



FIREFIGHTER FATALITY INVESTIGATION

**Firefighter Daniel Groover
Houston Fire Department**

Investigation FFF FY 14-04
Houston, Texas • July 9, 2014



TEXAS DEPARTMENT OF INSURANCE

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The subsequent investigation of this incident provides valuable information to the fire service by examining the lessons learned, to prevent future loss of life and property.

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Acknowledgements

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City of Houston Fire Department
Texas Commission on Fire Protection
El Paso Fire Department
National Institute for Occupational Safety and Health

The following El Paso Fire Department members conducted the review of the operations and tactics and provided guidance in the recommendations. We commend these individuals for their commitment to the review of this incident, in the pursuit of firefighter safety for the Texas Fire Service:

Assistant Chief Samuel Rodriquez
Fire Marshal Orlando Arriola

Executive Summary

On July 9, 2014, at 3:52 p.m., the Houston Fire Department received a report of a residential fire at 1510 Mistletoe Lane, Kingwood, Texas. Engine 104 was first on scene, staffed with:

- An officer (E104A).
- Two firefighters, E104B and Daniel Groover (E104C).
- A driver, Engineer Operator (E104D).

When Engine 104 arrived on the scene there was fire on the Delta (west) side of the two-story residence. The fire was engulfing an attached storage shed used to store ammunition and ammunition reload equipment. Ammunition in the shed was exploding from the fire.

Firefighter Groover (E104C), Firefighter E104B, and the Engineer Operator stretched a 150-foot, 1^{3/4}" attack line to the Delta side to attack the storage shed fire while E104A conducted an assessment along Alpha to the Alpha/Bravo corner and returned to the crew. The fire had extended into the first floor attic space and was moving through the attic. E104A took Firefighter Groover and went to a door at the garage to search for fire extension. They forced an entry door to the garage and did not see fire or smoke. They went to the main entry door of the residence and forced open the door. Firefighter E104B brought the hose line from the shed to the front door as E104A searched the first floor for fire extension. There was no fire and little smoke on the first floor, and they prepared to search the second floor. The three-person crew went up the stairs to the second floor to search for and halt the fire extension.

The attack line did not reach the second floor, but E104A and Firefighter Groover continued the search on the second floor as Firefighter E104B tried to get additional slack in the hose line. Firefighter Groover became separated from E104A when smoke and heat filled the second floor. Smoke and heat extended into the second floor from the attic, and E104A ordered the crew to exit. When outside it was discovered that Firefighter Groover was unaccounted for and the electronic accountability system indicated Firefighter Groover's TPASS was in alarm. Continued attempts to contact Firefighter Groover were unsuccessful, and a Rapid Intervention Team was deployed.

Firefighter Groover was located inside a second floor room at the French doors leading onto the balcony at the back of the house. Firefighter Groover was removed, and resuscitation efforts began immediately. Firefighter Groover was transported to the Kingwood Medical Center as resuscitation efforts continued.

Firefighter Daniel Groover succumbed to the injuries he received while fighting the house fire. An autopsy conducted by the Harris County Forensics Institute revealed that Firefighter Daniel Groover died from smoke inhalation.

This report details findings that contributed to the death of Firefighter Groover. The recommendations listed after each finding cite national fire service best practice references that are proven to reduce risk exposure to firefighters.

While eliminating all risks in this dangerous profession will never be achieved, all firefighters have a duty to minimize risks whenever possible, especially where preventable errors occur.

This report is intended to honor the sacrifice made by Firefighter Groover, by helping to prevent future firefighter injuries and deaths.

Firefighter Groover had 21 years with the Houston FD and held two active certifications through the Texas Commission on Fire Protection: Firefighter Basic and Driver/Operator-Pumper. He began his career with the Houston Fire Department in 1993. His first assignment was at Station 18 as a paramedic. Firefighter Groover was assigned as a paramedic on medic units throughout his career at seven stations, until he moved to an engine company in January 2012. Firefighter Groover moved to Station 104 in June 2012.



Firefighter Daniel Groover, 46
A 21-year veteran of the Houston Fire Department

Introduction

On Wednesday, July 9, 2014, the Texas State Fire Marshal's Office (SFMO) received information regarding the death of a Houston Fire Department firefighter while fighting a house fire in Kingwood, Texas.

The State Fire Marshal's Office began an investigation of the firefighter fatality under the authority of Texas Government Code Section 417.0075.

