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Summary

Gary L. Staley, age 31, died of undetermined injuries while conducting an interior fire attack at an automobile showroom fire on January 19, 2003. Staley was a member of the Porter, Texas, Volunteer Fire Department (VFD).

Staley was with three other Porter and New Caney VFD firefighters and was advancing a hose line into the showroom area of an automobile restoration facility and parts store when the fire rapidly increased in intensity causing the hose team to withdraw from the building. Staley and the other team members separated as they attempted to exit the building.

The other three firefighters on the hose team made their way independently to the outside of the building. Two of the firefighters sustained critical burns and were hospitalized. The third firefighter sustained minor burns to his hands and was treated on the scene. An explosion occurred after the other three firefighters exited.

An attempt was made by Houston firefighters to locate Staley and remove him from the building, but intense heat and the potential for collapse prevented the rescue team from advancing more than a few feet into the building.

Many other area fire departments responded to the multiple alarm fire and after the fire was brought under control, firefighters entered the building and found Staley but he was obviously deceased. Staley's body was transported to the Harris County Medical Examiner for autopsy.

Staley sustained multiple injuries including extensive burns from fire exposure. The exact cause of death remains under investigation by the Medical Examiner

Firefighter Gary L. Staley served in the Porter Volunteer Fire Department for two and one-half years. He is survived by his daughter and parents.

Introduction

The Texas State Fire Marshal's Office was notified of the death of Porter firefighter Gary Staley on January 19, 2003. State Fire Marshal's Office (SFMO) Chief Inspector Richard L. Bishop was assigned as the SFMO fatality investigation team leader. Bishop and other county, state, and federal investigators traveled to the Porter Volunteer Fire Department on January 19, 2003, to conduct an investigation of the incident.

The SFMO commenced an LODD investigation under the authority of Texas Government Code Section 417.0075. The statute requires the 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

hands were burning. He eventually found a wall in the southeast corner of the building and felt his way to the doorway. Chapa's protective equipment was smoking when he exited the building and he had sustained serious burns to his bare hands. The time is estimated to have been 10:14 AM. Chapa was taken to a local burn center for treatment.

New Caney firefighter Haynes then left the hose team because he felt too hot. Haynes also became disoriented and when he could not see due to heat damage to his SCBA mask, Haynes removed his SCBA mask, Reed hood, and gloves. Haynes found his way to the open doorway and escaped the building. Haynes sustained critical burns to his hands and face and was later transported to a local burn center for treatment. The time is still estimated to have been 10:14 AM. Chief Binnion ordered the evacuation signal sounded and requested a second ambulance when he saw the injured Chapa and Haynes exit the building.

The third firefighter, New Caney firefighter Musik, was operating the hose nozzle alone in a kneeling position approximately 40 feet into the building. He stated he did not feel any discomfort but did notice the face shield on his helmet melting and dripping in front of his SCBA mask. He deflected some water from the nozzle to cool his helmet and visor. He stated that he probably would not have exited if somebody had not blown the air horn evacuation signal. Musik left the building by crawling and following the hose line. As he was crawling, he collided with a metal column as he followed the hose through a narrow area between the column and a car. Musik lost his helmet, but continued his evacuation. He continued following the hose and escaped the building with only minor burns to the knuckles of his hands. Musik was treated on the scene. Time is estimated to have been 10:15 AM. Shortly after Musik exited, firefighters heard a large explosion inside the building.

Staley, one of the four firefighters who entered the building, became separated from the team as others left and he did not exit with them. Porter firefighter Mixx observed Chapa and Haynes exit and alerted Chief Binnion that Staley was missing. Chief Binnion checked the accountability board on E121 and did not find Staley's accountability tag on the board. Binnion asked Mixx a second time about Staley being missing before Binnion contacted an EMS supervisor to check all the ambulances on the scene to see if Staley was inside one of them.

When Mixx confirmed his first report that Staley was still inside to Chief Binnion, Binnion ordered firefighters on the scene to enter the building with a second 1 ¾" line. Chief Binnion stated his firefighters did not make any attempt at entry because the hose line had not been charged. Mutual aid units from the Houston Fire Department arrived at this time and forward laid a 4" supply line for their apparatus from the south fire hydrant. Binnion directed a team of Houston firefighters to enter the building and attempt to rescue Staley.

