STATE FIRE MARSHAL'S OFFICE

Firefighter Fatality Investigation

Investigation Number FY 07-02

Captain Kevin Williams
Firefighter Austin Cheek

Noonday Volunteer Fire Department
August 3, 2007

Texas Department of Insurance
Austin, Texas

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- Noonday Volunteer Fire Department
- Flint-Gresham Volunteer Fire Department
- Bullard Volunteer Fire Department
- City of Tyler Fire Department
- Smith County Fire Marshal's Office
- U. S. Department of Justice; Bureau of Alcohol, Tobacco, Firearms, and Explosives
- Texas Fire Chiefs Association
- South Hays Fire Department
- Texas Commission on Fire Protection
- State Firemen's and Fire Marshals' Association
- Dallas County Medical Examiner's Office
- National Institute for Occupational Safety and Health

Executive Summary

On August 3, 2007, two Noonday Volunteer Fire Department (VFD) firefighters lost their lives during fire fighting operations at a house fire. At 1:36 AM the Smith County 911 dispatcher received a report of a house fire near the town of Bullard. The Flint-Gresham VFD was dispatched and responded to the house fire, reporting flames visible when they arrived. The Noonday VFD responded to the house fire in accordance with their mutual aid agreement with Smith County Fire Department.

The Flint-Gresham VFD was in the process of an interior attack of the house fire when Noonday VFD arrived to the scene. Forty-two-year-old Kevin Williams, a five year veteran of the Noonday department, and 19-year-old Austin Cheek, who had served less than a year with the department, relieved the Flint-Gresham VFD interior attack team and continued the interior attack operations.

During the next 15 to 25 minutes of firefighting operations, which included several attempts to adequately ventilate the structure, Captain Williams and Firefighter Cheek were overcome by the fire conditions. Rapid Intervention Crews located and rescued the two firefighters, who were then transported to the East Texas Medical Center where emergency room staff continued efforts to resuscitate them.

Firefighter Cheek was pronounced dead at 03:17 AM. Captain Williams was pronounced dead at 03:34 AM. The cause of death for both firefighters was smoke inhalation and thermal injuries.

More than 90 firefighters, representing 14 departments from the Smith County area, contributed to activities associated with this incident.

Introduction

On Friday, August 3, 2007, the Texas State Fire Marshal's Office was notified of multiple firefighter fatalities by the Smith County Fire Marshal's Office. Smith County Fire Investigator Marilyn Wilson advised that two volunteer firefighters were killed during firefighting operations at a residential structure fire. Deputy Wilson advised that the firefighters were transported to the East Texas Medical Center, where they were pronounced dead. Their bodies were transported to the Dallas County Medical Examiner's Office for autopsy.

The State Fire Marshal's Office (SFMO) commenced the firefighter fatality investigation under the authority of Texas Government Code Section 417.0075. The statute requires the SFMO to investigate 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 purpose of this investigation is to honor these fallen firefighters and is not intended to place blame on any action or individual. It is intended as a learning tool for the fire service to promote safety during emergency operations and prevent loss of life.*

Texas State Fire Marshal Investigators Thomas Cooley and Kyle Morris, and Chief Inspector Susan Jarvis were assigned to respond to the fire scene, initiate an assessment of the scene, and assist the Smith County Fire Marshal's Office. Investigators Dean Shirley, Harry Bowers, Accelerant Detection Canine Officer Tommy Hubertus, and Fire Safety Inspector Belinda Ambrose were dispatched to respond. Investigator Shirley was assigned as the SFMO firefighter fatality investigation Incident Commander (IC).

The investigation began on August 3, 2007, with the initial assessment and survey of the involved property and a review of the records of the incident at the Flint-Gresham Volunteer Fire Department. Periodic updates regarding the incident were provided to the SFMO Incident Commander as investigation team members responded to the incident location.

Incident briefings from SFMO staff at the scene were communicated to the SFMO IC and an action plan of assignments and objectives for the investigation was established. Investigator Cooley was assigned to lead the Origin and Cause Investigation. Inspector Jarvis was assigned to lead the Building Structures and Systems Group. Investigator Bowers arrived to provide assistance as a liaison between the investigations team and the local fire departments. The Smith County Fire Marshal's Office also requested assistance from the Bureau of Alcohol, Tobacco, Firearms and Explosives. ATFE Special Agent Larry Smith responded to the fire with a team of investigators and immediately began assisting with fire origin and cause investigation operations. Texas State Fire Marshal's Office personnel incorporated themselves into the on-going investigation as they arrived at the fire scene.

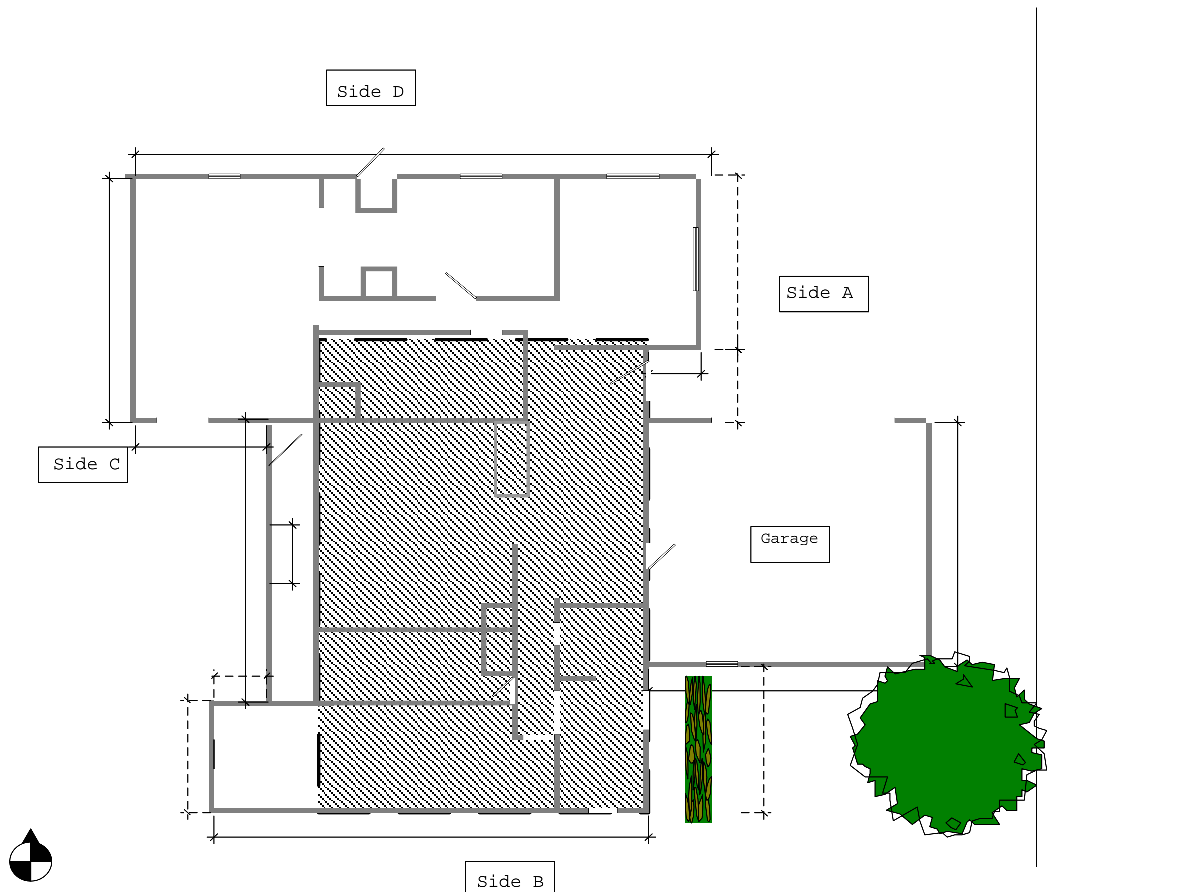
The Texas Fire Chiefs Association was requested to provide assistance on examining and assessing fireground tactics and South Hays Fire Department Chief David Smith responded. Chief Smith serves in the Hays County Emergency Service District 3, a department serving a community roughly the size of Noonday. The Texas Commission on Fire Protection (TCFP) assisted in the evaluation of the personal protective equipment of the firefighters. The National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation and Prevention Program was notified.

