

STATE FIRE MARSHAL'S OFFICE

Line of Duty Death Investigation



Investigation Number 02-154-12

Firefighter David R. Butler

Spring Branch Volunteer Fire Department
December 24, 2001

Texas Department of Insurance
Austin, Texas

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Summary

A 43-year old volunteer firefighter died of a heart attack while driving a fire department vehicle to a mutual aid call for assistance at a single-family residential fire.

On December 24, 2001, at approximately 9:55 AM, the Comal County Sheriff's Office received a 911 call reporting a structure fire on the 4900 Block of Ammann Road, in Bulverde, Texas. The Bulverde Volunteer Fire Department was dispatched to this incident, and the Spring Branch Volunteer Fire Department was requested for mutual aid.

At approximately 10:20 a.m. Spring Branch firefighter David R. Butler responded to the mutual aid call in Battalion Truck 61, a 1997 one-ton Dodge truck with a utility bed. The truck is used to carry fireground support equipment and was equipped with a compressed air cascade system for refilling breathing apparatus. Butler was the only occupant in the vehicle.

Butler was headed south on US Highway 281 when his vehicle veered off the road, crossed the median and northbound lanes, and then struck a tree and a rock embankment. At approximately 10:21 AM, the Comal County Sheriff's Department received a telephone report of the accident. The Sheriff's Department dispatched fire department, ambulance, and law enforcement units to the accident scene.

Steven C. Hemphill, a retired Emergency Medical Technician from San Antonio, was passing by the accident scene. He approached Truck 61 and noticed Butler lying on the seat unrestrained by a safety belt. After checking Butler's condition and finding him unresponsive, not breathing, and without a pulse, Hemphill administered CPR until other emergency personnel arrived.

Butler was treated by Bulverde/Spring Branch Emergency Medical Service at the scene and transported by Air-Life to University Hospital in San Antonio, Texas, where he was pronounced dead at 11:51 a.m.

The Bexar County Medical Examiner reported that David R. Butler died from arteriosclerotic cardiovascular disease.

Butler, a one and one-half year member of the Spring Branch Volunteer Fire Department is survived by wife and two children.

Introduction

On December 24, 2001, the Spring Branch Volunteer Fire Department notified the State Fire Marshal's Office (SFMO) of the line of duty death (LODD) of a firefighter. SFMO Chief Investigator Dennis Richter was assigned as the lead investigator and SFMO Incident Coordinator. SFMO Fire Safety Inspections Program Manager Orlando Hernandez was sent to meet with the Spring Branch Fire Department to provide immediate assistance and gather preliminary information.

Upon arrival, Hernandez was advised that David Butler, a Spring Branch firefighter, was driving a fire support vehicle to a mutual aid fire call when he crossed the center median, ran off the road and collided with cedar trees and a rock wall before coming to rest. Butler was in cardiac arrest when found. Spring Branch EMS began aggressive resuscitative procedures and administered cardiac drugs and defibrillation. Butler was transported from the scene by medical helicopter to University Hospital in San Antonio, Texas, where he was pronounced dead. Butler's body had been transported to the Bexar County Medical Examiner for autopsy.

SFMO commenced an LODD 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 investigation began when Richter traveled to Spring Branch on December 27, 2001 and met with Treasurer Nathan Oxhandler of the Spring Branch Volunteer Fire Department.

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.

Origin and Cause Investigation

The origin and cause investigation of the residential fire in Bulverde was conducted by the Comal County Fire Marshal Lin Manford. The cause of the fire was determined to be accidental. The State Fire Marshal's Office did not conduct an origin and cause investigation.

Building Structure and Systems

The structure of the fire building and any fire protection systems were not examined because they were not related to the scene of the fatality.

Investigation of the Motor Vehicle Accident

The Texas Department of Public Safety (DPS) was contacted to conduct an investigation of the cause of the motor vehicle accident involving the Spring Branch Fire Department vehicle driven by Butler. Texas Department of Public Safety Trooper Bernice F. Gutierrez conducted the DPS investigation and determined that two separate accidents occurred. Extracts from the report narrative follow:

- Butler was responding to an emergency call in a Spring Branch Fire Department truck and was traveling southbound on US 281. Butler apparently became ill with the onset of a heart attack. (According to the Bexar County Medical Examiner's Office Butler had been taking medication for high blood pressure.) Butler's vehicle left the roadway striking a one-way and stop sign at a crossover causing the windshield to shatter and impair visibility.
- The fire truck driven by Butler continued to travel south in the grass median approximately 3/10 miles before it entered the northbound lanes of US 281. The fire truck traveled 7/10 mile southbound in the northbound lanes, crossing the Guadalupe River bridge, before being involved in a second accident.

Trooper Gutierrez spoke with several witnesses and determined that the Spring Branch fire truck was traveling southbound in the outside northbound lane before driving into northbound bar ditch. The fire truck struck cedar trees and a rock wall several times before coming to rest. There were no skidmarks or other indications that Butler had applied the brakes of the truck at any point along the path of the truck's travel. No vehicle defects that may have lead to the accident were found.

Steven C. Hemphill, a retired Emergency Medical Technician from San Antonio, was passing by the accident scene. He approached Truck 61 and noticed Butler lying on the seat unrestrained by a safety belt. The steering wheel airbag had deployed. After checking Butler's condition and finding him unresponsive, not breathing, and without a pulse, Hemphill administered CPR until further emergency personnel arrived.