- (a) *In this section, the term "firefighter" includes an individual who performs fire suppression duties for a governmental entity or volunteer fire department.*
- (b) *If a firefighter dies in the line of duty or if the firefighter's death occurs in connection with an on-duty incident in this state, the state fire marshal shall investigate the circumstances surrounding the death of the firefighter, including any factors that may have contributed to the death of the firefighter.*
- (c) *In conducting an investigation under this section, the state fire marshal has the same powers as those granted to the state fire marshal under Section 417.007. The state fire marshal will coordinate the investigative efforts of local government officials and may enlist established fire service organizations and private entities to assist in the investigation.*
- (d) *The state fire marshal will release a report concerning an investigation conducted under this section on completion of the investigation.*
- (e) *Not later than October 31 of each year, the state fire marshal will deliver to the commissioner a detailed report about the findings of each investigation conducted under this section in the preceding year.*
- (f) *Information gathered in an investigation conducted under this section is subject to Section 552.108.*
- (g) *The authority granted to the state fire marshal under this section will not limit in any way the authority of the county or municipal fire marshal to conduct the county or municipal fire marshal's own investigation into the death of a firefighter within the county or municipal fire marshal's jurisdiction.*

The investigation began on July 9, 2014, with a response to the scene to conduct the initial assessment and survey of the involved property. This provided information to assist in determining the resources needed to conduct the investigation. SFMO staff arriving at the

scene sent updates to the responding investigation team members, and an action plan of assignments and objectives for the investigation was established.

The Texas State Fire Marshal's Office and the Houston Fire Department combined efforts to investigate the origin and cause of the fire. Assignments included examination of the fire scene to determine the origin and cause of the fire; examination of the building construction and any associated system; gathering of historical information and known conditions of the residence; examination of personal protective equipment; and a review and examination of the fire ground operations and tactics employed.

Although a cooperative effort, the State Fire Marshal's Office and the Houston Fire Department conducted separate investigations of the incident to determine contributing factors leading to the death of Firefighter Groover.

The Texas State Fire Marshal has agreements with the major metropolitan fire departments in Texas; these departments may be called upon to assist in the evaluation of the fire ground operations and tactics and in developing recommendations. The El Paso Fire Department was requested to assist in the investigation. El Paso FD assigned Assistant Chief Samuel Rodriguez and Fire Marshal Orlando Arriola to assist and respond to the scene on July 14, 2014. Chief Samuel Rodriguez is the Assistant Chief of Operations for El Paso and has 29 years of experience with 10 years as a line company officer and 10 years as a line command officer. Chief Rodriguez was sent to assist due to his knowledge of fire ground operations and Incident Command. Chief Orlando Arriola is the Fire Marshal for the City of El Paso and has 27 years of experience with eight years in fire investigations. Chief Arriola was sent for his investigative experience as well as line officer experience. Chief Rodriguez was assigned as the group supervisor for the fire ground operations and tactics review.

The Texas Commission on Fire Protection (TCFP) regulates personal protective equipment (PPE) in the state. Compliance Officer Ernie Null assisted in the evaluation of the PPE.

The National Institute for Occupational Safety and Health Fire Fighter Fatality Investigation and Prevention Program was notified and sent a team to the scene to conduct an independent investigation.

Building Structure and Systems

The fire incident was located within the jurisdictional boundaries of the City of Houston, in Kingwood, Harris County, Texas.



Google Earth image from March 2011.



Google Earth image from roadway at approximate location of E104.

The structure was a 4,608 square feet, single family residence located at 1510 Mistletoe Lane, Kingwood, Texas. It was built in 1963 and was a two-story, wood frame construction on a concrete slab foundation with a combination brick veneer and Hardiplank exterior siding under with a composition roof. It was 99 feet wide along the front, 73 feet along the west side, and 33 feet along the east side. It had two bedrooms and two bathrooms downstairs and three bedrooms and one bathroom upstairs. One downstairs bedroom was used as a work/hobby room, and one upstairs bedroom was used as a sewing room. An attached storage shed on the west side was used as a work room for ammunition reloading and cartridge cleaning. The shed attached in a way that allowed smoke and heat to enter the attic through the eaves and extend to the attic above the master bedroom closet and master bedroom.

The attic space above the master bedroom was open to the garage attic space. The garage attic space connected to an 11 foot by 15 foot unfinished void space of the second floor. The unfinished void space shared a wall with a second floor bedroom and was open to the attic space above the second floor living area. E104 did not know there was a large void space behind the wall in the bedroom, allowing the fire to extend to the second floor attic space.



Area of void space. The garage attic opened into the void space at the garage roof peak.



Area of the void space for fire travel.

The residence was equipped with a monitored burglar and fire alarm system; however, the transmission of alarms to the monitoring company was experiencing technical problems due to a change in the area equipment transceivers. The control panel was too badly damaged to obtain any further information regarding incident times.



The remains of the alarm system attached to an interior wall.

