

Officer Johnson told us he had already requested a mechanic to come to the site. Joe Underwood a mechanic for United Fire Equipment in Tucson arrived about 90 minutes after we began taking photos of the truck.

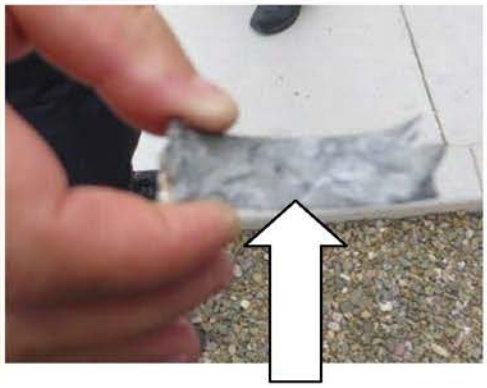
When Joe arrived we had swung the boom to the right sight side of the apparatus to get a better view of the underside of the boom assembly.

Mr. Johnson asked Joe to take the pulley wheels apart. The pin appeared to be difficult to remove and required considerable force to drive the pin out.

Once the first wheel was removed we found that there was no visible lubricant and the composite bearing was worn completely away on one side. The pin itself was worn flat about 3/16 to 1/4". The wheel is showing signs of abnormal wear on both the top and bottom side where it was rubbing on the bracket.



Worn Pulley Pin



Composite Bearing showing 70% to 80% of the material worn away.

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Sheave Wheel showing metal on metal contact and no lubrication. Note that the outside area was also rubbing on the bracket. This would make one assume that no lubrication is the cause of this wear.

For comparison, below are photos of the Rostraver PA unit

Sheave Wheel Pin with no wear

Sheave wheel with no wear, unlike the components on the Green Valley unit

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Composite Bearing as installed in the wheel. No signs of wear. This wheel is from the Rostraver unit that is one year older than the Green Valley unit.

Once the components where removed from the Green Valley aerial boom Mr. Johnson asked us our opinion and weather we felt the lack of lubrication was the root cause of the component failure. We declined to draw a conclusion until our engineers had time to review the information collected. However, when he asked Joe Underwood (United Fire Equipment) his opinion as to what caused the problem; Joe told him that it was a lack of grease.

Nearing the later part of the day we had decided that we had seen enough. We waited around for what we thought was going to be an insurance adjuster but that person did not arrive. However, an Attorney for Green Valley's insurance company did come for a few minutes and spoke privately with the Fire Chief. The Chief informed us that the truck was going to be kept in the bay, instead of being sent back to the factory for repairs as that they planned to have some metallurgical evaluation done.

We then asked for copies of the truck's maintenance records and were told that we could get them in the morning. The next morning we stopped by at 9:00 am and picked up a large envelope and headed to the airport to return home. After opening the envelope we found that it contained some invoices for various parts that were bought for the truck from suppliers such as Hale Products (Pump Manufacturer) and some data on annual inspections by a third party firm. It did not contain any information associated with daily weekly or monthly checks that should be done and documented. At 4:15 pm Monday the 20th I contacted Chief Davis to inform him that these documents where not in the envelope and he said they are currently compiling this information.

All of the components that were removed from the Green Valley truck were taken into evidence by Terry Johnson. He stated that we would have access to these parts at any time.

We have approximately 125 photos taken while we were on site in Green Valley. Terry Johnson of the AZ DPS stated he had nearly 200 or more. We asked him to share those but he said he was not able to. We don't have any photos taken immediately after the incident that would provide definitive proof of extension and angle of the boom. The photos are contained on the drives provided.

Things we do not know:

- What was the actual load in the platform at the time of the incident? It is reported that there were (5) people. What is the combined weight of the people?
- What was the angle the aerial device was operating at? Department states 40 degrees. However, one photo from the news report leads us to believe it was steeper.
- Were the cable properly adjusted?
- Had there been any reports by the firefighters about noise or squealing when operating the aerial?
- We have not been given or seen any records relative the daily, weekly and monthly maintenance on the cables and or sheave system.
- This is a dual cable system; did one cable break prior to the other?