Building Structure and Systems

The house was of wood frame construction, approximately 65 feet wide and 80 feet long from the front of the garage to the rear of the master bedroom. It was built on a concrete slab foundation with a composition roof. Electrical service was supplied through a meter located at the southwest corner area. The exterior walls were unprotected wood siding. The interior finish was wood paneling or gypsum board walls and ceilings. The house consisted of four bedrooms, two bathrooms, an attached garage, and an enclosed patio with approximately 2700 square feet of living space. The house had extensive additions since its construction in the 1970s. The original house was pre-fabricated and site constructed, with exterior walls and roof consisting of structural insulated panels (wood panels over polyurethane foam). The original construction included the living room, dining room, kitchen, one bathroom, and three bedrooms approximately 30 feet by 50 feet (See Diagram 1). The new construction included combining the two small bedrooms at the southeast corner by removing the separating wall. Additions to the original structure involved the removal of the roof overhang and construction of a new roof over the entire structure resulting in a double roof over the original structure. New construction included the addition of the garage and north end of the house consisting of the master bedroom, master bathroom, study/office, and bedroom. Three-quarter inch plywood sheets were added over the ceiling joists in the attic space of the new construction for a future second floor addition.

One smoke detector was in the hallway leading to the added bedroom and master bedroom. No other smoke detectors were reported to be installed in the rest of the house.

Diagram 1



Origin and Cause Investigation

The origin and cause investigation began on August 3, 2007. The investigation was led by State Fire Marshal's Office Investigator Thomas Cooley and Alcohol, Tobacco, Firearms, and Explosives Bureau Special Agent Larry Smith. Documentation of the fire scene included measurements and photographs of the structure and identification of the locations of victims, apparatus, equipment, and hose lines.

The origin and cause examination of the scene was accomplished using a systematic approach identifying the least and most damaged areas. Debris was examined and removed to reveal locations of furnishings, appliances, and electrical equipment.

Interviews indicate that sometime after 1:30 AM the owner was awakened by a beeping smoke detector and the smell of smoke. He stated that he got up and went into the living room and it looked hazy down the hallway by the younger girls' bedrooms. He stated that he could not see to the end of the hallway. He went back to the master bedroom, woke the children up, and got them out of the house. He stated that he went to the garage and opened the door from the living room to the garage to get a pet ferret which was in a cage in the garage. He stated that they exited the structure through the front door. The owner did not report seeing any fire, only smoke at this time. He left in his vehicle with the children and took them to their grandparent's house, approximately one mile away. He told them the house was on fire as he was leaving the children, and then drove back to the house. The owner went to the neighboring houses to the north and to the south and got no response to his knocking. He was able to get someone to answer the door at the two houses to the immediate south of his house and told them that his house was on fire and they called 911.

The origin of the fire was determined to be in the area of the original construction involving the hallway, laundry room, and bedroom one. The cause of the fire remains undetermined.

Fire Operations and Tactics

NOTE: *The following sequence of events was developed from known times of events based on radio transmissions, telephone records, time stamped photographs and firefighter witness statements. Those events with known times are identified. Events without confirmed times are approximated in the sequence of events based on firefighter statements regarding their individual actions and observations at the fire.*

At **01:36:05 AM** Smith County 911 operators received a report of a structure fire at 20188 FM 2493. The first report came from a family member who said her son-in-law dropped off his children, said his house was on fire, and then left. The radio recording indicates the Flint-Gresham Fire Department was notified at **01:37:41** by Smith County Sheriff's Office Dispatch.

As Flint fire crews assembled at the fire station, Smith County received a second and then a third 911 call in reference to the fire. Flint-Gresham Engine 1, a 1999 Pierce pumper with 1,000 gallons of water and a 1250 gpm pump was put into service and responded with Asst. Chief Patrick Baldauf riding officer's seat, Firefighter Corey Thatcher chauffeuring, and Firefighters Victor Robles, Ben Barnard and Joshua Rawlings in the crew area.

As Flint-Gresham VFD Engine 1 responded at **01:48:00**, Smith County Dispatch advised the house was fully involved. While en route to the scene Flint-Gresham VFD Asst. Chief Baldauf requested help from the Noonday and Bullard Fire Departments, the first mutual aid request of the night. Flint-Gresham, Noonday and Bullard Fire Departments had fought another house fire together the previous day. Bullard and Noonday Fire Departments were dispatched by Smith County at **01:49:11**.