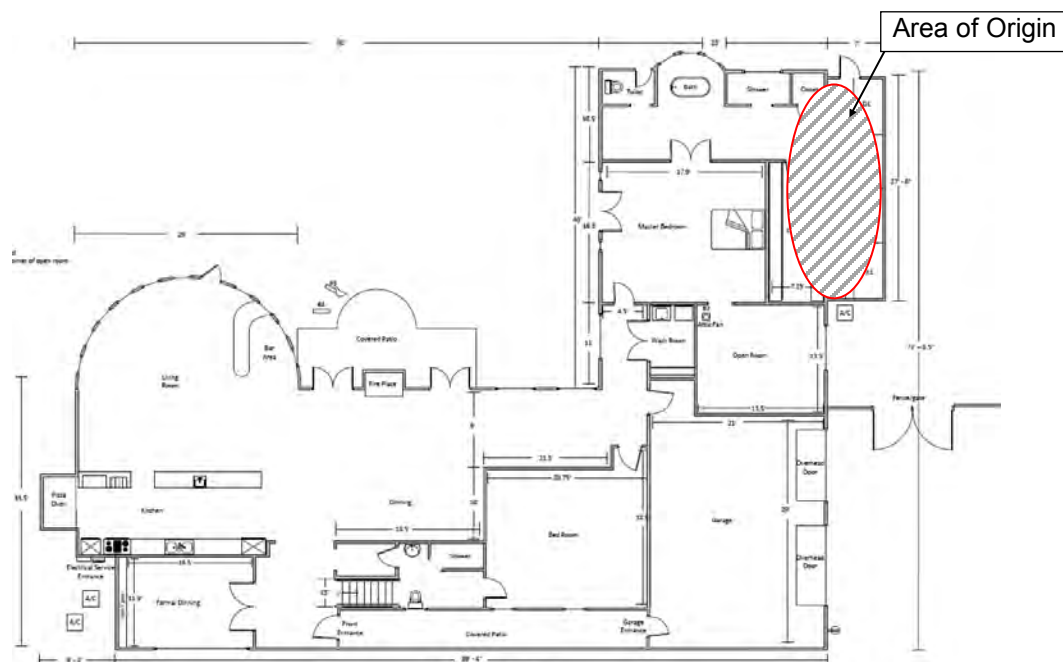
Fire Investigation

The fire scene examination to determine the origin and cause of the fire was conducted by the Houston Fire Department and Texas State Fire Marshal's Office over a three day period.

Based upon the information available and after conducting a systematic fire scene examination, inspecting the physical evidence, viewing fire scene video, viewing photographs, conducting arc mapping, considering firefighter statements, considering witness observations, conducting extensive testing, and employing the scientific method by means of formulating and discarding hypotheses, the area of origin of the fire was determined to be in the shed.

The fire developed in this area, causing the heating of an unknown item, likely a propane bottle, resulting in an explosion. The explosion damaged the west wall of the shed, providing additional ventilation. The fire then developed, further igniting available combustible materials, and spread through the eaves of the residence into the attic. The fire then spread through the attic in a north and east direction.

The cause of the fire is undetermined.





Residential security camera views from the residence across the street showing the explosion. Times shown are one hour behind. Approximate times are 15:51:22—15:51:26.





Fire Ground Operations and Tactics

The following sequence of events was developed from known times of events based on radio transmissions timestamps, the Grace¹ Accountability System timestamps, and firefighter witness statements as provided by the HFD. Those events with known times are identified.