End of Report

PE13-017

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7-25-2013

Request 10

PCSO Report

PRS, Inc.

"Your Source For Public Records"

P.O. Box 456 Chandler, AZ 85244-0456 Phone 800.304.6730 Fax 800.304.0301

Company Code: **TRAPHX**

Company Name Branch **St. Paul Travelers Insurance-Phoenix** Order #: [redacted]

Policy State Claim or File # [redacted]

Attention ***David Weber*** **dweber@travelers.com**

Type of Loss: **Equipment Failure w/Injury**

Investigating Police/Fire Agency **Pima County Sheriff, AZ**

Report # [redacted] Officer Name/Badge #: **T. Tuminello #6128**

Location of Loss: **250 N La Canada Dr**

City: **Green Valley** State: **AZ**

Date of Loss: **8/15/2012** Time:

Party #1 Involved: **Green Valley Fire Department**

DOB: SSN: Plate/State: DL#/State:

Party #2 Involved:

DOB: SSN: Plate/State: DL#/State:

Additional Info: **This involved the Green Valley Fire Department and 4 civilians.**

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Number of Pages Including This Page _____

Thank you for your business.

Pima County Sheriff's Department

Detail Incident Report for 120815259

Nature: ASSIST OA
Location: Green Valley Beat 2 Green Valley AZ 85614

Offense Codes: 6001
Received By: Rice,Natasja **How Received:** 911 **Agency:** PCSD
Responding Officers: Weeks,John Tuminello,Trevo Trueblood,Aimee Kapusinski,Edwa Sampson,MaryLou Daidone,Richard Ertel,James
Responsible Officers: Tuminello,Trevo **Disposition:** Active 08/15/12
When Reported: 18:01:16 08/15/12 **Occurred Between:** 18:00:04 08/15/12 and 18:00:08 08/15/12

NOTICE:

PRIVATE OR CONFIDENTIAL INFORMATION, SUCH AS DATE OF BIRTH, SOCIAL SECURITY NUMBER AND HOME ADDRESS, HAS BEEN REDACTED PURSUANT TO ARIZONA LAW.

NARRATIVE:

Initial Case Dictated by T. Tuminello #6128 in Supp. 2

Assigned To: **Detail:** **Date Assigned:** **/**/**
Status: **Status Date:** **/**/** **Due Date:** **/**/**

Case History:

Radiolog:

Unit: 176 **Enroute:** 18:04:13 08/15/12 **Arrived:** 18:04:18 08/15/12
Completed:18:50:25 08/15/12

Unit: 643 **Enroute:** 18:01:54 08/15/12 **Arrived:** 18:32:55 08/15/12
Completed:18:47:35 08/15/12

Unit: 657 **Enroute:** 18:01:54 08/15/12 **Arrived:** 18:04:53 08/15/12

Completed:22:34:08 08/15/12

Unit: G14	**Enroute:** 18:09:16 08/15/12 **Completed:**	**Arrived:** 18:13:43 08/15/12
Unit: G15	**Enroute:** **Completed:**	**Arrived:** 18:39:04 08/15/12

INVESTIGATIVE LEAD:

Name: FAZIO, MICHAEL C.

Name: TAYLOR, ANTHONY G.

Name: SMITH, TIMOTHY J.

Name: MODRZEJEWSKI, DAN M.

Name: CAVELL, JOSHUA L.

Name: WUNDER, CHARLES J. JR

Name: OBRIEN, JOSEPH D.

Name: VALENCIA, MANUEL A.

Name: OCAMPO, JOHN N.

Name: TAORMINA, SALVADORE J.

PROPERTY INFORMATION:

Item Type: DIMS **Property Number:** 490735

Item/Brand: **Model:**

Serial Number: **Color:** /

Characteristics:

Quantity: 1 **Meas:** **Total Value:** 0

Owner ID:

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SUPPLEMENTAL NARRATIVE: (LWSUPL: Supplemental Nbr. 1)

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Supplement Dictated by J. M. Weeks #5986 on 08/15/12 at 2138 hrs.
Total Dictation Time = 14:26 mins.