Flint-Gresham Engine 1 arrived on scene at **01:50:21** positioning short of side "A" and reported, "On location, flames visible." Asst. Chief Baldauf reported over the radio that no one was inside the house at **01:51:51** after a conversation with bystanders on scene. Asst. Chief Baldauf's designations for exterior sides are a counter-clockwise rotation from the street side. Accordingly, since side "A" is the street side, side "B" is the north side to the right of the front door. Noonday FD Chief Aarant also followed this procedure. Bullard Chief Newburn indicated a clockwise designation of the sides in his statements. *(Note: Scene diagrams follow the general accepted practice of designations in a clockwise rotation.)*

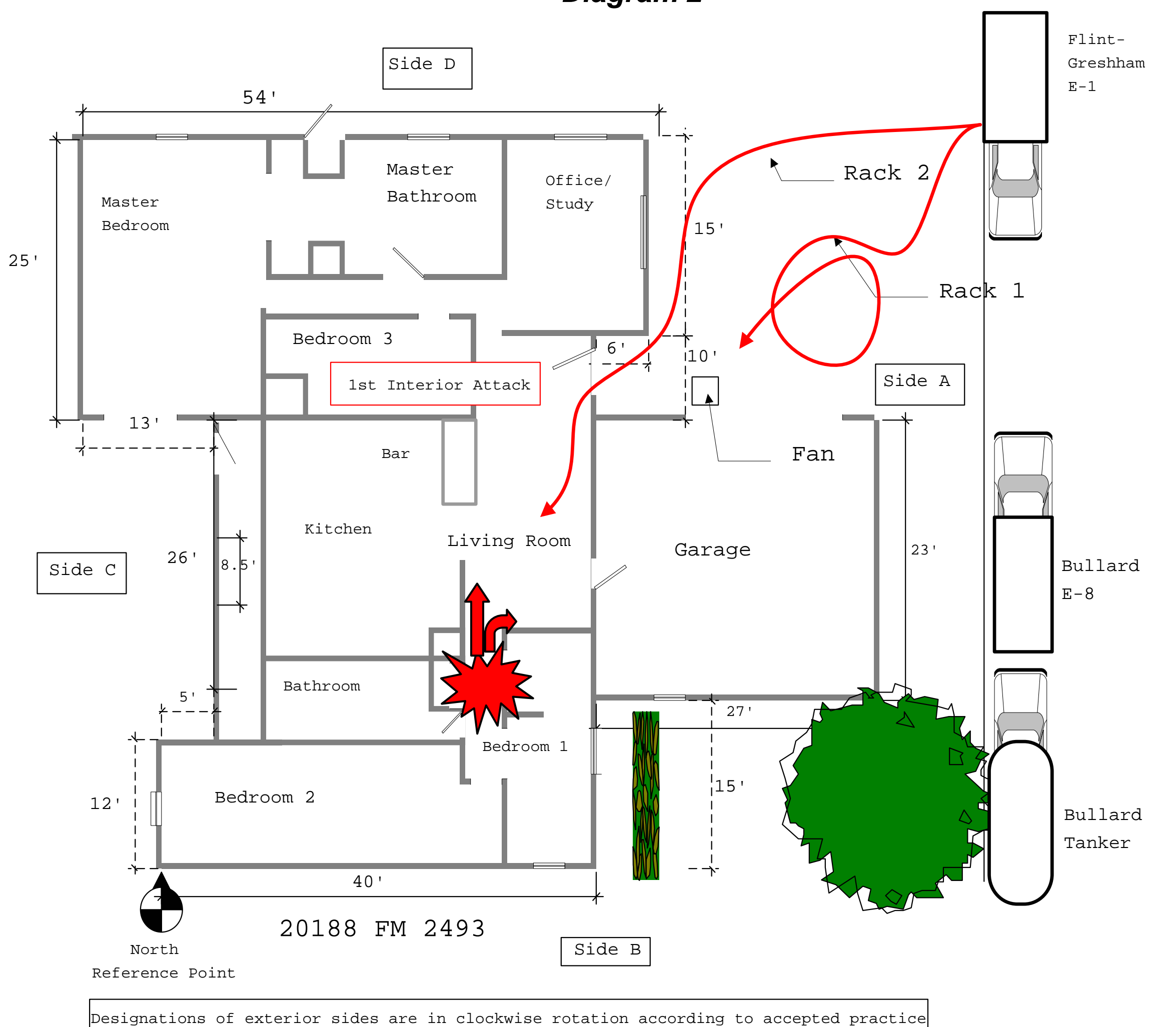
Firefighters Joshua Rawlings and Ben Barnard of the Flint-Gresham VFD pulled rack line 2, a 200' 1.75" line, to the front door on side "A." Flint-Gresham VFD Firefighter Robles conducted a quick survey of the north side and then positioned the vent fan at the front door to initiate Positive Pressure Ventilation (PPV). Robles stated that the PPV was set and operating prior to entry by the first attack team. Robles stated that he started to survey the south side and noted heavy black smoke from the top half of a broken window. He stated that he reported this to the IC. Flint-Gresham VFD Firefighter Thatcher operated the pumper. Asst. Chief Baldauf pulled rack line 1, a 150' 1.75" line, and positioned it at the front door. Baldauf and Robles were acting as the rapid intervention crew (RIC 1) until Bullard FD arrived. Baldauf assumed command when he was relieved by Bullard Firefighter Justin Walker.

Asst. Chief Baldauf assumed command over radio channel 1-E; however, a stationary command post was not set up. The Incident Commander remained mobile throughout the entirety of the incident.

At **01:52**, 16 minutes after the first 911 calls, Flint-Gresham Firefighters Barnard (nozzle) and Rawlings (backup) entered through the open front door and advanced 8-10 feet on a left hand search. This attack team noted flames rolling across the ceiling moving from their left to their right as if from the attic. Rawlings stated that flames were coming out of the hallway at the ceiling area and around the corner at a lower level. Barnard reported the hottest area at the hallway. The interior attack team then backed out to the front doorway and discussed their tactics. After a brief conversation, Rawlings took the nozzle with Barnard backing him and they re-entered. They entered approximately 10 feet and encountered flames rolling from their left to their right. They used a "penciling technique" aimed at the ceiling to cool the thermal layer. Rawlings reported in interview that there was an increase in heat and decrease in visibility as the thermal layer was disrupted and heat began to drop down on top of them.

At **01:53:52** Command requested the Flint-Gresham tanker for water supply, as there were no hydrants in the vicinity of the fire.

Diagram 2



Radio logs show that at **01:54:50** Command attempted communication with the interior for a status report but failed to receive a response. Rawlings later attributed this failure to respond to the noise level caused by the PPV and the conditions inside the structure.