At approximately 10:43 AM, the rescue team from Houston took a second 1 ¾" line and advanced into the building but did not get more than 10 feet into the building because of

extreme heat and poor visibility. They withdrew when the evacuation horns were sounded a second time.

All firefighters withdrew and a defensive attack was begun. A thermal imaging camera was used to look into the interior but was not effective due to the amount of heat present. L121 operated its aerial boom in a lowered position as a master stream through the front windows. A 2 ½" and a 1 ¾" hose line was operated through the front doors. Firefighters described periodic interruptions in water supply to the Porter and New Caney apparatus because they were flowing water faster than the 2 ½" hose line could fill the tank on T121. More mutual aid units arrived and a tanker shuttle was established and aerial ladders and other master streams were directed into the building from the front and above.

After about an hour, the fire in the building was sufficiently knocked down to permit firefighters to enter the interior. Two teams began searching the building and Houston firefighters found Staley, who was obviously deceased. Staley was face down and his head was facing north into the door opening of an office area. His SCBA mask-mounted regulator had been disconnected from his face piece and he did not have gloves on. Staley's chest-mounted integral PASS device was sounding but the alarm was muffled by his body. Montgomery County Justice of the Peace James Metts was contacted and pronounced Staley dead. His body was transported to the Harris County Medical Examiner's Office for autopsy.

SFMO and Montgomery County investigators attended the autopsy. They observed that Staley had suffered severe burns to his lower back, buttocks, and thighs. He had less serious burns to his chest and shoulders. Staley had received extensive burns to his bare hands in areas not protected by the thumbhole type wristlets of his coat.

When Staley's SCBA face piece was removed, there was a quantity of bright red blood present. Staley had soot deposits on his face. Staley's skin was a bright pink.

The Harris County Medical Examiner has not released the final autopsy report, so it is unknown which injuries directly caused Staley’s death. This report will be amended when the final autopsy report is released.

Personal Protective Equipment and Injury Evaluation

Firefighter Staley entered the building wearing full firefighter protective equipment, including a self-contained breathing apparatus (SCBA). When Staley's body was discovered he had his helmet, protective hood and SCBA face piece in place but his mask-mounted regulator was disconnected. Staley was wearing an SCBA with an integral chest-mounted PASS alarm device and the alarm was sounding when his body was discovered. Staley was found lying on top of his PASS device which muffled the alarm sound. There was evidence that the PASS device had been exposed to some heat and soot.

Findings & 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. Volunteer fire departments are not required by state statute to comply with these standards.

INCIDENT MANAGEMENT SYSTEM

- **Pre-action Plan:** No pre-action plan existed for this facility. In this particular fire, the IC and firefighters had only a general prior knowledge of this building and were not familiar with the current content and operation of the business.

  A pre-action plan provides the Incident Commander (IC) with strategic information on building construction, interior contents, water supply, and special hazards that are necessary to make sound tactical decisions on the fireground. The pre-action plan provides the IC with basic information for developing the Incident Action Plan at a fire.

  NOTE: Chief Binnion stated a firefighter was recently hired just prior to this incident to begin developing pre-action plans for facilities within the department's response area.

  ["Fire and rescue officials must preplan emergency operations to ensure efficient utilization of available resources." *Texas Fire and Rescue Mutual Aid Plan,* Section IV-B-2, Texas Interagency Coordination Center-Texas Forest Service. The *Texas Fire and Rescue Mutual Aid Plan* is an extension of and supportive document to the State of Texas Emergency Management Plan.]

- **Incident Action Plan:** One of the Incident Commander's (IC) responsibilities is to develop an Incident Action Plan (IAP). An IAP was not developed during the early stages of this incident. Incoming units were not advised of the attack mode selected and of specific assignments to support the fire attack.

  The IAP provides a cohesive operational plan, consisting of the strategic goals, tactical objectives and support requirements, to assist the IC in more effectively managing the incident. An IAP should be developed whenever command is established. There are several factors the IC must consider when developing the IAP. First and foremost, the IC must evaluate the three incident priorities: Life Safety, Incident Stabilization, and Property Conservation. Are there any savable occupants? What are the risks to my personnel? Do I have the resources available to control this incident? What must be accomplished in order to minimize property damage?