On 08/15/12, at approximately 1800 hours, I responded to an assist other agency at the Green Valley fire station located at ********** taker received information that there was an incident at the fire station; however, there were no details given, and we were asked to respond to assist.

Prior to arrival on scene, Sergeant A. L. Trueblood #1197 and Deputy T. Tuminello #6128 arrived on scene. I was advised that a landing zone was being set up on La Canada. When I responded I was asked to block a entry into a private facility located just south of the incident location.

I then made contact with Sergeant Trueblood, who advised me there appeared to be some sort of incident with a ladder on a fire truck behind the fire station, and there were people injured, and people needing to be transported via ambulance and via helicopter.

I stood by on scene, until I was required to leave and respond to another call.

At approximately 2000 hours, I was asked to respond back to the location to assist Deputy Tuminello with conducting interviews with involved firefighters at the fire station. I spoke to five firefighters. The following is a synopsis of what was said by each firefighter.

The first firefighter I interviewed was identified by his Arizona driver's license as John O'Campo (DOB ********** John is an engineer for the Green Valley Fire Department with Badge #152. John is a member of Engine #153, which station is located at Abrego and Continental in Green Valley.

John advised that he responded to a call at the fire station on 250 North Esperanza. He was advised that it was an emergency call to assist at the fire station. He was not given any information on what it was.

John stated when he arrived on scene, he was guided to the back of the fire station. He was at that point driving the engine. John stated when he responded to the back of the fire station, he saw the ladder on fire truck involved, and it appeared to be broken. He said he saw cable hanging from the ladder, and there appeared to be a door that fell off of the basket on the fire truck.

John stated his assigned duty when he arrived on scene, was security officer. He stated he stood underneath the ladder making sure that nobody walked underneath it during the entire incident, and that was his involvement.

I then spoke to the captain of Engine #153, the same engine John was assigned to. Captain Dan Modrejewski Badge #149 was identified by his Arizona driver's license with date of birth of [redacted] Captain Modrejewski stated that he again received the call for emergency services and responded at approximately 1800 hours. He was directed to the back of the fire house. He observed that the ladder was broken, and observed there appeared to be several people in the basket of the ladder; he did not know how many people. He was then asked to respond to La Canada to assist with responding firefighters. He was advised that other engines with ladders were responding to assist, and he was to direct them where to respond.

During my initial time on scene, I saw Captain Modrejewski directing ambulances and fire trucks that were coming to the scene.

The third individual that I interviewed, was identified by an Arizona driver's license as Michael Fazio (DOB **********with Badge #185 with Green Valley Fire Department (GVFD), assigned to Engine #154, which station is located at Duval Mine and La Canada, west of.

Michael advised me that once he arrived on scene, he was directed to the actual engine that was involved. He was stationed at the bottom of the ladder, where he assisted with patients as they were coming down the ladder. He assisted by helping secure the patients coming down the ladders into gurneys. He said there were four civilian patients and one firefighter, which he assisted in helping secure to gurneys. That concluded his involvement.

The fourth individual I spoke to, was identified by an Arizona driver's license as Manuel Valenzuela (DOB **********with Badge #160 with the Green Valley Fire Department (GVFD). He was assigned to Engine #151, which is the engine that was involved at the Green Valley fire station. He advised me that he was operating the ladder at the time of the event that he described as a catastrophic failure of the ladder.

Manuel advised that the event was a terrible event. They had four visitors at the Green Valley fire station, and they were giving them a demonstration of the firefighter ladder. He was in charge of the ladder. All individuals were fitted with security equipment, to include harnesses and helmets. He said once all the individuals were secured in the basket, he then raised the basket up to

what he said was approximately 60 feet up in the air. He said at that point the ladder was extended to around 60 feet in the air, and the cable underneath the ladder, which controls the up and down movement of the ladder broke. He then heard the cable snap and fall down. He then observed the ladder begin collapsing. He said he believed it collapsed approximately 30 feet; from 60 to 30 feet. He said at first it was moving kind of slow, but then got really fast, and then came to a very sudden stop. Manuel said that when this occurred, he saw that one male subject had his leg, which appeared to have fallen out of the actual bucket, and also that part of the bucket fell and fell down to the ground underneath the truck.