Noonday Engine 1 and Engine 2 went en route at **02:01:08**. Chief Gary Aarant, Captain Kevin Williams, Firefighters Austin Cheek, James Broome and Travis Barnett staffed Noonday Engine 1. Firefighters Raylene Yates and Robert Koss staffed Engine 2.

Bullard Engine 8 and Tanker 1 responded at **01:59:28** and arrived on scene at **02:02:40**. Engine 8 crew included Chief Newburn, Firefighter David Stephens, Junior Firefighter Brian Newburn. Justin Walker staffed Tanker 1. Chief Keith Newburn met with the Incident Commander on side "A" and requested an assignment. They did not use the established Personnel Accountability System as they arrived. Incident Command asked Chief Newburn to set up a rapid intervention crew (RIC). Chief Newburn advised Command that only one of his firefighters had enough experience to operate as a RIC member. Command then assigned Bullard to vertical ventilation. Bullard Firefighter Walker was assigned to the RIC but began assisting with roof ventilation until running out of air. Robles, also on RIC 1, went to the back of the house to remove the owner's dogs from inside the enclosed patio.

Firefighters Rawlings and Barnard penciled the rolling flames in the thermal layer until Rawlings' low air alarm sounded. At **2:08:44** Command called the interior attack team for status and did not receive a response. Noonday Engines 1 and 2 arrived at **02:09:27**. Rawlings and Barnard exited after being inside for 15-20 minutes. Chief Aarant met with the Incident Commander on side "A" and requested assignment. Command assigned Chief Aarant as side "C" Command. The Incident Commander, Captain Williams and Firefighter Cheek met Firefighters Rawlings and Barnard at the front door and a briefing occurred. The IC stated that he asked Rawlings for an explanation for failing to respond to his radio call and Rawlings told him that there was so much noise that he could not hear the radio. Firefighters Rawlings and Barnard reported to Asst. Chief Baldauf they had the hot spots out. Rawlings stated in a later interview that they told Williams and Cheek they knocked down the fire and only overhaul was needed.

At 02:10 Noonday FD Captain Williams and Firefighter Cheek are briefed before entering (Photo Courtesy of Bullard FD)

At **02:13**, Captain Williams and Firefighter Cheek entered the structure as attack team 2, using the same line previously utilized by Firefighters Rawlings and Barnard. Command assembled a RIC on side “A;” however, this team remained fragmented as crew members took on additional tasks including roof ventilation and the rescue of pets at the rear of the house.

Exterior crews from Noonday and Bullard started horizontal ventilation by breaking a window out on side “D” (north side). Noonday Chief Gary Aarant performed a walk around, then reported heavy smoke from the “B”-“C,” and “C”-“D” corners and at **02:15:51** asked if vertical ventilation had been started. Command then gave the order to begin vertical ventilation, at which time Chief Aarant advised Command he would be leaving side “C.” Noonday and Bullard crews attempted vertical ventilation of the roof over side “D” near the peak but were first hampered by a chainsaw that would not cut, and then low air in their SCBAs.

At **02:16:15**, Captain Williams radioed Command and asked “Do we have power turned off in the house?” Command asked him to repeat and received no response. At **02:16:36** Incident Command again attempted contact with the interior team for their status and did not receive a response. Asst. Chief Baldauf stated during a later interview that he attributed the lack of response to the high noise levels inside the structure, as had occurred with the first attack team. Radio logs show that at **02:18:18** another attempt by Command to check on the status of the interior team was made and failed to receive a response.

This photo at 02:17:40 shows white-gray smoke exiting the front door, over-powering the PPV fan. Safety line is unstaffed. Williams and Cheek have been inside for four minutes. (Photo Courtesy of Bullard FD)

At 02:19:41 the IC and other Chiefs are shown monitoring activities during roof ventilation, six minutes after entry by Williams and Cheek. (Photo courtesy of Bullard FD)

Several pictures showed Command moving from the front door to side "D" and firefighters staffing the hoseline while ventilation was attempted on the roof. At **02:20:31** IC Baldauf took the unmanned safety line from the front of the house and he and Chief Aarant passed the line to the roof ventilation team. Photos show that the roof ventilation team had the safety line.

At 02:20:31 Command and Asst. Chief Aarant pull the safety line to side "D" for the ventilation team. (Photo by Bullard FD)

This photo at 02:23 shows thick, black smoke exiting the front door under pressure. Williams and Cheek have been in for 11 minutes. (Photo courtesy of Bullard FD)

At 02:26 the safety line is on the roof as a power saw is passed up the ladder. (Photo by Bullard FD)

Meanwhile, smoke conditions on side "A" were deteriorating. At **02:28:53** Command called Interior Command for status and received no response. Photographs show firefighters climbing down from the roof at approximately **02:29** after cutting a hole for ventilation. Crews were unable to break through any sheetrock of the ceiling due to a plywood floor in the attic.

Noonday FD Chief Aarant asked Asst. Chief Baldauf how long the interior team was inside. Baldauf told Aarant 14 to 15 minutes and Aarant said that was too long. Radio logs indicate that Baldauf called for RIC at **02:31:49.** Bullard Chief Newburn and Firefighter David Stephens put the safety line into service in the front door in an attempt to knock down the fire as a RIC was quickly reassembled at **02:32.** Newburn and Timmons remained back from the front door as they were not wearing SCBA.

