

STATE FIRE MARSHAL'S OFFICE

Line of Duty Death Investigation



02-523-08

Firefighter Roger Dunn

Clute Volunteer Fire Department

August 12, 2002

Texas Department of Insurance
Austin, Texas

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Summary

A 48-year old volunteer firefighter died of a heart attack while conducting fireground support operations at a single-family residential fire.

At 3:31 p.m. on Monday, August 12, 2002, the Freeport Fire Department received a report of a fire at 1622 North Avenue P from a patrolling police officer. Initial reports from the patrol officer were of a visible fire with heavy smoke.

The Freeport Fire Department responded to the fire call at 3:33 p.m. Surfside EMS was dispatched at 3:34 p.m. and responded at 3:39 p.m. The first fire units arrived at 3:35 p.m. and reported visible flames. Mutual aid assistance from the Clute Volunteer Fire Department was requested at 3:58 p.m. and Clute fire units responded at 4:01 p.m.

Clute firefighter Roger Dunn drove Clute Engine 801 to the fire scene, arriving at 4:10 p.m. Firefighter Dunn assisted another Clute firefighter in donning his personal protective equipment and breathing apparatus. Dunn then walked over to Freeport Engine 903 to speak with Freeport firefighter J.S. Caldwell. Shortly after Dunn arrived at the Freeport engine, he collapsed. The time of the collapse was approximately one minute after he arrived on the fire scene. Caldwell witnessed the collapse and summoned help.

Emergency medical care was immediately begun on the scene, and Firefighter Dunn was transported from the scene by Surfside EMS at 4:12 p.m. The ambulance arrived at Brazosport Memorial Hospital at 4:17 p.m., where emergency care continued.

Firefighter Dunn failed to respond to treatment and was pronounced dead at 4:43 p.m. The Galveston County Medical Examiner determined the cause of death of Clute firefighter Richard Dunn as atherosclerotic cardiovascular disease and hypertensive cardiovascular disease.

Firefighter Roger Dunn, a 16-year veteran of the Clute Fire Department, is survived by his wife and two children.

Introduction

During the afternoon of Monday, August 12, 2002, the Freeport Fire Department notified the State Fire Marshal's Office (SFMO) of the line of duty death (LODD) of a firefighter. Deputy State Fire Marshal Lonnie Blevins was assigned as the lead investigator and SFMO Incident Coordinator. Blevins arrived in Freeport that evening and met with Freeport Fire Marshal Christopher Motley. SFMO Investigator James Gunter and SFMO Investigator/Canine Handler Mark Cheney were also assigned to the investigation. The U.S. Bureau of Alcohol, Tobacco and Firearms (BATF) also provided three special agents to assist in the investigation of the fire.

Fire Marshal Motley stated that Clute Fire Department firefighter Roger Dunn had collapsed at the fire scene and had been pronounced dead at Brazosport Hospital. Dunn's body had been moved to the Galveston County Medical Examiner's Office 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 fire investigation began with a meeting of all investigative personnel from Freeport, SFMO, and BATF.

The SFMO LODD Benefits Task Force was requested and a counselor was assigned from Firefighter's Ministries. 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

On the basis of the evidence described in the corresponding SFMO fire investigation report, it is the opinion of investigators that this fire originated on the east side of the living room and that the cause of the fire is undetermined.

Building Structure and Systems

Investigation revealed that this property was a vacant, wood frame, single story, single family dwelling. The structure contained two bedrooms, one bathroom, one kitchen, a living room, and an office.

The structure was composed of typical wood frame construction on a pier and beam foundation, with vertical wood siding exterior walls, wood framed windows, and a gray colored composition shingle type roof. The interior had gypsum board covered walls and ceilings, and a combination of carpeted and hardwood floors. The structure was equipped for electrical service. The structure did not have water, sewer, gas, or phone service. For the purpose of this report, the structure faced west and enclosed approximately 973 square feet. It is unknown if the building was equipped with smoke alarms.

Fireground Operations

NOTE: The following sequence of events was developed from known times of events based on radio transmissions timestamps, and witness statements. Those events with known times are identified. Events without discrete times are approximated in the sequence of events based on statements regarding individual's actions and observations at the fire.

At 3:31 p.m. on Monday, August 12, 2002, the Freeport Fire Department received a report of a fire at 1622 North Avenue P from a patrolling police officer. Initial reports from the patrol officer were of a visible fire with heavy smoke.

The Freeport Fire Department responded to the fire call at 3:33 p.m. Surfside EMS was dispatched at 3:34 p.m. and responded at 3:39 p.m. The first fire units arrived at 3:35 p.m. and reported visible flames. A defensive operation was initiated. Mutual aid assistance from the Clute Volunteer Fire Department was requested at 3:58 p.m. and fire units responded at 4:01 p.m.

Clute firefighter Roger Dunn drove Clute Engine 801 to the fire scene, arriving at 4:10 p.m. Firefighter Dunn assisted another Clute firefighter in donning his personal protective equipment and breathing apparatus. Dunn then walked over to Freeport Engine 903 to speak with a Freeport firefighter. Shortly after Dunn arrived at the other engine, he collapsed. The time of the collapse was approximately one minute after he arrived at the fire scene. Firefighter Dunn had not conducted any other operations on the fireground and was approximately 114 feet from the building that was on fire.

Emergency medical care was immediately begun on the scene, and Firefighter Dunn was transported from the scene by Surfside EMS at 4:12 p.m. The ambulance arrived at Brazosport Memorial Hospital at 4:17 p.m., where emergency care continued. Firefighter Dunn failed to respond to treatment and was pronounced dead at 4:43 p.m.