Manuel advised me from that point on, he assisted by running supplies up to firefighters who were assisting in actual patient care in the basket, to include running water up to the people involved, as well as medical supplies including splints and other items needed to assist with the patients in the basket. That concluded his involvement.

The last individual I interviewed was identified by an Arizona driver's license as Joseph O'Brien (DOB **********with Badge #188 assigned to Engine #151, again the engine that was involved in this incident at the Green Valley fire station at **********

Joseph stated that he gave the initial tour of the station to the four civilian individuals involved. He advised that he assisted after conducing the tour, with securing the helmets and safety harnesses on the four individuals. The fifth individual was an actual firefighter who took care of his own safety equipment. He stated after the individuals were safely in the basket, he was standing by when they were lifted up into the air. He stated they were lifted in the air approximately 60 feet. He observed that the cable snapped, at which time he observed the ladder begin to collapse. He said he believed it collapsed very quickly. His estimation was approximately 40 miles per hour. He stated that the ladder then came to a sudden stop. He saw one individual, who he described as an elderly man with a thin build, who he said he believed his name was [redacted] He said he saw this individual fall out of the basket and was dangling from the safety harness.

Joseph then saw a female, which he believed was possibly the spouse of this individual that fell out of the basket, coming out on top of him, trying to help him back into the basket.

Joseph said he followed the engineer Manny, which is the individual I spoke to prior to him, Manuel Valenzuela, up to the ladder attempting to ascertain the extent of injuries. He said at that point he acted as a runner, going up and

relaying information from the people in the basket conducting medical care, to the individuals at the bottom of the ladder. He advised me that concluded his involvement.

For all other individuals involved and interviewed by Sheriff's Department, please refer to Deputy Tuminello's additional report.

This concludes my involvement.

NFI Transcribed by #6410 on Thu Aug 16 15:15:27 MST 2012

End of SUPPLEMENTAL NARRATIVE: (LWSUPL: Supplemental Nbr. 1)

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SUPPLEMENTAL NARRATIVE: (LWSUPL: Supplemental Nbr. 2)

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Initial Case Narrative by T. Tuminello #6128 on 08/17/12 at 1459 hrs.
Total Dictation Time = 20:13 mins.

On 08/15/2012, at approximately 1800 hours, I was dispatched to the address of **********
location. The only information provided was that there had been an emergency medical services incident at the location and they were requesting law enforcement.

Upon arrival, with Sergeant A. L. Trueblood #1197, I made contact with one of the firefighters on scene. They were requesting that we close La Canada Drive so that they were able to land a helicopter for a medical evacuation of a patient.

I closed southbound La Canada just north of the fire station and Sheriff's Auxiliary Volunteers (SAV) closed northbound La Canada just south of the fire station and re-routed traffic while waiting for the helicopter to land. Once the helicopter had landed, it was on the ground for approximately fifteen minutes when they stated that the helicopter would need to lift off to go burn off extra fuel. While the helicopter was gone from the scene, I could see that the hook and ladder fire truck had the ladder extended with the bucket on top and there were approximately three or four people inside the bucket. A firefighter had initially informed us that there had been some type of a catastrophic mechanical failure with the ladder truck and there had been injuries involving both civilians and firefighters.

The helicopter turned and landed in front of the fire station and one patient was loaded onto the helicopter. Just prior to the helicopter landing, there were several ambulances on scene, which departed, transporting patients to hospitals.

While I was continuing point control, SAVs had also responded to my location to assist with closing down the southbound side of La Canada. A firefighter was approaching from the fire station and I made contact with him. He stated that the battalion chief had requested a sergeant or any law enforcement officer to come down to the fire station; however, he did not say why.

I informed the SAVs that I would be leaving the intersection for a moment to go speak with the firefighters. Once I was down at the station, I spoke with the battalion chief. He requested that we start a call number to document the incident, or who was involved and what they had seen or done during the incident. He briefed me on what had occurred, advising that the extendable ladder on the fire truck had suffered some type of mechanical malfunction and one firefighter and four civilians had been injured. He advised me that there were approximately twelve or more people who would need to be interviewed or documented. I contacted Sergeant Trueblood and advised her that I would need assistance in conducting the interviews. Deputy J. M. Weeks #5986 had responded to assist in conducting the interviews.