Butler was treated by Bulverde/Spring Branch Emergency Medical Service at the scene and transported by Air-Life to University Hospital in San Antonio, Texas, where he was pronounced dead.

SFMO Chief Investigator Richter examined the maintenance record for the vehicle, Battalion 61 dating back to 1997. The latest repairs were a flat tire on December 20, 2001 and the installation of a new clutch on June 11, 2001.



Photos taken by Spring Branch VFD



Personal Protective Equipment Evaluation

Firefighter Butler was not wearing any personal protective equipment at the time of the accident.

Medical Background of Victim

David Butler applied for membership with the Spring Branch Volunteer Fire Department in May 2000. On his membership application he indicated did not have any history of heart, lung, or back problems. He also indicated he did not have any medical problems that could affect his abilities as a firefighter.

The autopsy report from the Bexar County Medical Examiner's Office stated Butler had severe arteriosclerotic cardiovascular disease. Butler had stenosis of the right coronary artery with 50% to 98% blockage throughout. He also had stenosis of the left anterior descending coronary artery with blockage from 50% to 90%. Butler had 50% stenosis of the circumflex coronary artery.

Butler had sustained a previous myocardial infarction (heart attack) that resulted in focal thinning of the wall of the heart.

The Medical Examiner categorized any external trauma received during the motor vehicle accident as relatively minor and were limited to lacerations, abrasions, and contusions.

Recommendations

The following recommendations are based upon nationally recognized consensus standards for the fire service. Volunteer fire departments are not required by state statute to comply with these standards. All fire departments should be aware of the content of the standards and may develop programs based on them to increase the level of safety for fire department personnel.

- Fire departments should make every reasonable effort to screen firefighters for heart disease in an effort to reduce the number of heart attack deaths.

In 2001, 87 firefighters died in the line of duty in the United States. This does not include the 340 firefighters killed in the collapse of the World Trade Center towers on September 11.

Of the six firefighter deaths investigated by SFMO in FY 2001, three were attributed to heart attacks. In the other three deaths investigated, one firefighter became disoriented in a burning building, and was trapped and asphyxiated. One

firefighter died when a wall fell on him outside of a building fire and one died in a motor vehicle accident.

Three of the ten calendar year 2000 Texas fatalities were attributed to heart attacks. (Source: U.S. Fire Administration (USFA) LODD Memorial Database) Four involved firefighters who were trapped in a burning buildings and asphyxiated. The other three involved on and off road vehicle accidents and an aircraft crash.

Four of the eleven 1999 Texas fatalities were attributed to heart attacks. (From USFA LODD database) Three involved firefighters who were trapped in a burning building in the same incident, two were asphyxiated and one died of burns. Three involved motor vehicle accidents. One firefighter died of heart failure secondary to a seizure disorder caused by a head injury sustained in a 1998 training accident.

From 1999 to the present, 40% of the line of duty deaths in Texas have been caused by heart attacks. (Data from USFA LODD database and SFMO investigations) This mirrors the 2001 national figure of 40% of line of duty deaths caused by heart attacks. In addition, autopsies of two Texas firefighters who died of trauma during FY 2001 revealed early stages of heart disease. Autopsies for firefighters who died before the SFMO LODD program were not available to study the rate of heart disease present in all deceased firefighters, regardless of actual cause of death.

- The Texas Commission on Fire Protection standards recommend that all regulated fire departments use NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, as a guide for all fire protection operations.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, Chapter 10.1.3 states: "Candidates and members who will engage in fire suppression shall meet the medical requirements specified in NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, prior to being medically certified for duty..."

NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, states: "The combination of the physical stress of fire fighting and exposures for a person with preexisting coronary heart disease would be expected to increase the risk of a myocardial infarction or other acute event."

NFPA 1582, Chapter 2-4.1.4 recommends the following annual medical examination for firefighters over 40 years old:

"The medical examination shall include examination of the following components:

- (1) Vital signs — namely, pulse, respiration, blood pressure, and, if indicated, temperature
- (2) Dermatological system
- (3) Ears, eyes, nose, mouth, throat
- (4) Cardiovascular system
- (5) Respiratory system
- (6) Gastrointestinal system
- (7) Genitourinary system
- (8) Endocrine and metabolic systems
- (9) Musculoskeletal system
- (10) Neurological system
- (11) Audiometry
- (12) Visual acuity and peripheral vision testing
- (13) Pulmonary function testing
- (14) Laboratory testing, if indicated
- (15) Diagnostic imaging, if indicated
- (16) Electrocardiography, if indicated "

NFPA 1582 describes a history of coronary artery disease and coronary bypass surgery as a Category B Medical Condition. This is a medical condition that, "based on its severity or degree, could preclude a person from performing as a member in a training or emergency operational environment by presenting a significant risk to the safety and health of the person or others."

Explanatory material in Appendix B to NFPA 1582 states: "A reasonable approach is to start periodic treadmill testing on members at age 40. In those with one or more coronary artery disease risk factors [premature family history (less than age 55), hypertension, diabetes mellitus, cigarette smoking, and hypercholesterolemia (total cholesterol greater than 240 or HDL cholesterol less than 35), testing should be started by age 35. The frequency of testing should increase with age, but at the minimum the test should be done at least every two years. Testing can also be done as indicated for those with symptoms suggestive of coronary artery disease, as reported in their yearly medical histories or interim reports. Conversely, it is known that even maximal stress testing frequently misses cardiac abnormalities seen during actual fire-fighting duties. "

- All personnel driving or riding in fire apparatus and support vehicles should wear safety belts at all times as required by Texas traffic laws.