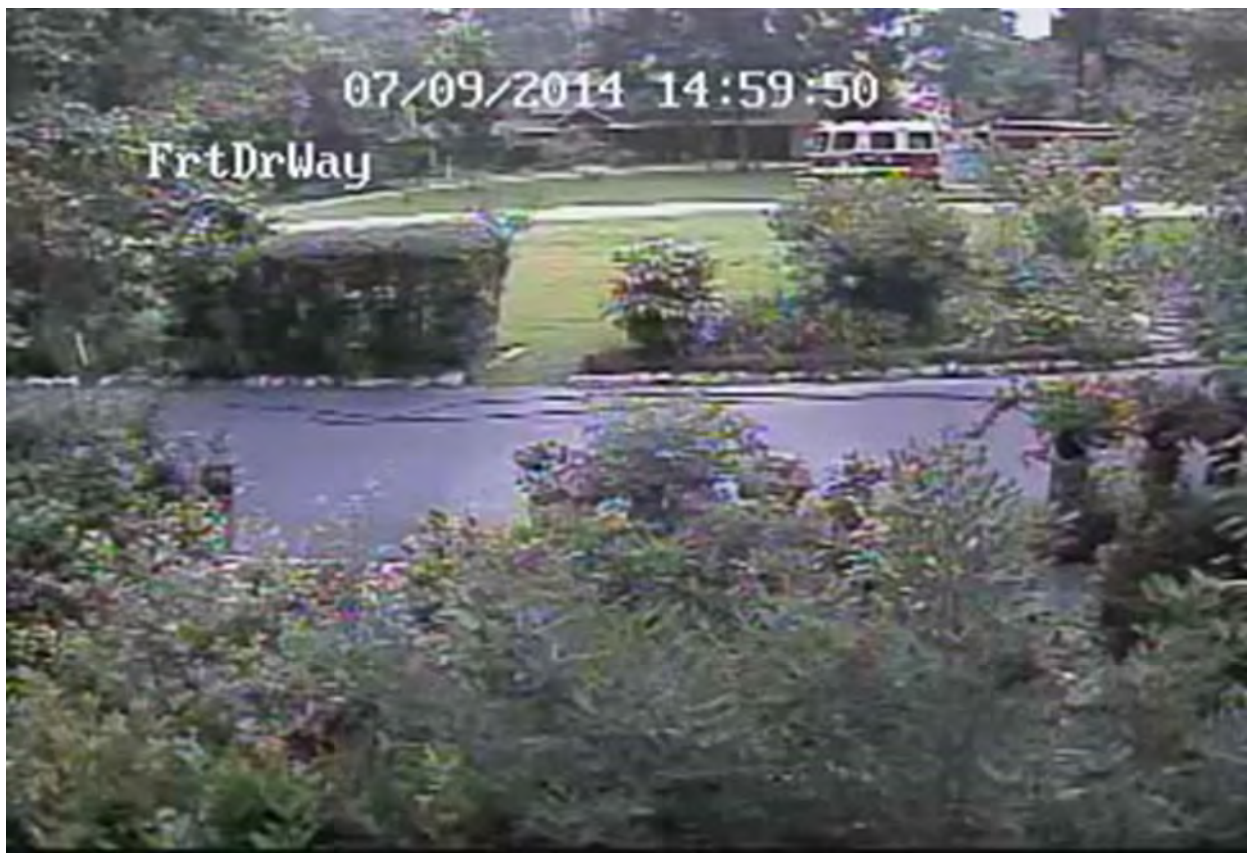
Weather at incident time was scattered clouds, 93°F, and the heat index at 96.4°F, with south-southeast winds at 10-15 mph.²

- 15:52:44** The Houston 911 Call Center received a call reporting a house fire. Over the following five minutes, nine more calls reported the fire and also explosions. Several calls made to the call center recorded the sound of popping and exploding ammunition.
- 15:55:23** Engine 104 was dispatched on a single unit response to 1510 Mistletoe. Engine 104 consisted of a Captain (E104A), an Engineer Operator (E104D), Firefighter (E104B) and Firefighter Daniel Groover (E104C).
- 15:59:05** The single unit response was upgraded by Dispatch due to multiple calls. District Chief 102, District Chief 64, Engine 102, Engine 103, Ladder 102, Ladder 64, Ambulance 56 and Squad 34 were dispatched to the house fire.
- 15:59:46** E104A reported on scene: *We've got fire coming from a one-story.*
- 15:59:46** **E104C** PASS Device Turned On (obtained from PASS data download).

When E104 arrived on the scene, they saw fire on the Delta side of the two-story residence and heard ammunition exploding. Firefighter E104B, Firefighter Groover (E104C), and Engineer Operator (E104D) pulled a 150 foot, 1^{3/4}" cross-lay from the engine to the front corner of the house and E104B and E104C continued to the gate on the Delta side to begin a fire attack.

¹'Grace' is the electronic accountability system used by the Houston Fire Department.

²Weather Underground, Weather history for KIAH – Houston Intercontinental, TX. *Wunderground.com*



Screen shot from security camera video located at residence across the street shows arrival of E104. Time shown is one hour behind. Approximate time 15:59:50.

E104A walked the Alpha side to the Bravo corner and got a visual on the Bravo side from the fence and did not see any fire or smoke. He did not complete the 360° assessment but believed all the fire was on the Delta side.

16:01:14 District 102 requested a TAC channel (radio channel) and NE TAC 4 was assigned.

16:03:42 *Engine 104 - I need a four inch.*

16:03:52 *District 102 - Received you need a four inch.*

E104A returned to the crew and left Firefighter E104B on the attack line to continue the fire attack on the shed. E104A and Firefighter Groover moved to a door at the west end of

the front porch to enter the corner of the garage on the Alpha side. This door could have allowed access to the garage area directly under the void space where the captain believed the fire was burning. Firefighter Groover attempted to force entry through the door using a sledge hammer.



E104 Location.

