

STATE FIRE MARSHAL'S OFFICE

Firefighter Fatality Investigations



ANNUAL REPORT FY 2005

October 31, 2005
Texas Department of Insurance
Austin, Texas

Firefighter Fatality Investigations FY 2005 Annual Report

Table of Contents

Executive Summary.....	3
Texas Firefighter Fatality Investigation Authority.....	4
Texas Firefighter Investigation Program Impact.....	4
Overview of the Texas Fire Service.....	6
National Firefighter Death Composite	6
National Firefighter Fatality Summit.....	7
Firefighter Fatality Investigation Report Distribution.....	8
Recommendations.....	8
Medical Screening/Firefighter Fitness.....	8
Firefighting Strategy and Tactics	9
Protective Equipment.....	11
Buildings and Fire Protection Systems	11
Fire Department Vehicles	11
FY2005 Investigation Summaries.....	12

TEXAS DEPARTMENT OF INSURANCE STATE FIRE MARSHAL'S OFFICE AUSTIN, TEXAS

Firefighter Fatality Investigation FY 2005 Annual Report

Executive Summary

During state fiscal year 2005, the State Fire Marshal's Office (SFMO) conducted five firefighter fatality investigations. These investigations were conducted under the authority of Texas Government Code Chapter 417.0075.

The SFMO utilizes expertise provided by various Texas fire service associations and fire-related state agencies in the investigation process, including the

- State Firemen's & Fire Marshals' Association of Texas;
- Texas State Association of Fire Fighters;
- Texas Fire Marshal's Association;
- Texas Fire Chief's Association;
- Texas Commission on Fire Protection;
- Texas Forest Service; and
- Texas Engineering Extension Service, Emergency Services Training Institute, Texas A&M University System.

In addition to these organizations, major Texas metropolitan fire departments contribute to this program by participating on the Firefighter Fatality Investigation Advisory Committee and by supplying specific expertise during investigations. Contributing fire departments include Austin, Dallas, El Paso, Fort Worth, Houston and San Antonio.

The FY 2005 firefighter fatalities resulted from a variety of causes and circumstances. The causes of these five deaths continue to mirror somewhat the national firefighter death statistics as reported by the U.S. Fire Administration (USFA). Heart attacks were noted in a recently released USFA report as the leading cause of death among firefighters across the nation. Two of the five fatalities were attributed to heart-related illnesses.

The following table provides a snapshot of each FY 2005 Texas firefighter fatality incidents. A summary from each investigation report is included at the conclusion of this report.

Firefighter Name	Date of Death	Incident Description
Firefighter James Campbell	November 12, 2004	Medical Condition
Firefighter Nito Guajardo	December 20, 2004	Fire Related
Capt. Grady Burke	February 19, 2005	Fire Related
Chief Lonnie Nicklas	February 24, 2005	Heart Related
Firefighter Brandon Phillips	March 30, 2005	Heart Related
Firefighter Brian Hunton	April 24, 2005	Motor Vehicle Accident Related

Texas Firefighter Fatality Investigation Authority

Effective September 1, 2001, provisions of House Bill 1450 amended Chapter 417, Texas Government Code, by adding Section 417.0075 requiring the State Fire Marshal's Office (SFMO) to conduct an investigation if a firefighter dies in the line of duty in connection with a fire-fighting incident in this state.

The statute requires the SFMO to investigate the circumstances surrounding the death of the firefighter to determine the factors that may have contributed to the death. These factors include:

- The cause and origin of the fire;
- The condition of the structure; and
- The suppression operation.

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.

Texas Firefighter Investigation Program Impact

Since the inception of this program in September 2001, the State Fire Marshal's Office has conducted twenty-one firefighter fatality investigations. Assessment of these investigations has revealed usable information that has led to revision of operational procedures and a strengthening of firefighter safety awareness within the Texas fire service.

While we believe that individual firefighter fatality investigation reports are helpful to the affected fire departments, it is the more global information drawn from this

experience that will enable the fire service to implement safety measures that benefit all Texas firefighters.

Fortunately, the State Fire Marshal's Office has the support of many organizations in communicating fire service safety messages. Professional organizations are critical communication partners. Likewise, state and federal agencies have a significant role in communicating safety information and public policies affecting firefighter safety. The following information illustrates firefighter safety policies and initiatives resulting from analysis of the investigation reports.