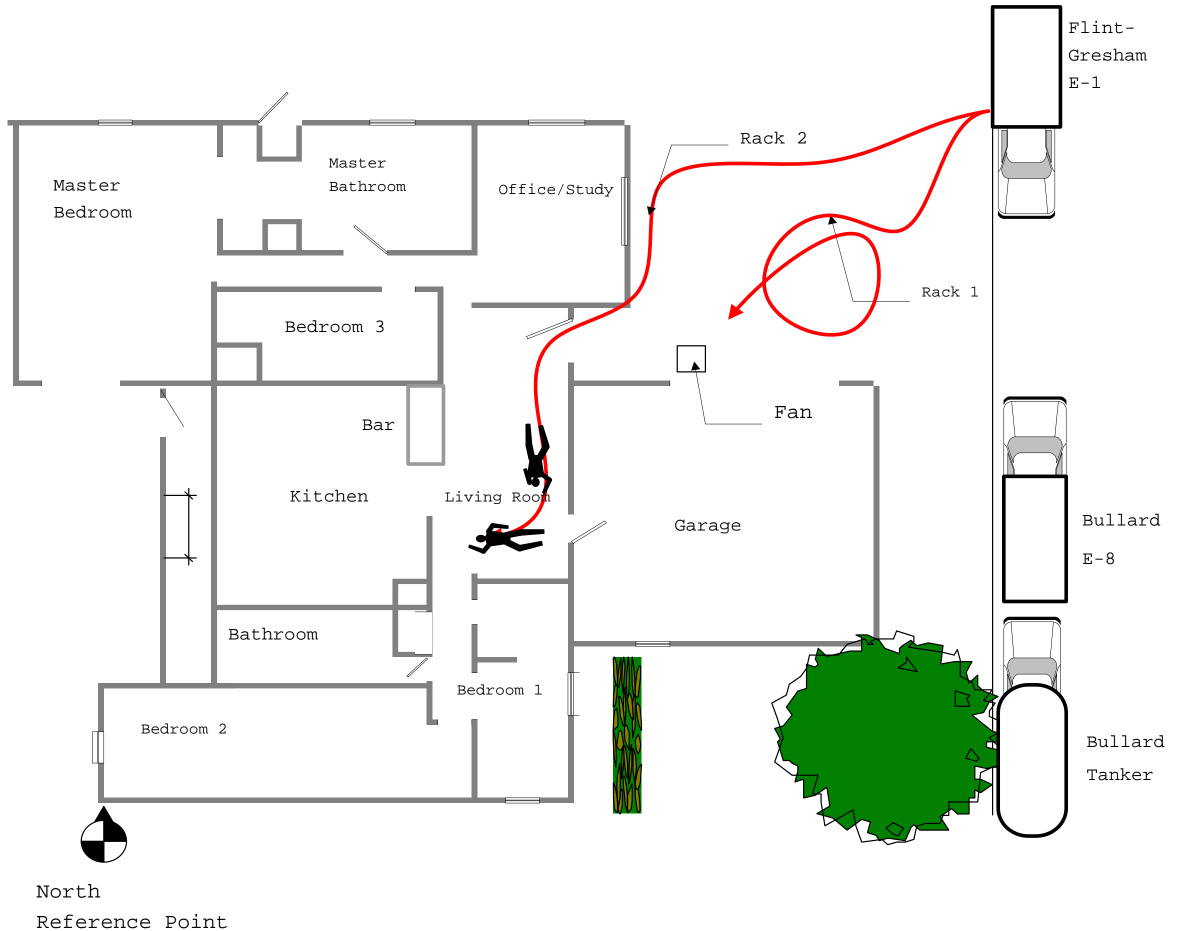
At 02:30:10 flames are visible exiting front door just before operations went to rescue. Williams and Cheek have been in for 16 minutes. (Photo courtesy of Bullard FD)

At 02:30:49 the safety line is staffed at the front door as smoke and flames vent from the front door. Captain Williams and Firefighter Cheek have been inside for 16 minutes. (Photo by Bullard FD)

Raylene Yates (Noonday), David Stephens (Bullard) and Corey Thatcher (Flint-Gresham) were assigned as RIC 2. RIC 2 entered at **02:33** just after the evacuation signal. At **02:33** Command transmitted "I need all firemen; I have two men down inside; have two men down inside!" There is no indication that the personnel accountability report (PAR) was performed even though the Bullard Fire Chief told the IC to call for PAR immediately.

The evacuation horn led to some confusion with RIC 2, causing them to become separated. Thatcher later described interior conditions as the whole room glowing with fire and flames traveling above their heads. Firefighter Yates entered first and made her way to Cheek's location. Yates moved Cheek until he got caught on something, which prevented further movement. Yates returned to the front door to request additional assistance. As Yates was making her way to the exit, she unknowingly passed Stephens and Thatcher in the heavy smoke.

Diagram 3
Locations of Downed Firefighters



After hearing the calls for assistance from Yates, Firefighter Stephens and Firefighter Thatcher found Cheek and removed him from the structure. Firefighter Cheek's gear was removed before he was taken to an ambulance and subsequently transported to East Texas Medical Center.

RIC 3, composed of Bullard Firefighter Justin Walker and Noonday Firefighter Travis Barnett, was formed and entered the structure. RIC 3 located Captain Williams and after several unsuccessful attempts to remove Captain Williams, the crew exited the structure and requested additional assistance. RIC 4, composed of Firefighters Victor Robles, Ben Bernard and Robert Koss was then assembled. Firefighters Robles and Koss entered the structure as Firefighter Barnard tried a secondary route through an interior garage passage door. Unable to open the door, Barnard returned to the front door and stood by. The removal of Captain Williams began when he was located by Firefighters Robles and Koss. At this time Incident Commander Baldauf and Firefighter Barnett breached the passage door in the garage and witnessed the removal of Captain Williams. CPR was performed by on-scene crews. Captain Williams was transferred to a second ambulance and subsequently transported to East Texas Medical Center.

At **02:58:52** IC notified Smith County that all firefighters were out and operations were defensive only, while requesting additional mutual aid. The City of Tyler Fire Department responded with Ladder 2, Engine 5, Safety 1 and Safety 2 with seven additional personnel. Tyler Fire Department Senior Captain Haisten took over as IC, relieving Flint-Gresham FD Asst. Chief Baldauf. The following departments responded and accepted continuing assignments as needed: Whitehouse, Dixie, Chapel, Lindale, North Cherokee, Gallatin, New Summerfield, Jacksonville, Troup, and Winona.

View of the scene from the southwest
(Photo by Smith County Fire Marshal)

Personal Protective Equipment Evaluation

The Texas Commission on Fire Protection (TCFP) was contacted and requested to conduct an evaluation of the firefighters' personal protective equipment for performance. Volunteer Fire Departments in the State of Texas are not required to meet performance and compliance rules of the Texas Commission on Fire Protection; however, the evaluation was necessary to identify any possible contributing factors that might assist in the investigation of the fatalities.

The protective equipment was evaluated by TCFP Compliance Officers Fred Green and Robert Manley for compliance with Texas Administrative Code Title 37, Part 13, Chapters 435.1, *Protective Clothing* and 435.3, *Self-Contained Breathing Apparatus* and NFPA standards adopted by TCFP. Photographs taken during the examination are on file at the Texas Commission on Fire Protection. The TCFP reports are located in the reference materials of the SFMO investigation file.

The examination of the protective equipment took place at the Smith County Fire Marshal's Office on August 9, 2007. The gear was secured in a locked area maintained by the Smith County Fire Marshal.