While working on the door, Firefighter Groover was wearing a self-contained breathing apparatus which was on standby mode with the regulator hanging by the hose. As Firefighter Groover worked to force entry, his SCBA donning switch contacted something and activated, causing a loss of air each time. This occurred twice and Firefighter Groover and E104A spent a few seconds each time trying to gain control of the regulator and press the donning button to stop the free flow of air. An unknown amount of air was released from Firefighter Groover's tank during these two occurrences. It is unknown if Firefighter Groover closed the cylinder valve to limit any loss of air.

E104A also used the sledge hammer while forcing entry. Once the door was forced, it was determined that something was blocking it from opening more than a foot. They could see

there was no fire in the garage. Attempts to enter the garage from that corner door were unsuccessful, and E104A decided to move to the front entry door of the home.

The front door of the home was at the east end of the porch on the Alpha side. Forcible entry was successful at this location, and E104A directed Firefighter Groover to wait at the door. E104A walked to the Delta side and observed that E104B had knocked down a large amount of the exterior shed fire. E104A observed signs that the fire had entered the attic spaces of the home. He saw smoke coming from the roof eaves of the second floor and the ridge vents on the top of the garage roof.

16:07:11 *District 102 on location. I've got heavy smoke coming from a two story residence. Engine 104 is making an offensive attack and establishing a water supply at this time. I'll be Mistletoe Command.*

District Chief 102 arrived on the scene and assumed command. He set up the Command Post and observed the E104 crew moving to the Alpha side front door. The radio traffic and time stamps indicate D102 was on the scene approximately 39 seconds before E104 crew entered the home. D102B Incident Command Technician assisted in dragging a 4 inch from Engine 104 to the hydrant and connected to the hydrant while E104D returned to the engine.

16:08:31 *Engine 104 (inaudible) - We're going to check for extension.*

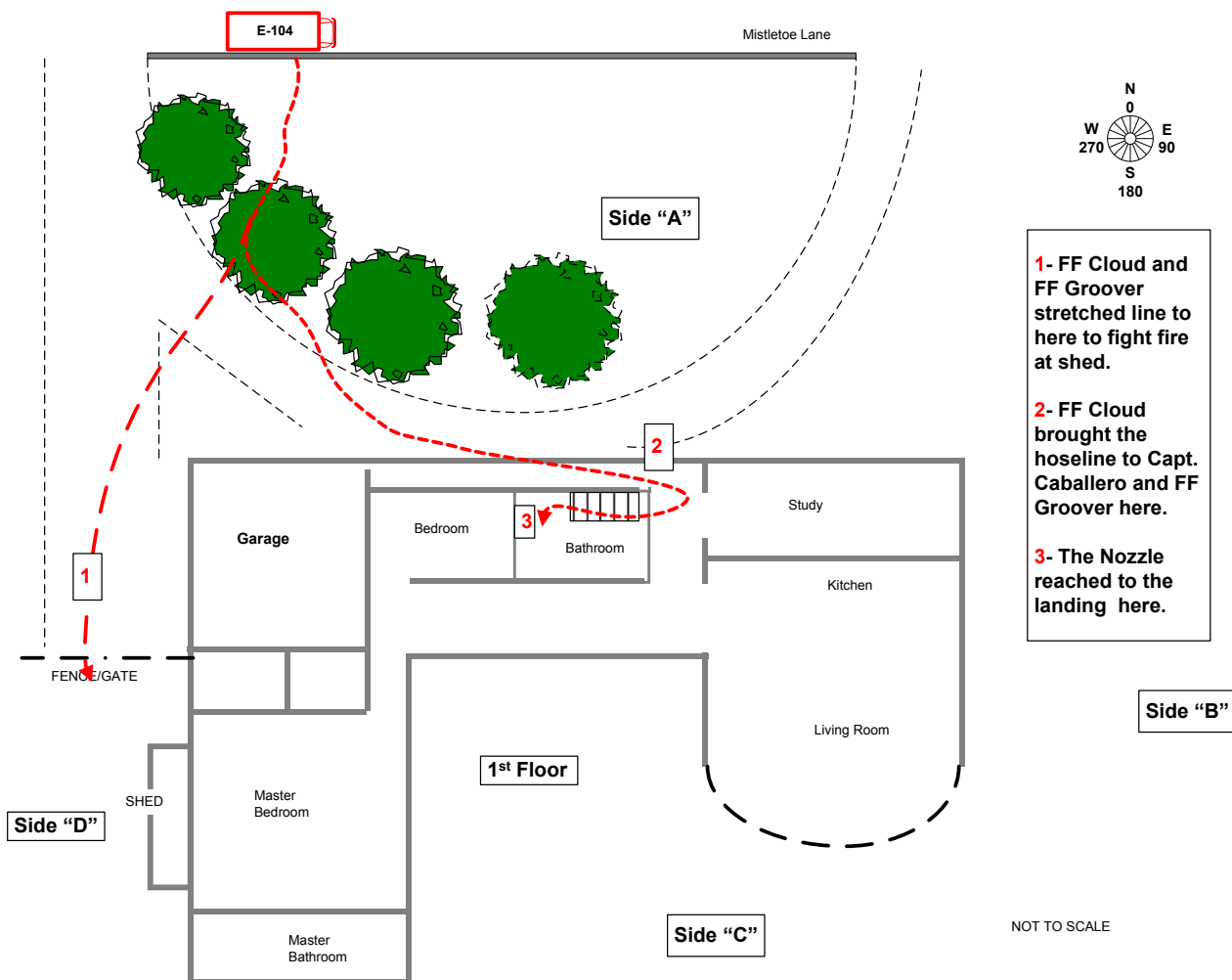
16:09:02 *Engine 104A to B – Bring the inch and three quarter to the front door.*

