STATE FIRE MARSHAL'S OFFICE

Line of Duty Death Investigation

Investigation Number 03-116-12

Captain Michael DePauw
Dallas Fire-Rescue
December 5, 2002

Texas Department of Insurance
Austin, Texas

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Summary

A 30-year veteran fire captain, age 51, died of a heart attack while leading his engine company during initial interior fire attack at a two-alarm residential fire on December 5, 2002.

On December 5, 2002 at approximately 8:10 p.m., Dallas Fire-Rescue received a call reporting a fire in a residence at 6737 Briar Cove Drive. Captain Michael DePauw and his crew on Engine 56 were dispatched and arrived at the fire at approximately 8:17 p.m. Fire was found in the attic area of the two-story residence.

Captain DePauw was with firefighters from Engine 56 and other units in a second floor bedroom when he collapsed. He was immediately carried down the stairs and out to the front lawn where cardiopulmonary resuscitation (CPR) was started.

Firefighters used an Automatic External Defibrillator (AED) to attempt to restore Captain DePauw's heart rhythm. Two treatments were administered without success when paramedics began other advanced cardiac life support (ACLS) measures. DePauw failed to respond to treatment.

Captain DePauw was placed in a department ALS Rescue unit (ambulance), which left the scene of the fire and arrived at the hospital at approximately 8:41 p.m. ACLS procedures had continued during the trip to Medical City Hospital.

The Dallas County Medical Examiner ruled that Captain DePauw died of atherosclerotic and hypertensive cardiovascular disease.

Captain Michael L. DePauw served in Dallas Fire-Rescue for over 30 years. He is survived by his wife and five children.

Introduction

The Texas State Fire Marshal's Office was notified of the death of Dallas Fire-Rescue Captain Michael Lee DePauw on December 6, 2002. State Fire Marshal's Office (SFMO) Chief Inspector Richard L. Bishop was assigned as the lead investigator. Bishop traveled to Dallas Fire-Rescue on December 9, 2002 to conduct an investigation of the incident.

Upon arrival, Bishop was advised that Michael Lee DePauw, a Dallas Fire-Rescue Captain, had collapsed and gone into cardiac arrest while attacking a residential fire. DePauw was transported from the scene to Medical City Hospital in Dallas, Texas, where he was pronounced dead a short time later. When Bishop arrived, the Dallas County Medical Examiner was in the process of conducting the autopsy.

The 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 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

Investigators from Dallas Fire-Rescue determined that the two-story, single-family residential fire was accidental in nature and originated in the attic's electrical wiring.

Building Structure and Systems

The construction and condition of the building had no bearing upon the nature of Captain DePauw's death and was not examined as part of this investigation.

Investigation of the Death of the Firefighter

On December 5, 2002 at approximately 8:10 p.m., Dallas Fire-Rescue received a call reporting a fire in a residence at 6737 Briar Cove Drive. The first alarm assignment of E20, E22, E56, T07, T20, Battalion Chiefs 2 and 4, and ALS Rescue 22 was dispatched. Engine 56, staffed by Captain Michael DePauw, Driver-Engineer Steven McBride, Second Driver George Peacock, and Fire-Rescue Officer J.D. Hedrick, arrived at the fire at approximately 8:17 p.m. Fire was found in the attic area of the two-story residence.

A second alarm was requested at 8:17 p.m. and E7, E13, E41, T41, T57, Battalion Chief 3, Deputy Chief 806, Air Unit 821, Arson 784, and ALS Rescue 20 were assigned.

Upon arrival, DePauw, Peacock, and Hedrick advanced a 1¾" cross lay hose line from E56 to the front door and up the stairs to the second floor near the attic stair opening. Firefighters from other engine and truck companies entered the building and were on, or approaching, the second floor. DePauw and Peacock pulled hose up the stairs so Hedrick could direct a stream into the attic via the attic stairs. DePauw sent Peacock back for a short pike pole to pull ceiling to access the fire in the attic. Peacock returned

to the second floor with the pike pole and as he moved past Hedrick to pull ceiling he observed Captain DePauw collapse "like someone had grabbed his feet and pulled them from under him." Several other firefighters also witnessed the collapse. Hedrick and Peacock checked DePauw to see if something had fallen on him. Hedrick and Peacock from E56, T20 Driver-Engineer Dennis Page, and George Bolton from E20 carried Captain DePauw down the stairs and into the front yard of the residence.