Captain Williams

Captain Williams was wearing a Scott brand Personal Alert Safety System (PASS) device that was in the "On" position and appeared operable. The portable radio Williams was carrying had thermal damage and melted tar on it. Williams was wearing turnout coat and pants, firefighting helmet, protective hood, face shield, gloves, and bunker boots that were reportedly donned properly.

Condition of PPE

a) Captain Williams was wearing a Morning Pride brand helmet. His helmet had melted tar covering the rear half of the helmet, the crown, and the bill.

(Photo courtesy of Smith County Fire Marshal's Office)

b) His American Fireware hood indicated heat and smoke exposure.

(Photo courtesy of Smith County FM)

c) His Lion brand turnout coat had damage due to the apparent exposure to high heat conditions, causing charring to the back and tail of the coat. Burn through of the outer shell and liner is easily visible.

d) His Lion brand turnout pants had signs of exposure to heat and smoke.

e) His Lion gloves also had indications of exposure to heat and smoke as did the Black Diamond boots he was wearing.

Condition of Self Contained Breathing Apparatus

Captain Williams was wearing the Scott air pak when he was found.

a) The Luxor air cylinder serial number was unreadable due to the tar on its surface. The cylinder pressure gauge was too heat damaged to read.

(Photo Courtesy of Smith County FM)

b) The face piece was found to be intact and serviceable but had indications of heat and smoke exposure.

c) All hoses and tubes had signs of heat and smoke exposure.

d) The regulator had indications of heat and smoke exposure. The mainline valve position was reported as unknown, as was the bypass valve position. The regulator gauge was reading zero at the time of inspection.

e) There were signs of heat and smoke exposure of the back frame and harness assembly, but not enough to affect performance.

(Photo courtesy of Smith County FM)

Green reported that inspection documentation for this unit was unavailable from Noonday VFD but he did indicate that a flow test was last performed in July 2006.

Firefighter Cheek

Cheek was wearing a Scott brand Personal Alert Safety System (PASS) device that was in the "On" position and appeared operable. Cheek was wearing a turnout coat, turnout pants, firefighting helmet, protective hood, face shield, gloves, and bunker boots that were reportedly donned properly.

Condition of PPE

a) Cheek's Lion brand helmet exhibited heat damage to the rear bill and a bubbled face shield.

b) Cheek's Quest brand turnout coat had heat damage to both arms and right waist with heat damage to outside of liner.

c) His Quest brand turnout pants also exhibited thermal damage to outside of the liner.

d) His Safety Equipment brand gloves showed indications of exposure to heat and smoke as did his Crosstech brand boots.

Condition of Self Contained Breathing Apparatus

Firefighter Cheek was wearing the Scott air pak when he was found.

a) The Luxor air cylinder with serial number E-10915-2216 exhibited signs of heat and smoke exposure. The cylinder pressure gauge was at zero.

b) The face piece was found to have bubbling from exposure to heat.

(Photo courtesy of Texas Commission on Fire Protection)

c) The low pressure hose was severed approximately six inches from the harness connection.

(Photo courtesy of Smith County FM)

d) The regulator had indications of heat and smoke exposure. The mainline valve position was reported as unknown, as was the bypass valve position. The regulator gauge was reading zero at the time of inspection.

e) There were signs of heat and smoke exposure to the back frame and harness assembly but not enough to effect performance

Green indicated that inspection documentation was unavailable but he did indicate that a flow test was last performed in July 2006.

Recommendations

These recommendations were formed through a review of the fatality report and timeline. Recommendations are based upon nationally recognized consensus standards and safety practices for the fire service and the Standard Operating Guidelines (SOG) of the Flint-Gresham, Noonday, and Bullard Fire Departments. All fire department personnel should know and understand nationally recognized consensus standards, and all fire departments should create and maintain SOGs and SOPs to ensure effective, efficient, and safe firefighting operations.

FINDINGS: 1 *A stationary command post was not set up and the Incident Commander remained mobile throughout the incident.*

Recommendations: Fire departments should familiarize themselves with National Fire Protection Association Standard (NFPA) 1561 "Emergency Services Incident Management System" and train in the use of the National Incident Management System (NIMS).

NFPA 1561, 5.3.7.1 A stationary command post should be established to plan, organize, and account for all aspects of the operation.

NFPA 1561, 5.3.7.2 Following the initial stages of an incident, the Incident Commander shall establish a stationary command post. In establishing a command post, the Incident Commander shall ensure the following:

1) The command post is located in or tied to a vehicle to establish presence and visibility.
2) The command post includes radio capability to monitor and communicate with the assigned tactical, command, and designated emergency traffic channels for that incident.
3) The location of the command post is communicated to the communications center.
4) The Incident Commander, or his or her designee, is present at the command post.
5) The CP shall be located in the cold zone of an incident.

The Incident Commander should establish the command post in a tactically advantageous area where overall scene operations can be monitored, post security maintained, and communication systems monitored. *NFPA 1561, 5.3.7.2*

FINDINGS: 2 *Although a RIC was established during operations, the RIC was not dedicated for immediate deployment*.

This is acceptable under the recommendations of NFPA only if at least one person is readily available and capable of performing rescue operations if needed. At this incident both members of RIC 1 were performing other duties and were not ready for immediate deployment. RIC was called by the IC, with a delay in response and deployment.

Recommendations: Fire departments must familiarize themselves with, and train on, the use of Rapid Intervention Crews. RIC should be formed once a fire has progressed beyond the incipient stage, and when personnel work inside of an Immediate Danger to Life and Health (IDLH) atmosphere. Once a RIC is formed, they must actively monitor and report changes in fire conditions to the Incident Commander and not take on other duties.

NFPA 1500 8.8.7 At least one dedicated RIC shall be standing by with equipment to provide for the rescue of members that are performing special operations or for members that are in positions that present an immediate danger of injury in the event of equipment failure or collapse.

Occupational Safety and Health Administration, 29 CFR Section 1910.134 (g) (4)
NFPA 1500 Standard on Fire Department Occupational Safety and Health Program, Chapter 8
NFPA 1720 Standard on Organization and Deployment Fire Suppression Operations,
Standards for Accountability, SOP100, Smith County Firemen's Association

FINDINGS: 3 *The Incident Commander did not ensure that a personnel accountability system was immediately utilized.*

Recommendations*:* An Incident Safety Officer or Accountability Officer, independent from the Incident Commander, should be appointed and on scene early in the incident to assure that accountability is accomplished, a rapid intervention crew is established, and hazard zones are monitored.