Dunn had a history of heart disease and had undergone coronary artery bypass surgery in 1996.

The Fire Attack Continues...

After Firefighter Dunn was transported to the hospital, the fire continued to burn. Mutual aid from the Lake Jackson Volunteer Fire Department was requested at 4:43 p.m. and fire units responded at 4:47 p.m. Lake Jackson Fire Department arrived on the scene at 4:58 p.m.

The fire was tapped out at 4:58 p.m. when the Lake Jackson Fire Department arrived.

The Clute Volunteer Fire Department was released from the scene at 5:23 p.m., and Lake Jackson Volunteer Fire Department was released at 5:25 p.m. A Freeport Fire Department unit and personnel remained on the scene throughout the night and into the next day, extinguishing hot spots and assisting with the investigation.

Personal Protective Equipment Evaluation

Firefighter Dunn was not wearing any personal protective equipment at the time of his collapse.

Medical Background of Victim

On the day of the fire, at approximately 5:30 a.m., Clute volunteer firefighter Roger Dunn arrived at his place of employment at Miken Specialties where he worked as an insulator. According to Gary Dunn, Roger Dunn worked in the office all day and did not complain of any problems or distress.

At approximately 3:45 p.m., Roger Dunn left work and traveled from his office toward his residence when he noticed Clute firefighter Christopher Estep driving toward the Clute Fire Station. Firefighter Roger Dunn then followed firefighter Christopher Estep to the Clute Fire Station.

At approximately 4:01 p.m. firefighters Christopher Estep and Roger Dunn boarded Clute E-801 and responded to assist Freeport Fire Department with the residential fire located at 1622 North Avenue P, Freeport, Texas. According to firefighter Christopher Estep, firefighter Roger Dunn drove the engine to the fire and did not complain of any symptoms of illness or seem as though he was in any distress prior to his collapse.

During the investigation it was discovered that Roger Dunn had a history of cardiac problems including double coronary artery bypass surgery in November 1996.

The Galveston County Medical Examiner declared the cause of death of Clute firefighter Richard Dunn as atherosclerotic cardiovascular disease and hypertensive cardiovascular disease.

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. "

- Fire departments must encourage applicants to be forthright in disclosing medical conditions that may endanger their lives or the lives of other firefighters or civilians.

If an applicant indicates a medical condition that poses a significant risk of injury or death, the department may choose to assign the applicant to non-emergency duties that would not subject the applicant to undue stress or physical exertion. Medical screening may be required to make a final decision in permitting applicants to undergo firefighting training and assignment as active firefighters.

Active firefighters and applicants that will operate fire apparatus should undergo periodic medical screening to detect conditions that could cause them to become incapacitated and lose control of the vehicle.

There are a large number of administrative functions and support roles that would allow otherwise medically disqualified applicants to serve the community without endangering themselves and others.

TIMELINE OF OPERATIONS

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1622 North Avenue P
Freeport, Texas
August 12, 2002

This time line was developed from information gathered from fire reports, dispatch reports, and witnesses statements. All times are approximate.

Time	Event
3:00 p	Debra Klaus and Eddie Gomez arrive at her residence located at 1622 North Avenue P.
3:25 p	Debra Klaus and Eddie Gomez discover the fire and exit the property to report the fire.
3:25 p	Daniel Beck discovers the smoke and attempts to locate the source.
3:26 p	Daniel Beck witnesses Debra Klaus and Eddie Gomez leaving the fire scene.
3:30 p	Sgt. Danny Gillchriest discovers the smoke and attempts to locate the source.
3:30 p	Sgt. Danny Gillchriest discovers the fire and reports the fire to dispatch.
3:31 p	Freeport Fire Department receives call reporting fire at 1622 North Avenue P.
3:33 p	Freeport Fire Department responds to the fire call.
3:33 p	Debra Klaus reports the fire to 911.
3:34 p	Surfside EMS dispatched to mutual aid call assisting Freeport Fire Department.
3:35 p	Freeport Fire Department arrives on location with flames visible.
3:39 p	Surfside EMS responds to assist Freeport Fire Department.
3:58 p	Clute Volunteer Fire Department dispatched to mutual aid call assisting Freeport Fire Department.

TIMELINE OF OPERATIONS

**(page two of two)
1622 North Avenue P
Freeport, Texas
August 12, 2002**

Time	Event
4:01 p	Surfside EMS arrives on location.
4:01 p	Clute Volunteer Fire Department responds to assist Freeport Fire Department.
4:10 p	Clute Volunteer Fire Department arrives on location.
4:10 p	Firefighter Dunn collapses after arriving on location.
4:12 p	Firefighter Dunn is transported to Brazosport Memorial Hospital.
4:17 p	Firefighter Dunn arrives at Brazosport Memorial Hospital.
4:43 p	Firefighter Dunn is pronounced dead at Brazosport Memorial Hospital.
4:43 p	Lake Jackson Volunteer Fire Department dispatched to mutual aid call assisting Freeport Fire Department.
4:47 p	Lake Jackson Volunteer Fire Department response to assist Freeport Fire Department.
4:58 p	Lake Jackson Volunteer Fire Department arrives on location.
5:23 p	Clute Volunteer Fire Department returns to service.
5:25 p	Lake Jackson Volunteer Fire Department in service.
5:30 p	Clute Volunteer Fire Department returns to their station.
8/13/02	Freeport Fire Department returns to service.