I first spoke with a firefighter paramedic, Salvadore Taormina. He stated that he was from Station #153, located at Continental and Abrego. He said that they were dispatched to an EMS incident; however, they were not given any details as to what had happened until they arrived on scene. Once they arrived on scene, the captains and the fire chief assigned him to extrication, which involved removing patients from a second bucket on a ladder truck onto gurneys and to administer first aid and load the patients into ambulances.

I next spoke with Joshua Cavel, from Station #154, located at Duval Mine Road and La Canada. He said that they were the second engine to arrive and he was assigned to conduct medical treatment of patients. He said that there were approximately five people in the bucket at the top of the ladder and he transferred people from the second bucket onto gurneys and applied C-Spine apparatus for transport. He observed that there were at least two patients with fractured bones.

The second bucket was a fire truck from the Pascua Yaqui Fire Department (PYFD), which had responded to this location to assist in extricating people from the ladder truck that had malfunctioned. From the time I was conducting point control to traffic, I observed the second fire truck arrive and the bucket

lifted so that the injured could be transferred from one bucket to the other and then lowered to the ground.

The third firefighter I spoke with was identified as Anthony Taylor. He said that he was also from Station #153. He told me that they were dispatched for an EMS call and was advised that the bucket ladder had a catastrophic failure. He was assigned to extrication - removing patients from the PYFD bucket onto gurneys.

The next firefighter with whom I spoke was identified as Timothy Smith, from Station #154. He said that he is a Technical Rescue Technician (TRT). When they responded to the call they were not provided any information and at first he thought it was a drill or a training exercise, as this is something they commonly do between two different fire stations. He stated that they stage practice drills at one station and respond from another. Once he arrived on scene I saw that the ladder and bucket were extended and he could see a frayed and broken cable hanging from the ladder. The door to the bucket was laying on the ground. At that time he realized it was not a drill, but an actual emergency. It became a rescue operation at that time. Mr. Smith's task during the rescue was to go up in the PYFD truck's bucket in order to remove patients from the disabled bucket and place them into the PYFD bucket and lower them to the ground.

Mr. Smith described one patient as being a 72 year old male who was air lifted in the helicopter. He also helped one female, approximately 65 years of age, with an open ankle fracture. A third female who was complaining of a shoulder injury and Captain Mooney (of the GVFD) were also in the bucket. Captain Mooney possibly had rib fractures and abrasions on one side of his back.

I spoke last with the Operations Chief of the GVFD, Charles Wunder. He stated to me that the incident had started as a VIP dinner for several individuals who had made contributions to the fire department. He said that he knew all of the individuals personally. He advised that these individuals, civilians, had been invited to the fire station to have supper and had been given a tour of the fire station. He indicated that this is common practice and was not outside of the fire station's policy. He stated that during this tour they allowed the civilians to go up in the bucket on the ladder truck. All persons going up in the bucket are required to wear a safety harness and a lanyard that attaches them to the inside of the bucket. They are required to also wear a fireman's hard hat. He said that there were four civilians and one firefighter, Captain Mooney, who went up in the bucket. He advised that the engineer of this fire truck was operating the ladder, extending it very slowly. He said he had actually teased the engineer because of how slowly he was doing so. If they had

raised the ladder too quickly, it may be jerky, so was raising it very slowly so that the ride would be smooth. He told me that the ladder extends to approximately 100 feet and at this time the had only extended the ladder to approximately 60 feet. After extending the ladder, stopping at 60 feet, Captain Valencia was about to swivel the ladder to the side; however, just before doing so there was a loud pop. At that time they saw a cable dangling from the underside of the ladder. Captain Valencia turned around and looked at Chief Wunder, who was standing behind him on the truck. They then decided at that time that they would not swivel the ladder, but would attempt to lay the ladder down, level, in order to get everyone out of the bucket. There had obviously been some type of mechanical failure with the ladder.