- The State Fire Marshal's Office continued its policy of encouraging members of the Firefighter Fatality Investigation Program Advisory Committee to ensure that "lessons learned" were taken back to their respective organizations and "optimally integrated" as appropriate. These efforts include direct contact with the affected fire department, improvements to training plans, firefighter certification requirements, equipment design, standards/policy development, and professional organization outreach.

In early October 2004, the Texas Forest Service placed line-of-duty death benefit information on its Internet Web site, along with instructions to contact the SFMO should a firefighter line-of-duty death occur.

- The State Fire Marshal implemented an online survey on its Internet Web site that seeks fire service input. This survey evaluates the impact of line-of-duty-death reports on the Texas Fire Service since the inception of this program. Ninety percent of responding fire departments found the information "useful," while 60 percent reported that they had implemented recommendations found in the individual firefighter line-of-duty death investigation reports.
- At its October, 2005 meeting the Commission has proposed the following rule change; a fire department shall assess the wellness and fitness needs of the personnel in the department and shall develop and maintain a standard operating procedure to address those needs. The approach to the fitness needs of the department shall be based on the local assessment and local resources. The commission recommends they use as a guide the IAFF/IAFC Fire Service Joint Labor Management Wellness-Fitness Initiative when developing the SOP.

The Commission continues to receive information from Texas fire departments and implement responsive programs as appropriate.

- The State Fire Marshal's Office will implement several enhancements to its Internet web site designed to emphasize firefighter health and safety and resources that may help fire departments minimize the risk of firefighter injuries and deaths. Specifically, the SFMO will add Internet links to state and federal agencies that provide grants, grant-writing

expertise and surplus equipment to fire departments. The SFMO will also reemphasize its position on firefighter health screening and the importance of maintaining firefighter fitness. The SFMO will key on the thousands of Firefighter fatality-related document downloads as a point-of-contact with the fire service. Individuals wishing to download Firefighter fatality reports will be prompted to complete the informational survey currently online. Survey results will be used to assess actual implementation of firefighter health and safety practices, as well as the importance of the Firefighter fatality investigation program.

Overview of the Texas Fire Service

The Texas fire service comprises paid, volunteer and combination departments. Recently, the Texas Forest Service, a component of the Texas A&M University System, published results of a survey of 1,852 fire departments. The survey revealed:

- Of the 1,852 departments, 82 percent were volunteer, 6 percent were fully paid and 12 percent reported being a combination of paid and volunteer firefighters.
- 61,176 firefighters were identified, with 68 percent being volunteers and 32 percent being paid. Of the volunteers, approximately 72 percent reported being “active.”

National Firefighter Death Composite

The United States Fire Administration (USFA) released *Firefighter Fatalities in United States in 2004* in September 2005. This report provides an in-depth analysis of 117 on-duty deaths that occurred in the United States during 2004.

In the publication, USFA reports that:

- 56.4 percent of nationally reported 2004 firefighter on-duty deaths were due to “stress or overexertion” with heart attacks and strokes being the attributed causes of death. This is the highest reported percentage in ten years.
- 17 percent of the 2004 deaths were the result of vehicle collisions, including firefighters that were struck by, or fell from, vehicles.
- 11 percent of the 2004 deaths were attributed to structural collapse during fire attacks or being “caught or trapped” during fire suppression activities.
- The remaining deaths were attributed to other fire and non-fire related events.

National Firefighter Fatality Summit

The National Fallen Firefighters Foundation hosted the first national firefighter line-of-duty death prevention summit in March 2004. Attendees at the summit promulgated a listing of 16 initiatives that, when implemented, will substantially reduce the number of Firefighter fatalities. These initiatives will continue to be included in annual reports to emphasize their importance. These are:

- Define and advocate the need for cultural change within the fire service relating to safety, incorporating leadership, management, supervision, accountability and personal responsibility.
- Enhance the personal and organizational accountability for health and safety throughout the fire service.
- Focus greater attention on the integration of risk management with incident management at all levels, including strategic, technical, and planning responsibilities.
- Empower all firefighters to stop unsafe practices.
- Develop and implement national standards for training, qualifications, and certification (including regular recertification) that are equally applicable to all firefighters, based on the duties they are expected to perform.
- Develop and implement national medical and physical fitness standards that are equally applicable to all firefighters, based on the duties they are expected to perform.
- Create a national research agenda and data collection system that relates to the initiatives.
- Utilize available technology wherever it can produce higher levels of health and safety.
- Thoroughly investigate all firefighter fatalities, injuries, and near misses.
- Ensure that grant programs support implementation of safe practices and/or mandate safe practices as an eligibility requirement.
- Develop and champion national standards for emergency response policies and procedures.
- Develop and champion national protocols for response to violent incidents.
- Provide firefighters and their families with access to counseling and psychological support.

