STATE FIRE MARSHAL'S OFFICE

Firefighter Fatality Investigation

Investigation Number 05-307-04

Firefighter Christopher Brian Hunton

Amarillo Fire Department

Incident Date: April 23, 2005
Date of Death: April 25, 2005

Texas Department of Insurance
Austin, Texas

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Summary

A 27 year-old Amarillo firefighter died when he fell from a moving fire department apparatus responding to a structure fire.

The Amarillo fire Department received a report of a house on fire at 10:00 PM on April 23, 2005. Ladder 1, an American LaFrance Quint departed Amarillo Station One at 10:01 PM en route to the fire. As Ladder 1 turned off South Van Buren Street onto East 3rd Avenue, the left rear passenger door on the apparatus opened. Firefighter Hunton, who was preparing to don his breathing apparatus, fell from the apparatus, striking his head on the street and sustaining severe head injuries. Firefighter Hunton was not wearing a safety belt.

Firefighter Hunton was transported to a local hospital where he underwent emergency surgery. Firefighter Hunton's condition deteriorated and he died at 9:53 AM, April 25, 2005 of his injuries.

Firefighter Christopher Brian Hunton served in the Amarillo Fire Department for approximately one year. Firefighter Hunton is survived by his parents.

Introduction

The Texas State Fire Marshal's Office was notified of the death of Amarillo Fire Department Firefighter Brian Hunton on April 25, 2005. State Fire Marshal's Office (SFMO) Chief Inspector Richard L. Bishop was assigned as the lead investigator. Bishop and arrived in Amarillo on April 25, 2005 to conduct an investigation of the incident.

Hunton was pronounced dead of his injuries at 9:53 AM on April 25, 2005. The Lubbock County Medical Examiner conducted an autopsy.

The SFMO commenced a firefighter fatality investigation under the authority of Texas Government Code Section 417.0075. The statute requires SFMO to investigate the circumstances surrounding the death of the firefighter, including the cause and origin of the fire, the condition of the structure, and the suppression operation, to determine the factors that may have contributed to the death of the firefighter. The State Fire Marshal is required to coordinate the investigative efforts of local government officials and may enlist established fire service organizations and private entities to assist in the investigation.

The National Fallen Firefighter's Foundation and the National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation and Prevention Program were notified.

During his investigation, Bishop gathered fire apparatus and roadway information from the City of Amarillo. Bishop also photographed and diagrammed the incident scene.

Origin and Cause Investigation

This motor vehicle incident occurred as Ladder 1 was responding to a reported house fire at 2600 South Polk Street. The Amarillo Fire Department determined the cause of the fire was unsafe use of an open flame while soldering plumbing piping. Other Amarillo fire units and personnel extinguished the fire without further incident.

Building Structure and Systems

This motor vehicle incident scene did not involve any buildings.

Investigation of the Death of the Firefighter

On April 23, 2005 at 10:00:23 PM, the Amarillo Fire Department received a report of a residential fire at 2600 South Polk Street. At 10:00:37 Amarillo Engine 1, Ladder 1, Unit 1 and Engine 5 were dispatched to the alarm.

Ladder 1 departed Fire Station 1 at 10:01:52 and turned left (north) on South Van Buren Street, following Engine 1 and Unit 1. Ladder 1 was driven by Dee LaGrone, with Lieutenant Ed Selman in the right front seat, firefighter Brian Hunton in the left rear facing crew seat and firefighter Michael Stennett in the right rear facing crew seat. As the apparatus approached the stop sign at the corner of South Van Buren Street and East 3rd Avenue, driver LaGrone slowed the apparatus to a crawl due to limited visibility and a dip in the roadway. As driver Lagrone turned right (east) onto East 3rd Avenue at a slow speed, he stated he looked in his mirror and saw the left rear door open and firefighter Hunton fall from the apparatus. Simultaneously, firefighter Stennett called out that firefighter Hunton had fallen out. Firefighter Stennett stated he saw firefighter Hunton land on the back of his head. Driver LaGrone immediately stopped the apparatus, set the parking brake, and did not move the vehicle prior to police arriving at the scene.

The crew of Ladder 1 dismounted and ran back to firefighter Hunton, who lay supine on the roadway in the intersection. Firefighter Hunton had sustained a severe head injury and had lost a large amount of blood.