E104A ordered the first attack line to be relocated from the fire attack on the Delta side to the front door. E104B stated that knock down was achieved on the Delta side but the fire was in the eaves now. E104B stretched the attack line to the front door. The home had four to five trees in the front yard. The first attack line was stretched between the trees to attack the shed fire. The attack line was stretched directly to the front door and not pulled back to the attack pumper and then stretched to the door.

While E104B stretched the first attack line to the front door, E104A and Firefighter Groover went on air and entered the home. They searched the first floor and visibility was

clear. Electrical power was on, as a television and some lights remained on in the living room area. They made their way to the west (Delta) end of the home at the door to the garage. There was no smoke in the garage, and E104A opened the overhead garage doors by pressing the garage door opener buttons. They did not observe any fire on the first floor.

Both returned to the front door and met up with E104B, who had the attack line. They saw smoke coming down the stairs. They advanced the line to the stairs, which were just inside the front door to the right. They advanced the hose line up the stairs and entered the hall on the second floor. The nozzle reached the landing a few steps below the second floor but there was no working slack (statement of E104B). While advancing the hose, E104A was in front followed by Firefighter Groover, then E104B.



16:09:39 *Ladder 102 – We're on location.*

16:09:45 *DC102 – Is that Ladder 102 on location? If you're here, go ahead and ventilate the roof at this time.*

16:09:51 *Ladder 102 received – ventilate the roof.*

16:10:21 *Engine 102 is on location.*

16:10:27 *DC102 – E102 pull a second line. Assist 104.*

16:10:45 *Engine 103 is on location.*

16:10:51 *DC102 – E103 you'll be the RIT team, Send your chauffeur to Command.*

16:11:01 *E103 received. Be the RIT team.*

Engine 102 was assigned to back up Engine 104 and pulled a second cross lay from Engine 104 and headed to the main entry door to follow Engine 104 inside.

16:12:01 *Ambulance 56 on location.*

16:12:15 *Squad 34 on location.*

16:12:23 *Ladder 101 on location.*

Engine 63 arrived right behind Ladder 101. L101 and E63 parked west of the residence behind DC102. Ladder 101 and Engine 63 were ordered to District 64 Alpha Division. Ladder 101 was assigned to pull a line from Engine 104 and enter Delta through the garage. Engine 63 was assigned to pull ceiling in the garage.

16:12:44 *Command to Engine 104 – I have a second engine company with a second line coming in to assist you. You need any other units in there?*

16:12:53 *E104A – We’re trying to get through the ceiling now.*

16:13:07 *Command received.*

E104A called for a pike pole, and E104B went back down the stairs and asked the E/O to bring one. While E104B was getting the pike pole, E104A looked inside three rooms; these rooms had low visibility, but no fire was observed. E104B got the pike pole and went back upstairs and handed the pike pole to E104A. From his location at the top of the stairs, E104B could not see who was working on the second floor but could hear E104A working, using the pike pole. Firefighter Groover’s location was unknown. E104A poked the ceiling and gained access to the attic via access panel. He did not see any fire at this time but it was hot. E104A attempted to radio for an attic ladder but was “bonked” several times. E104A did not know there was not any slack left in the hose.

Ladder 102A performed a quick assessment to the Delta side and returned to the Alpha and then to the Bravo side. L102A saw dark smoke coming out from all the eaves. The Ladder 102 crew went to the first floor roof at the Alpha side near the A/B corner and then climbed onto the second story roof where they began ventilation operations on the Charlie side of the peak around a roof vent. The smoke was heavy coming from the roof vent and the saw they were using stalled. After getting another saw from the L102 E/O they continued to make a four-foot by four-foot hole. Command assigned L102D to shut off the utilities; he found breaker panels near the A/B corner and switched the main breakers to the OFF position.