- Provide public education with more resources and champion it as a critical fire and life safety program.
- Strengthen advocacy for the enforcement of codes and installation of home fire sprinklers.
- Make safety be a primary consideration in the design of apparatus and equipment.

Firefighter Fatality Investigation Report Distribution

Upon release, Firefighter fatality investigation reports are sent to the affected fire departments and placed on the agency's Internet site for access by the fire service, media and the public. National interest has resulted, and the reports are accessed frequently. Since the inception of Firefighter fatality investigation reporting in September 2001, there have been more than 22,000 individual report downloads, including 11,700 downloads in FY 2005.

Recommendations

Based on the conditions found during Firefighter fatality investigations, the SFMO makes the following general recommendations. Incident-specific recommendations are incorporated into each Firefighter fatality report.

Medical Screening/Firefighter Fitness

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

NFPA 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments

The U.S. Department of Homeland Security (DHS), through its U.S. Fire Administration and Office of Domestic Preparedness, offers grant funding to fire departments for wellness/fitness programs. This funding, a component of the Assistance to Firefighters Grant Program, emphasizes periodic health screenings, entry physical examinations, and an immunization program. Grants may be used for the procurement of medical services to ensure that the firefighting personnel are physically able to carry out their duties.

Further information regarding the Assistance to Firefighters Grant Program can be found on DHS' Internet web site at <http://www.firegrantsupport.com/>.

Firefighting Strategy and Tactics

- Pre-Fire Planning

A pre-fire planning program should be implemented to enhance tactical decision-making on the fire ground. The use of pre-fire plans will enable responding personnel to determine the most accessible water supply and geographical building layout, including means of access, potential exposure problems, occupancy hazards, proper positioning for offensive and defensive operations, etc.

NFPA 1620, Recommended Practice for Pre-Incident Planning

- Incident Management System

Officers assigned the responsibility for a specific tactical level management component at an incident should directly supervise and account for the companies and/or crews operating in their specific area of responsibility.

NFPA 1561, Standard on Emergency Services Incident Management System

The Incident Management System should be utilized at all emergency incidents. The adoption of the Incident Management System is recommended to ensure the effective use of common terminology during large-scale and mutual aid incidents. Command must provide strong and clear direction for the incident.

NFPA 1201, Standard for Providing Emergency Services to the Public

- Personnel Accountability

A Safety or Accountability Officer should be assigned to ensure that accountability is accomplished.

NFPA 1521, Standard for Fire Department Safety Officer

Company unity must be maintained to facilitate accountability. All supervisors shall maintain a constant awareness of the position and function of all personnel assigned to operate under their supervision. This awareness shall serve as the basic means of accountability that shall be required for operational safety.

NFPA 1561, Standard on Emergency Services Incident Management System

The incident commander should initiate an accountability and inventory worksheet at the beginning of operations and should maintain that system throughout operations.

NFPA 1500, Personal Accountability During Emergency

- Rapid Intervention Teams

The incident commander should evaluate the situation and the risks to operating crews and should provide one or more rapid intervention teams commensurate with the needs of the situation.

OSHA HAZWOPER Standard, CFR 1910.134

A Rapid Intervention Team (RIT) replacement team should be assembled when the original RIT is assigned to conduct a rescue effort during a prolonged fire attack.

Consideration should be given to establishing RIT teams for each division/sector actively involved in firefighting or high-risk activities.

- Emergency Scenes On or Adjacent to Roadways

Fire departments should develop, implement, and enforce standard operating procedures (SOPs) regarding emergency operations for highway incidents.

Fire departments should ensure that personnel wear appropriate protective clothing, such as a high-visibility reflective safety vest, while operating at an emergency scene at or adjacent to a roadway.

Fire departments should ensure that fire fighters establish a protected work area before turning their attention to the emergency.