Lieutenant Selman contacted his dispatcher by radio at 10:03 PM to report the incident and request police and ambulance. Engine 1 and Unit 1 heard Lieutenant Selman's radio call and returned to the incident scene to assist the crew of Ladder 1 in providing first aid to firefighter Hunton. Amarillo Emergency Medical Services was summoned and arrived at 10:09 PM. Firefighter Hunton was transported to Amarillo Medical Center where he was admitted in extremely critical condition and taken to emergency surgery.

Firefighter Hunton's did not regain consciousness and his medical condition continued to deteriorate after the emergency surgery. Firefighter Hunton was pronounced dead at 9:53 AM on April 25, 2005. Potter County Justice of the Peace ordered an autopsy and firefighter Hunton's body was transferred to the Texas Tech University Health Sciences Center Division of Forensic Pathology for postmortem examination.

Amarillo Police Department investigated the motor vehicle incident. There is conflicting information in the incident report as to the wearing of safety belts by Ladder 1's crew. The police report states that none of the crew members were wearing their safety belts, but driver LeGrone's after-incident statement reflected he had his safety belt on. The written statements of Lieutenant Selman and firefighter Stennett do not address their use of safety belts.

The Amarillo Police Department did not make any measurements at the incident scene other than those used to construct a diagram showing the location of firefighter Hunton in the intersection of 3rd and Van Buren. The Police Department did mark the location of the tires of Ladder 1 after it stopped, and these markings, combined with the police report diagram, were used to construct the SFMO diagram of the scene on April 28, 2005. (Diagram located at the end of this report)

Vehicle Examination

Amarillo Fire Department Ladder 1 at Delivery

The Amarillo Fire Department removed Ladder 1 from service and stored it in a secure location at the fire department shops after its release from the incident scene. The exterior and interior of the vehicle were examined.

Ladder 1 is a 1998 American LaFrance quint with a 75 foot aerial ladder, 1500 gallon per minute pump, and 490 gallon water tank. The maximum gross vehicle weight is

68,000 pounds. The apparatus is a custom cab configuration with two front seats, two rear-facing crew seats with breathing apparatus brackets, and two forward facing folding rear jump seats. All forward-facing seats are equipped with 3-point safety belts that include a diagonal shoulder/chest strap. The two rear-facing crew seats are equipped with two-point lap safety belts.

The lap belt on the seat in which firefighter Hunton was riding was unbuckled and retracted. The safety belt appeared to be in functional condition with no binding or other impediments to use. The safety belt on the right rear-facing crew seat was buckled around the seat cushion in a manner that indicated it was not customarily worn. There are warning signs in several location in the cab area emphasizing the need to be seated and to wear safety belts when the vehicle is in motion.

(Left) Left rear crew seat and (above) warning label in crew compartment. (Below) Right rear seat.

Ladder 1 is equipped with a safety belt monitoring system with an audible and visual alarm to indicate if a safety belt is not fastened in an occupied crew seat. The monitoring system was not functioning and the sensor wiring on the right rear jump seat was disconnected. No further examination of the system and seat sensors was conducted by SFMO, pending an engineering evaluation of the vehicle and left rear door latching mechanism.

Air lifting bags, a large wood platform and other loose equipment were located in the rear crew area. The SCBA seat bracket hold-down straps were not operable.

During the investigation and interviews with fire department members, SFMO received several anecdotal reports of the left rear passenger door opening during vehicle operation. A review of maintenance records indicated this condition was reported on November 19, 1998, November 29, 1998, and December 18, 2001. On the night of the accident, Amarillo Police investigators videotaped informal testing of the left rear door. The testing revealed that the door did not always latch correctly. Based on this information, SFMO recommended that the City of Amarillo and American LaFrance retain an engineer to conduct a study of this vehicle.

The forensic engineering firm of McDowell Owens conducted an examination of Ladder 1 the rear passenger doors, hinges, and latching mechanisms. The engineering report concluded, "Friction in the latch system of the left rear door caused it to malfunction. The main sources of the friction were: contact between the rod end bushing/retainer clip at the end of the tripping lever and the door inner surface, contact between the pivot arm of the interior handle mechanism and its support frame, and corrosion of the interior handle pivot spindle assembly." Engineers noted corrosion in the latching mechanism of the right rear door but not to the extent observed in the left rear door.