The Incident Safety Officer (ISO) is defined by NFPA 1521 as *"an individual appointed to respond to or assigned at an incident scene by the incident commander to perform the duties and responsibilities specified in this standard. This individual can be the health and safety officer or it can be a separate function."*

NFPA 1720, Chapter 4 paragraph 4.5.1.3 regarding accountability;
Standards for Accountability, SOP100, Smith County Firemen's Association;
NFPA 1521, Section 2, paragraph 1.4.1 states that "an incident safety officer shall be appointed when activities, size, or need occurs."

FINDINGS: 4 *Initial crews failed to perform a 360-degree scene size-up and did not secure the utilities before operations began.*

Although scene size-up was partially completed it was conducted after the interior attack commenced. There was no indication that the south side, side "B," was visually inspected by any of the responders during the initial stages of the response.

Recommendations: Fire departments should develop Standard Operating Guidelines that require crews to perform a complete scene size-up before beginning operations. A thorough size up will provide a good base for deciding tactics and operations. It provides the IC and on-scene personnel with a general understanding of fire conditions, building construction, and other special considerations such as weather, utilities, and exposures. Without a complete and accurate scene size-up, departments will have difficulty coordinating firefighting efforts.

Fireground Support Operations 1st Edition, IFSTA, Chapter 10
Fundamentals of Firefighting Skills, NFPA/IAFC, 2004, Chapter 2

FINDINGS: 5 *Perimeter designations were inconsistent between responding departments.*

The Incident Commander and responding mutual aid department chiefs related different designators for the exterior perimeter while conducting scene size-up. This may have led to confusion about the conditions of the structure and the improper placement of ventilation operations.

Recommendations: All responding departments should follow accepted practices regarding location and perimeter designations. Perimeter designators are recommended to follow a clockwise rotation.

Fire Department Company Officer, Chapter 21, IFSTA, 3rd ed.
Fire Officer Principles and Practice, Chapter 15, NFPA/IAFC, 2008

FINDINGS: 6 *Ventilation operations were not closely coordinated with interior fire attack placing the crew between the fire and the point of ventilation.*

Initial crews reported to Command that the fire was on their left (south, towards side "B") and ventilation was performed on side "D." The placement of ventilation openings caused the interior firefighters to be placed between the fire and the ventilation opening. Without a viable ventilation opening, coordination with the interior attack team, and the injection of fresh air by the PPV fan, interior conditions deteriorated to the point of flashover.

Recommendations: Fire departments should familiarize themselves and train on the proper techniques for vertical and horizontal ventilation. Ventilation is the systematic removal of smoke, heat and particles of combustion thereby improving life safety, increasing firefighter visibility, and reducing the chances of flashover. Horizontal ventilation openings should be made as close as possible to the seat of the fire. Vertical ventilation should be performed as directly over the fire and as high as possible. According to the *Essentials of Fire Fighting 4th ed.* "If forced ventilation (positive pressure) is misapplied or improperly controlled, it can cause a great deal of harm" (p. 367). "Positive-pressure ventilation requires good fireground discipline, coordination, and tactics" (p. 369). To perform effective positive pressure ventilation the building must not be pressurized until a correctly placed ventilation opening is made, otherwise the introduction of such large volumes of air will cause the fire to intensify and spread.

Essentials of Fire Fighting 4th Edition, IFSTA, Chapter 10;
Structural Firefighting Strategy and Tactics, NFPA, Chapter 4

FINDINGS: 7 *The Incident Commander failed to establish good communications with interior crews and did not take immediate actions when his request for updates went unanswered.*

The noise on-scene by the PPV fan, apparatus pumps, and ventilation crews impaired the ability of the personnel to hear and respond to radio traffic. Command should remain in communication (including, but not limited to, radio) with interior personnel at all times. Any failure in communications should result in an immediate evacuation order and the accountability of members verified with a Personnel Accountability Report (PAR.)

Recommendations: Fire departments should develop written policies and procedures for effective fire ground communications and should make sure there are adequate numbers of portable radios for use by crews. Departments should develop a policy for dealing with communications breakdowns, such as calling an immediate evacuation, a Mayday, or deploying a RIC.

NFPA 1500 *Standard on Fire Department Occupational Safety and Health Program, Chapter 8*;
Fundamentals of Firefighter Skills–NFPA/IAFC, 2004, Chapter 2, pg. 27

FINDINGS: 8 *As fire conditions progressed changes were not made to the fireground operations.*

Recommendations: Incident Commanders must continually monitor fire-ground conditions and make changes to the Incident Action Plan as needed. Incident Commanders or their designee must maintain communications with interior crews and request updates on fire ground conditions.

NFPA 1561, 5.3.17 The Incident Commander shall evaluate the risk to responders with respect to purpose and potential results of their actions in each situation.

NFPA 1561, 5.3.18 In situations where the risk to emergency service responders is excessive activities shall be limited to defensive operations.

NFPA 1561, 5.3.8 The Incident Commander shall continually conduct a thorough situation evaluation.

NFPA 1561, Standard on Fire Department Incident Management System; 2008
Fire Department Company Officer, NFPA 3rd ed., Chapter 20

FINDINGS: 9 *The initial attack crew did not advance to the seat of the fire and reported to the second attack team that the fire was under control with only mop up operations needed.*

The initial attack crew failed to recognize rollover coming from the area of origin. It is extremely important to recognize indications of rollover early in operations because it is usually a precursor to flashover. They used a “penciling” technique to extinguish the flames above them and continued application of small amounts of water toward the ceiling, causing the fire to retreat into the area of origin and disrupt the thermal layer. This caused a decrease in visibility along with raised heat intensity. The interior crew did not advance toward the area of origin and search for the seat of the fire. Interior crews also failed to call for ventilation and relay this information to the Incident Commander.

Recommendations: Fire departments should familiarize themselves with conditions such as flashover and rollover. Training programs in fire science/fire behavior should be a part of regular departmental training.

Departments should implement a policy regarding, in detail, how to deal with these occurrences using proper fire streams based on what interior crews observe. Penciling techniques should only be used to delay flashover for emergency evacuation of firefighters and not as a primary fire stream for fire attack or to permit advancement into the area of the seat of the fire.