16:13:23 *E104A – Be advised the power is still on.*

16:13:42 *D102 to L102D – Get the utilities for me. Start with the power.*

16:13:48 *D102 to OEC – I have a 4 inch water supply established and Grace in place.*

16:14:05 *OEC – Received. Water supply established and Grace in place. 16:14.*

16:14:55 **Grace Electronic Accountability is turned on.**

- 16:14:55** E104A is logged into Grace.
- 16:14:58** E104B is logged into Grace.
- 16:15:01** *?103? - The main power is shut off in the garage.*
- 16:15:16** **E104C is logged into Grace.**
- 16:15:42** *District 64 (Alpha Division) – Command – We can take a third line off of Engine 104 – inaudible – the companies inside going to need to bring their own line with them.*
- 16:15:54** *Command received. Command to Ladder 101 – Bring an inch and a three-quarter with you and let's get into this garage over here. We're going to work off Engine 104.*
- 16:16:13** *Engine 63 on location.*
- 16:16:17** *E63 report to Alpha D64.*
- 16:17:08** *Ladder 102D to District 102 – You've got fire broke through the roof on the Bravo side.*
- 16:17:22** *Command received.*
- 16:17:28** *Command to Engine 104 – Can you give me a report?*
- 16:18:47** E104A transmits but is inaudible.
- 16:19:03** Command asks E104A to repeat, and E104A asks what the conditions look like on the second floor.
- 16:19:15** Command tells E104A, *It's looking better. You still have something burning up there. The smoke is still brown. It's not turning.*

E104B told E104A that it was very hot and without more hose they were not going to be able to do anything. E104A remembered hearing this and also that someone was low on air.

E104A told E104B to go downstairs and that he would follow.

E104B went down the stairs. E104A believed that both of his crew members were on the stairway and went down. Conditions on the second floor were at zero visibility and very hot. E104A left the second floor and as he was going down, E102 crew were making their way up the stairs. E102 turned around to go back down to allow E104 to come down. E104A gave a briefing to the crew of E102 at the bottom of the stairs.

E102 entered the front door and found heavy smoke in the house. They followed E104's hose line up the stairway and encountered E104 coming downstairs. E102A ordered the crew to go back downstairs to allow E104 to exit. E102A believed the E104 Captain told them that the fire was up the stairs in the first room on the left. E102 left their hose line at the bottom of the stairs and followed E104's hose line. The nozzle was found about halfway up the stairs and E102A ordered the crew to get slack. The hose line could not be advanced farther and E102 returned to the first floor to get their hose line and advanced up the stairs. About halfway up, E102C stated that he was low on air and the crew went back downstairs and exited.

E104A believed both of his firefighters were outside. E104B was outside, had removed his mask and hood, and was looking back at the front door for the Captain and Firefighter Groover to exit. E104B asked another firefighter if the Captain had come out and the answer was no. E104B put his gear back on to re-enter the home and met E104A at the front door. E104B asked E104A for the whereabouts of Firefighter Groover. That was when E104A realized only one of his crew had left the house.

16:19:20 Dispatch records that E104C turned his radio ON.

E104C radio was found to be on the wrong channel. The radio remained on the Dispatch Channel and not switched to TAC 4.

16:21:16 *E104A calling E104B.*

16:21:37 *E104A calling Engine 4 – Engine 104B.*

E104B was outside standing near E104A and told him in a face to face conversation that he was E104B. E104A intended to call E104C to determine his location. No radio response was recorded.

16:22:03 *Ladder 102 – The roof is vented.*



Ladder 102 is on the roof for ventilation. Screenshot of video provided by Houston FD. The double doors below them open into the room where Firefighter Groover was located.