  Tactical benchmarks are the priorities of tasks that the Incident Commander establishes in the IAP in mitigating an emergency. Benchmarks may include search and rescue of trapped victims, protection of exposures, coordinated fire attack and ventilation to contain the fire, establishing a water supply, and preservation of property.

[NFPA 1561, *Standard on Fire Department Incident Management System,* Chapter 5.1.9-"The incident commander shall be responsible for developing and/or approving an Incident Action Plan (IAP). This plan shall be communicated to all staged and assigned members at an incident."]

NOTE: Some material in this section is excerpted from "*Tactically Speaking-Incident Action Plans*," Alan Bubel, Monroe County, NY Fire Wire, http://www.mcfw.com/main/tact/tact_8.htm and *Fire Command*, Alan V. Brunacini, National Fire Protection Association.

- **Incident Management System.** The IC's attention was diverted from monitoring the incident because he became involved in fireground operations. This did not allow him the opportunity to give strong and clear direction in this incident.

  ["The incident commander shall maintain an awareness of the location and function of all companies or units at the scene of the incident." NFPA 1561, *Standard on Fire Department Incident Management System,* Chapter 5.1.4.]

STANDARD OPERATING PROCEDURES (SOP'S)

- **Standard Operating Procedures:** Although firefighting Standard Operating Procedures (SOPs) were available from the Montgomery County Firefighters Association, the department did not have these, or SOPs developed by their own department, on file.

  Fire departments should develop and utilize SOPs that will direct fire department personnel before, during and after an incident to provide effective and consistent fireground operations while ensuring firefighter safety. At a minimum, NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program and*, NFPA 1561, *Standard on Fire Department Incident Management System,* should be utilized in developing SOPs that include, but is not limited to, use of an Incident Management System, Two-In, Two-Out Procedures and Rapid Intervention Teams.

  ["The (department) shall prepare and adopt written plans, based on the incident management system, to address the requirements of the different types of incidents that can be anticipated." NFPA 1561, *Standard on Fire Department Incident Management System,* Chapter 4.2.5.]

  ["The fire department shall prepare and maintain written policies and standard operating procedures that document the organization structure, membership, roles and responsibilities, expected functions, and training requirements, including the following:

  (1) The types of standard evolutions that are expected to be performed and the evolutions that must be performed simultaneously or in sequence for different types of situations

  (2) The minimum number of members who are required to perform each function or evolution and the manner in which the function is to be performed

(3) The number and types of apparatus and the number of personnel that will be dispatched to different types of incidents

(4) The procedures that will be employed to initiate and manage operations at the scene of an emergency incident."

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program,* Chapter 4.1.2].

FIREFIGHTING OPERATIONS

- **Crew Integrity:** Firefighters on the initial hose team were allowed to enter the burning building without a clear team leader being designated by the Incident Commander.

  ["The incident commander shall assign intermediate levels of supervision and organize resources following standard operating procedures based on the scale and complexity of operations." NFPA 1561, *Standard on Fire Department Incident Management System,* Chapter 5.13.2.2.]

  Hose crew did not remain together. As conditions deteriorated inside the building and firefighters began leaving the hose line, the team did not exit the building as one group. Crews remaining together can maintain accountability, exit as a team, and facilitate their safe escape from a building while minimizing the risk of injury.

  ["Members (of the fire department) shall be responsible for following personnel accountability system procedures." NFPA 1561, *Standard on Fire Department Incident Management System,* Chapter 4.8.5.]

- **Communications:** The hose crew did not communicate with command. The initial attack team did not keep the Incident Commander advised of the interior conditions encountered, actions being taken or additional resources needed.

  ["Effective communications are essential to ensure that the incident commander is able to receive and transmit information, obtain reports to maintain an awareness of the situation, and communicate with all component parts of the incident organization to provide effective supervision and controls." NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program,* Chapter A.8.1.8 (3).]

  No "MAYDAY" signal was transmitted by any member of the hose team as conditions deteriorated within the building. The hose team was equipped with only one portable radio. Every firefighter should have personal radio communications equipment while operating in the "hot zone." Communications is essential for effective fireground operations. During this incident, the lack of personal radio equipment contributed to the lack of vital information being communicated to the Incident Commander. The trapped firefighter was unable to radio his position, his situation, or a "MAYDAY" signal.