Essentials of Fire Fighting 4th Edition, IFSTA
Structural Firefighting Strategy and Tactics, NFPA

APPENDIX

TIME LINE

*Noted times are compiled from the radio logs and photographs and may be +/- 1 minute. *

01:36:05	First 911 call received by Smith County Operators
01:37:41	Notification of Flint-Gresham Fire Department by Dispatch
01:48:00	Flint-Gresham E-1 responding, Dispatch advises structure is fully involved, mutual aid is requested from Bullard and Noonday Fire Departments
01:49:11	Notification of Bullard and Noonday Fire Departments by Dispatch
01:50:21	Flint-Gresham Engine 1 on location –Flint-Gresham 16 is Command
01:51	East Texas Medical Center EMS unit reports enroute
01:51:51	Command calls All Clear
01:54:50	Command Checks Status of Interior Crew - **No response**
01:58:07	Command calls to charge second line
01:59:28	Bullard Engine 8 and Tanker 1 respond
01:59:53	Command requests EMS and dispatch advises they are en route
02:00:03	Flint-Gresham Tanker 7 responds
02:01:18	Noonday Engine 1 and 2 respond
02:02:40	Bullard Engine 8 and Tanker 1 on location
02:08:44	Command calls interior on radio - **No response**
02:09:27	Noonday Engine 1 and 2 on location
02:10	Firefighter Barnard and Firefighter Rawlings exit the structure
02:13:39	Command asks for a RIT team
02:15	Captain Williams and Firefighter Cheek enter structure as Attack 2.
02:15:51	"C" Command asks if roof was vented
02:16:15	Captain Williams calls Command and asks if the power is off in the house – Command asks them to repeat - **No Response**
02:16:36	Command calls Interior Command and requests status check - **No response**
02:17	Window on side D broken by Asst. Chief Timmons (Noonday)
02:18	Super heated smoke and steam seen exiting under pressure approximately 15 feet from front door. PPV fan is ineffective, smoke color light gray – Safety line is no longer staffed
02:18:18	Command calls Interior Command and requests status check - **No response**
02:19	Bullard and Noonday crews ladder the building and begin vertical ventilation operations
02:21	First chain saw fails to cut roof and a second is requested
02:22	Second chain saw arrives – vertical ventilation continues
02:23	Smoke conditions change drastically, smoke now thick and black with sharp edges, PPV fan obscured
02:26	East Texas Medical Center EMS unit reports on scene
02:27	Captain Williams' known normal consumption time ends (12 minutes)
02:28:53	Command calls Interior Command - **No response**
02:30	Vertical Ventilation complete – Chief Aarant inquires about interior crews
02:31	Flames are seeing exiting the front door
02:31:49	Command asks "where is my RIT team, I need a RIT team"
02:33:35	Command stops all operations and announces two firefighters down inside

02:33	Evacuation signal transmitted via 3 air horn blasts Flint Engine 1
02:33	RIT 2 enters the building
02:34	Chief Newburn and Firefighter Stephens use the safety line to knock down fire exiting front door
02:36:46	Command ceases all operations to check on interior crews
02:37:48	Command calls Dispatch and asks for EMS to make the scene and request an additional ambulance
02:38:25	Command announces that no one goes inside without checking in with command
02:38:57	Command tries to establish accountability stating "I need everyone inside accounted for"
02:40:56	Command requests County Fire Marshal
02:43:00	Command calls for a RIT team
02:44:09	Command calls "I need a RIT team, NOW"
02:45	RIC 4 enters
02:48:01	Command requests status of second EMS unit
02:53:31	Second EMS unit on location
02:56:55	Command asks if everyone is out of the building – **no response**
02:58:12	Whitehouse and Tyler requested for mutual aid
02:58:52	Command calls all firefighters out of building, going defensive

DOCUMENT LOG

Document Number	Source	Description
07-01-D-01	Smith Co. Sheriff (SCSO)	Fire Alarm Report
07-01-D-02	SCSO	Radio Log Report
07-01-D-03	SCSO	911/Radio Report
07-01-D-04	SCSO	Pager Report
07-01-D-05	Tyler FD	Tyler Fire Incident Report
07-01-D-06	SCSO	Smith County 911 transcript
07-01-D-07	SCSO	Smith County Radio Channel 1-A transcript
07-01-D-08	SCSO	Smith County Radio Channel 1-E transcript
07-01-D-09	SCSO	Smith County Radio Channel 1-G transcript
07-01-D-10	ME	Autopsy Report for Kevin Williams
07-01-D-11	ME	Autopsy Report for Austin Cheek
07-01-D-12	FGVFD	Statement of Asst. Chief Patrick Baldauf Flint-Gresham E-1
07-01-D-13	FGVFD	Statement of Cory Thatcher FGFD Driver E-1
07-01-D-14	FGVFD	Statement of Joshua Rawlings FGFD Firefighter E-1
07-01-D-15	FGVFD	Statement 1 of Ben Barnard FGFD Firefighter E-1
07-01-D-16	FGVFD	Statement 2 of Ben Barnard FGFD Firefighter E-1
07-01-D-17	FGVFD	Statement 1 of Victor Robles FGFD Firefighter E-1
07-01-D-18	FGVFD	Statement 2 of Victor Robles FGFD Firefighter E-1
07-01-D-19	Bullard FD	Statement of Chief Keith Newburn E-8
07-01-D-20	BFD	Statement of David Stephens BFD Firefighter E-8
07-01-D-21	BFD	Statement of Justin Walker BFD Driver/Firefighter Tanker 1
07-01-D-22	Noonday FD	Statement of Chief Aarant Noonday Chief/Driver E-1
07-01-D-23	NFD	Statement of James Timmons Firefighter POV
07-01-D-24	NFD	Statement of James Broome Firefighter E-1
07-01-D-25	NFD	Statement of Travis Barnett Firefighter E-1
07-01-D-26	NFD	Statement of Raylene Yates Driver/Firefighter E-2
07-01-D-27	NFD	Statement of Robert Koss Firefighter E-2
07-01-D-28	Internet	Weather Information
07-01-D-29	Bullard FD	SOP for Accountability, Smith County Firemen’s Association
07-01-D-30	FGVD	Flint Gresham Fire Department Handbook
07-01-D-31	Bullard FD	Bullard FD Tactical and Operational Guidelines
07-01-D-32	Bullard FD	Smith County Firemen’s Association Radio Policy
07-01-D-33	NFD	Noonday FD SOP for Protective Clothing
07-01-D-34	TCFP	Kevin Williams PPE Inspection Form
07-01-D-35	TCFP	Austin Cheek PPE Inspection Form
07-01-D-36	TCFP	SCBA Flow Tests for Williams and Cheek 7/2006
07-01-D-37	TCFP	SCBA Breathing Air Compressor Test results
07-01-D-38	SFM	State Fire Marshal Origin and Cause Report