Chief Wunder advised that approximately 30 to 45 seconds had elapsed since the cable broke. When Captain Valencia turned around to operate the controls and bring the ladder down, before he could do anything, the bucket started sliding down.

NOTE: The ladder is a telescoping ladder that extends and it had begun to collapse.

Chief Wunder indicated that it had started sliding slowly; however, it started moving faster. The ladder bottomed out and stopped once it had reached the end of the first section. At this time one of the male occupants of the bucket fell out of the bucket and was hanging by the safety lanyard and the door of the bucket had been broken off. The bucket had been distorted slightly from the impact. One of the females was also hanging slightly out of the bucket, through the door opening. Captain Mooney was able to pull her back inside of the bucket and was also able to pull the male who was hanging by the safety lanyard back inside of the bucket.

Chief Wunder then made notifications and called other fire stations for an emergency assist. He said that the two local fire stations, #153 and 154, both responded, along with ambulances and the Med-Evac helicopter was dispatched the PYFD was also dispatched because they were the only fire truck that was close with an extendable ladder with a bucket for extrication.

Chief Wunder stated that inspections are held once a week and Wednesday is inspection day. The ladder truck had just been inspected that morning. I asked him who performs the inspection. He stated that the truck engineer performs the initial inspection, which is then double-checked by himself. He said that there were no faults or malfunctions found on the fire truck at that time.

While waiting to conduct interviews with the firefighters and paramedics, I then

took photographs of the location of incident with my department issued digital camera. I took photographs of the fire truck and the frayed cable hanging from the bottom of the ladder, which was still extended.

All persons were rescued from the bucket and transported to medical facilities.

As of this time Chief Wunder had no explanation as to how the bucket could have failed, as everything was in good working condition. Please see Deputy Weeks' report for details regarding his interviews with the other involved individuals.

On SD photo memory card was turned in at the Green Valley District Office.

This concludes my involvement.

NFI Transcribed by #5774 on Fri Aug 17 19:31:04 MST 2012

End of SUPPLEMENTAL NARRATIVE: (LWSUPL: Supplemental Nbr. 2)

PE13-017

SUTPHEN

7-25-2013

Request 10

Sutphen Response Request 10

Enclosed is the information that was requested as part of Preliminary Evaluation PE13-017.

10. Furnish Sutphen's assessment of the alleged defect in the subject vehicle, including;

a. The casual or contributory factor(s);
b. The failure mechanism(s);
c. The failure mode(s);
d. The risk to motor vehicle safety that it poses;
e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and
f. The reports included with this inquiry.

Sutphen Response:
The incident mentioned in the Vehicle Owner's Questionnaire is still part of an on-going investigation. The opinions included here are based upon the information that is available at this point in time.

Based upon the investigations inspections conducted at the scene of the incident and during the repair of the vehicle, this appears to be related to a maintenance/training issue. The bushings in the sheave assemblies located at the tip of section 2 were worn away. This eventually led to the sheave rotating on the steel pivot pin. Over time, this caused the sheaves and pins to wear enough that the sheaves seized up and would not rotate. As the ladder continued to operate in this condition, the wire rope cables were sliding over the stationary sheaves. This led the cables to wear prematurely and decreased their load carrying capability. With a heavy load in the platform, the cables broke, which resulted in the ladder unexpectedly retracting.

In our opinion, proper maintenance would have kept the components from prematurely wearing out. Along with this, proper inspection would have caught the abnormal wear on the cables and sheaves. Maintenance could have then been performed to address the problem before the components seized. So with a properly maintained and inspected apparatus, the risk of this type of incident is very minimal.

During the abnormal wear, and as the components were beginning to seize, there should have been evidence that something was wrong. As the bushing wore away, the steel sheave rotating on the steel shaft should have generated excessive noise. Broken wires and metal debris may have also been seen on or around the vehicle.

As this is part of an ongoing investigation and pending lawsuit, as of yet, there are few official reports that Sutphen is aware of. Enclosed are copies of the initial Sutphen report as well as the accident investigation reports that were created by the Arizona Department of Public Safety and the Pima County Sheriff's Office.