Captain DePauw's helmet and coat were removed and it was determined that he had no heartbeat and was not breathing. CPR was initiated immediately and an Automatic External Defibrillator (AED) was utilized. The AED shocked DePauw twice with no change in heart rhythm noted.

The crews of Rescues 20 and 22 were staged on the scene and were summoned as Captain DePauw was brought out of the building. Paramedics began advanced cardiac life support (ACLS) measures including intravenous fluids and drugs, cardiac monitoring, and airway intubation. DePauw was placed in Rescue 20 which transported DePauw to Medical City Hospital. Paramedics from Rescue 22 and one firefighter from an engine company assisted with CPR and treatment in route to the hospital.

Rescue 20 arrived at Medical City Hospital at approximately 8:41 p.m. CPR and medical treatment continued in the Emergency Department, but Captain DePauw failed to regain any cardiac activity. DePauw was pronounced dead at approximately 9:04 p.m.

The Dallas County Medical Examiner's office was notified and conducted an autopsy the following morning.

Personal Protective Equipment Evaluation

Captain DePauw was wearing a full ensemble of NFPA compliant personal protective equipment, including a helmet, fire-resistant hood, bunker coat, gloves, bunker pants, and boots. Captain DePauw was wearing a self-contained breathing apparatus (SCBA) and had his face piece on and regulator in place when he collapsed. The integral PASS device in Captain DePauw's SCBA was powered up and armed as was the second PASS device worn on his bunker coat. PASS devices did not play a part in the recognition of Captain DePauw's collapse and his removal from the building.

Captain DePauw's protective equipment, including his SCBA, weighed 51 pounds.

Medical Background of Victim

A review of Dallas Fire-Rescue personnel records showed that Captain DePauw had taken leave from firefighting duties several times during his career due to minor injuries sustained in both on and off duty employment. DePauw received clearance to return to work after each injury.

A review of Captain DePauw's personnel record showed that he had sustained a heart attack on July 31, 1989. After he underwent medical treatment he was cleared to return to full firefighting duties. There is no record of Captain DePauw undergoing any physical examinations from the time he returned to duty from the heart attack to the time of his death.

The Medical Examiner's report stated that DePauw's anterior descending coronary artery was 90% stenosed by calcified atherosclerotic plaque. The left circumflex coronary artery was of small caliber and was 80% stenosed by calcified atherosclerotic plaque. The right coronary artery was completely occluded by atherosclerotic plaque. Captain DePauw's aorta had a moderate degree of atherosclerosis with a small number of calcified atherosclerotic plaques.

An approximate eight centimeter area of fibrosis (as could occur from a previous heart attack) involved most of the posterior wall of the left ventricle and the posterior half of the intraventricular septum.

No other remarkable medical conditions were observed. Carbon monoxide in the blood was less than 1%.

The Dallas County Medical Examiner ruled Captain DePauw died of atherosclerotic and hypertensive cardiovascular disease.

The Dallas Fire-Rescue Physical Fitness and Weight Awareness Program dated February 1993 states in part: "Each uniformed member of the Dallas Fire Department assigned to Emergency Operations station duty will be individually responsible for his/her physical fitness level. Supervisors at all levels will have the flexibility to coordinate workout scheduling. Workouts will be mandatory. This will include swing personnel and any member temporarily assigned……Captains will be in charge of the program at the Station level."

Dallas Fire-Rescue reported that Captain DePauw had worked out in accordance with departmental policy on the day of his death.

Other activities that day prior to the fire call on Briar Cove included responding to a traffic accident with injuries and a medical assistance call at a heart attack. The bulk of Captain DePauw's shift was spent in Battalion Chief Haygood's office, helping with preparing leave schedules for 2003. Chief Haygood reported that Captain DePauw appeared calm, steady, relaxed, and comfortable throughout that day's activity.

Findings

Finding 1: Based on autopsy results, Captain DePauw suffered from severe coronary artery disease.

Recommendations

The following recommendations are based upon nationally recognized consensus standards for the fire service. All fire departments should be aware of the content of the standards and should develop programs based on them to increase the level of safety for fire department personnel.

- The State Fire Marshal's Office recommends that all 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 describes a history of coronary artery disease 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 recommends that for those individuals with symptoms suggestive of coronary artery disease, biannual testing is indicated. Periodic treadmill or exercise stress testing on members with cardiac histories is recommended.

- Firefighters must take personal responsibility for their own health and safety. Firefighters are encouraged to contact their personal physicians to discuss how their health relates to their duties and undergo periodic physical examinations including exercise stress testing if indicated.

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