The left rear door from which firefighter Hunton fell was not examined nor operated by the SFMO investigator during the initial examination of the interior and exterior.

The engineering firm recommended that maintenance manuals be changed to require periodic inspections of the door interiors to identify the development of any restrictions to the movement of the latching mechanisms.

Weather and Road Conditions

The LODD incident occurred at approximately 10:03 PM at the intersection of South Van Buren Street and East 3rd Avenue in the downtown area of Amarillo. Street lighting illuminates the intersection. The weather was clear and the blacktop road surface was dry. 3rd Street is the through street and traffic on Van Buren is controlled by a stop sign. There is a slight dip-like depression running parallel to the south side of 3rd Street which Ladder 1 crossed at an angle as it was turning east from Van Buren.

Personal Protective Equipment Evaluation

Firefighter Hunton was wearing a firefighter bunker coat and bunker pants with boots when he fell from Ladder 1. His helmet was found in the rear cab interior. Firefighter Stennett reported that firefighter Hunton had donned his protective clothing and was preparing to don his SCBA as Ladder 1 traveled to the reported residential fire.

Medical Examination of Victim

The Lubbock County Medical Examiner's report stated that Firefighter Hunton had sustained several skull fractures with resulting brain injuries.

The cause of death was attributed to blunt force head injury. A blood test of firefighter Hunton did not detect any traces of alcohol or non-therapeutic drugs.

Findings and Recommendations

Finding #1: Firefighter Hunton was not wearing his safety belt as required by municipal and departmental policies, was donning protective equipment (SCBA) en route to the fire, and fell from the apparatus when the door adjacent to his seat opened,

Recommendation: Firefighters should follow departmental policy by donning all protective equipment and fastening their safety belts prior to moving the apparatus.

NFPA 1500, Standard on Fire Department Occupational Safety and Health Programs, Chapter 6.3.1, 6.3.2; City of Amarillo Operating Procedures Manual, Operations Procedure #2, Paragraph G; Amarillo Fire Department Standard Operating Guidelines, 303.04 "Apparatus Safety."

Finding #2: The officer in charge and the apparatus operator did not ensure all firefighters were seated and safety belts fastened prior to leaving the fire station. The initial police report indicated that none of the personnel on the apparatus wore safety belts at the time of the incident.

Recommendation: Officers and apparatus operators should follow departmental policy by ensuring all personnel have completed donning protective equipment and fastened their safety belts prior to moving the apparatus.

NFPA 1500, Standard on Fire Department Occupational Safety and Health Programs, Chapter 6.2.4, 6.2.4.1, 6.2.5; Amarillo Fire Department Standard Operating Guidelines, 303.04 "Apparatus Safety."

Finding #3: The safety belt monitoring system on Ladder 1 was not functioning and at least one seat sensor had been disabled.

Recommendation: Existing safety monitoring systems on apparatus, while not required, should be maintained in operable condition to enhance personnel safety and to avoid a false perception of safety. All fire apparatus should be inspected at least