Fire departments should consider limiting or restricting the response of their members in their privately owned vehicles to high-volume, limited access highway incidents.

Fire departments should develop and implement pre-incident plans regarding traffic control for emergency service incidents.

NFPA 1500, Standard on fire Department Occupational Safety and Health Programs

Protective Equipment

- Protective clothing and protective equipment shall be used whenever firefighters are exposed or potentially exposed to hazards. All personnel, including engineers, support personnel, fire prevention, and medics, should be required to wear full protective equipment when operating in or around the fire ground.

NFPA 1500, Standard on fire Department Occupational Safety and Health Programs

- SCBA air cylinders should be maintained at not less than 90 percent full. Full extra cylinders should be kept on emergency response vehicles. Low air cylinders should be segregated from full cylinders until filled.

NFPA 1852, Standard on Selection, Care, and Maintenance of Open-Circuit Self-contained Breathing Apparatus (SCBA)

Buildings and Fire Protection Systems

- Installation of floor-level exit signs and illumination of exit paths may help occupants and firefighters escape when standard exit signs and lights are obscured by smoke.

Fire Department Vehicles

- Fire department vehicles, including ambulances and utility vehicles, should not be loaded beyond the manufacturer's gross vehicle weight rating listed on the label attached to the vehicle. Overloading vehicles may affect handling and could result in excessive braking distance. Weight calculations should include the maximum number of passengers, their personal equipment, and full water and fuel tanks.

NFPA 1901, Standard for Automotive Fire Apparatus

- All fire department members who drive fire service vehicles should meet the objectives specified in NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications.* Chapter Two applies to all fire department vehicles, including administrative vehicles and ambulances. Other chapters of NFPA 1002 contain objectives for operators of specialized apparatus such as pumpers, aerial apparatus, etc.
- Drivers and passengers should wear safety belts whenever the vehicle is in motion.

FY2005 Investigation Summaries

The information summarizes FY05 firefighter fatality investigations. When released, full reports will be placed on the Texas Department of Insurance Web site. The summaries are listed in date order.

Firefighter James A. Campbell, age 56

Pendleton Harbor Volunteer Fire Department
November 12, 2004

Firefighter James A. Campbell died at the scene of a Midlake Subdivision house fire. His death was caused by a medical condition. Firefighter Campbell was a seven-year veteran of the Hemphill-area department.

Firefighter Nito Guajardo, age 24

Baytown Fire Department
December 20, 2004

Firefighter Guajardo and other Baytown firefighters advanced an attack line into the interior of a burning residence. Conditions deteriorated and firefighters withdrew from the structure and conducted an accountability check. Firefighter Guajardo was found to be missing. Asphyxiation and burns caused his death. The fire originated in the ceiling area near the kitchen but the cause was never determined.

Captain Grady Burke, age 39

Houston Fire Department
February 19, 2005

Captain Burke was performing search and rescue efforts at a residential structure fire. The structure became unstable, and Captain Burke became trapped when the roof collapsed. The cause of death was attributed to thermal burns and smoke inhalation.

Chief Lonnie Wayne Nicklas, age 39

Shepherd Volunteer Fire Department
February 24, 2005

Chief Nicklas conducted and participated in training activities over the period of several days and during that time had complained of a constant chest pain. During the night of February 23, 2005, Chief Nicklas awoke and asked his spouse to be taken to the hospital. While preparing to depart the residence, Chief Nicklas collapsed. Attempts to revive Chief Nicklas were unsuccessful. The cause of death was attributed to a heart attack precipitated by advanced coronary artery disease.

Firefighter/Paramedic Brandon Phillips, age 26

Keller Fire Department

March 30, 2005

Firefighter Phillips responded to multiple calls during an overtime shift, some of which involved heavy lifting. While jogging two hours after completing the overtime shift, he suffered a dissecting aortic aneurysm. He was transported to the local hospital where the aneurysm was diagnosed and he was airlifted to a Dallas hospital. He died during emergency surgery to repair the aneurysm.

Firefighter Christopher Brian Hunton, age 27

Amarillo Fire Department

April 24, 2005

While responding to a residential fire, Firefighter Hunton fell from the passenger compartment of apparatus. Firefighter Hunton was not wearing his safety belt and was donning protective equipment when the apparatus door opened. Firefighter Hunton sustained critical head injuries and subsequently died on April 25, 2005.