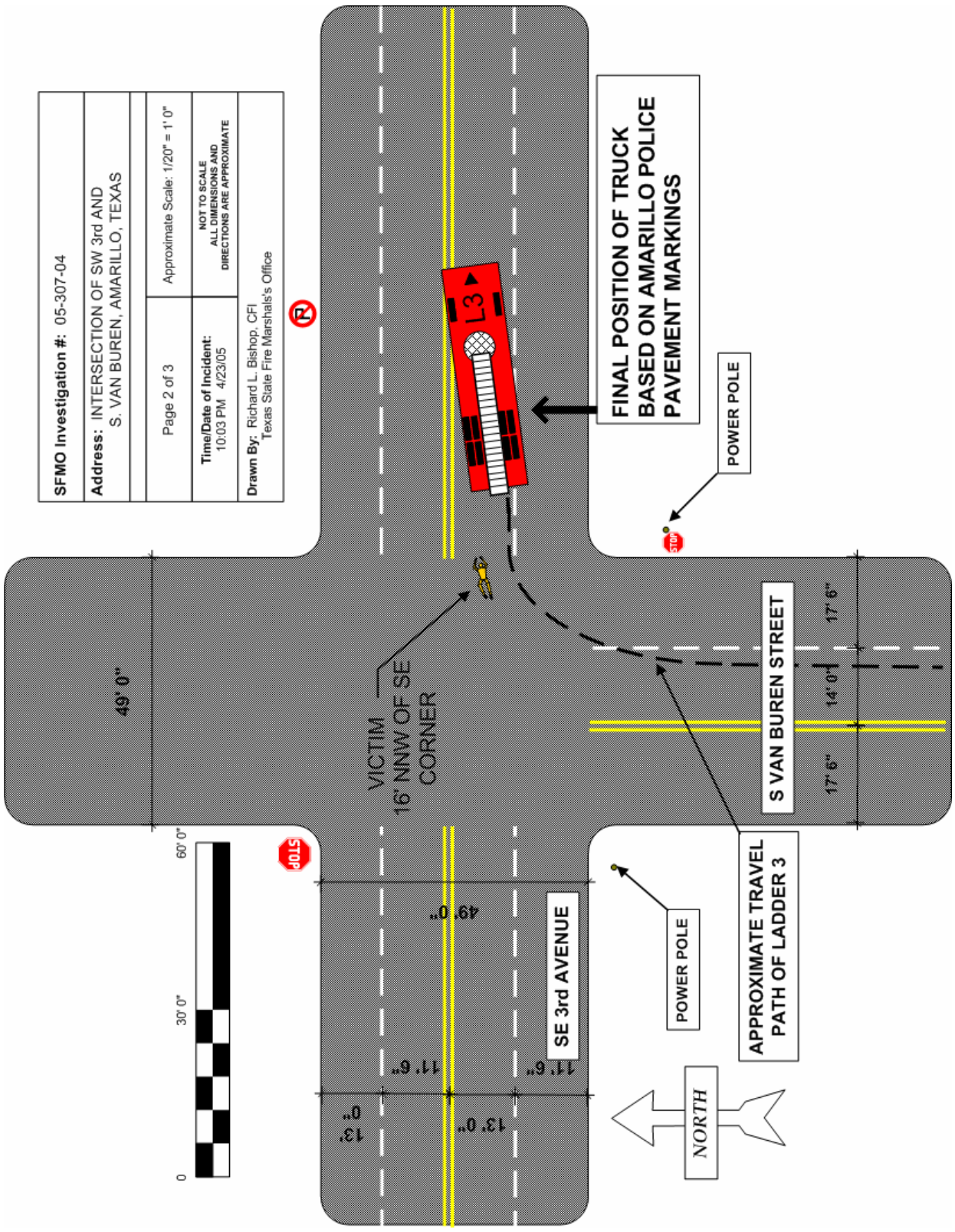
weekly, within 24 hours after any use or repair, and prior to being placed in service or used for emergency purposes to identify and correct unsafe conditions.

NFPA 1500, Standard on Fire Department Occupational Safety and Health Programs, Chapters 6.4.1, A.6.4.1

Finding #4: The latching mechanism on the left rear door of Ladder 1 malfunctioned due to internal friction and corrosion. Firefighters observed this door opening unexpectedly during transit and service records for this vehicle documented three incidents.

Recommendation: Inspect all apparatus periodically for conditions that may affect safety. Firefighters should report unsafe conditions promptly in accordance with departmental procedures and maintenance personnel should document corrective action. Any fire department vehicle found to be unsafe should be placed out of service until repaired.

NFPA 1500, Standard on Fire Department Occupational Safety and Health Programs, Chapters 6.4.1, 6.4.4.1


SFMO Investigation #: 05-307-04
Address: INTERSECTION OF SW 3rd AND S. VAN BUREN, AMARILLO, TEXAS
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Approximate Scale: 1/20" = 1' 0"
Time/Date of Incident: 10:03 PM 4/23/05
NOT TO SCALE ALL DIMENSIONS AND DIRECTIONS ARE APPROXIMATE
Drawn By: Richard L. Bishop, CFI Texas State Fire Marshals's Office
FINAL POSITION OF TRUCK BASED ON AMARILLO POLICE PAVEMENT MARKINGS
POWER POLE
L3
VICTIM 16' NNW OF SE CORNER
S VAN BUREN STREET
17' 6"
14' 0"
17' 6"
49' 0"
SE 3rd AVENUE
49' 0"
11' 6"
11' 6"
13' 0"
13' 0"
POWER POLE
APPROXIMATE TRAVEL PATH OF LADDER 3
NORTH
STOP
STOP
0
30' 0"
60' 0"