16:22:15 *D64 (Alpha Division) to E102 – You have no more slack in the line.*

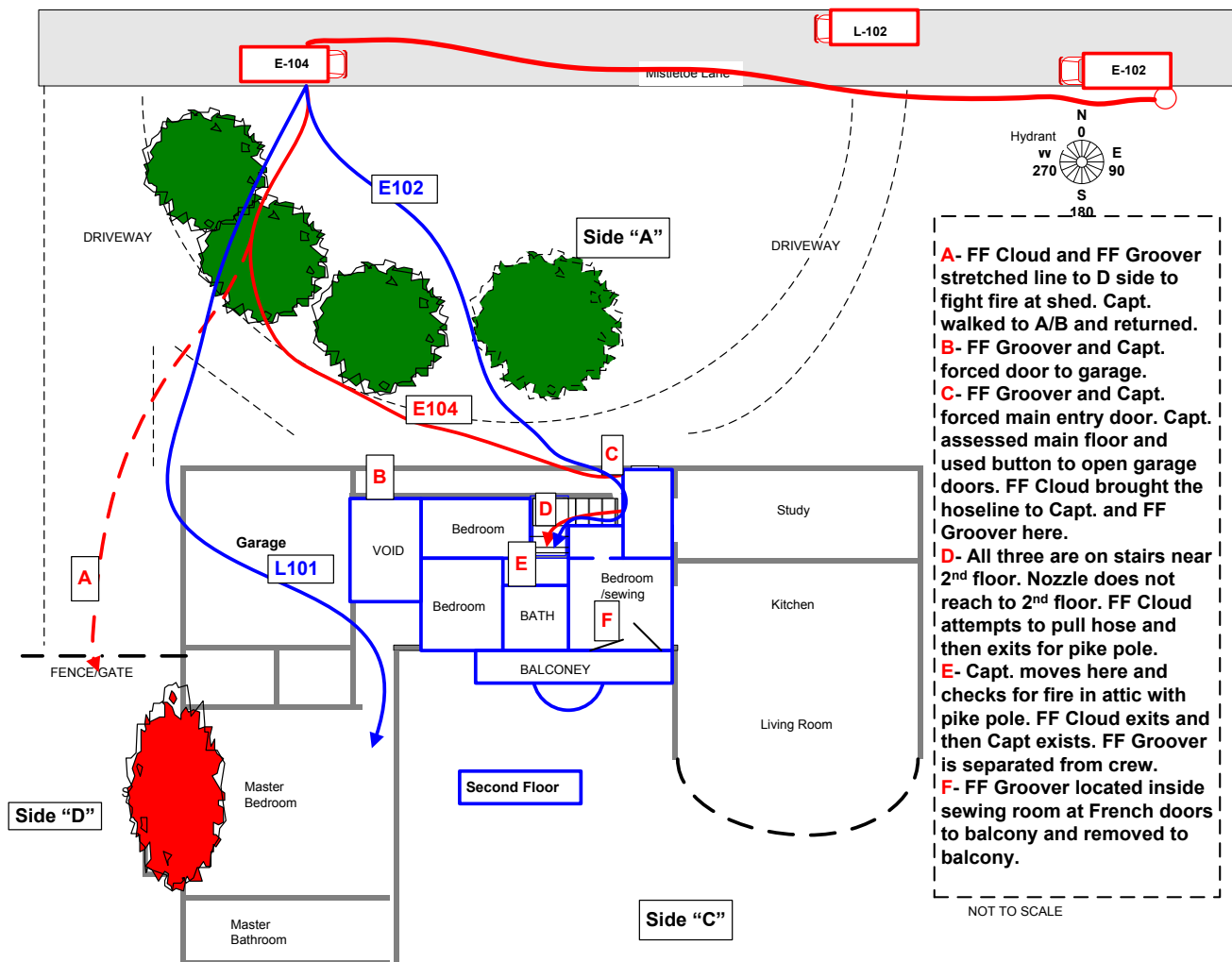
16:22:41 **PASS goes into Pre-Alarm Alert** (obtained from Data logger download).

16:22:50 *Engine 104 to Command – We’re coming out for a bottle change.*

16:22:52 **PASS ALARM AUTO ACTIVATION** (obtained from Data logger download).

16:22:55 **Grace records E104C in motion alarm.**

16:23:10 *Engine 104 to Command – Is 104C in alarm?*



- 16:23:24** Ladder 101 Command – We’re sending one guy out with a burn, two of us going back in with a line.
- 16:23:43** Grace E104C Alarm cleared by Accountability.
- 16:23:44** Command – Squad 34 check that firefighter.
- 16:23:47** Grace records E104C in motion alarm.
- 16:23:50** Grace E104C Alarm cleared by Accountability.

16:23:52 *Accountability (E103D) to Firefighter 104C – are you okay?*

No Response.

16:24:10 **Grace records E104C in motion alarm.**

16:24:17 *D64 calling E104C.*

No Response.

16:24:27 *Accountability calling firefighter 104C – are you okay?*

No Response.

16:24:37 *Command to Engine 104.*

No Response.

16:24:52 *Accountability to 104A.*

16:24:52 *104A Go Ahead.*

16:24:55 *Do you have contact with firefighter C? 104C has alarmed.*

16:25:01 *Engine 104 – No, not at this time.*

While working on the second floor with E104A, Firefighter Groover was separated from his officer. Firefighter Groover went through a louvered door into the room to the left of the stairs as the Captain worked on the ceiling or when he ordered them to exit second floor. The door was examined later, and it was learned that the door closed automatically.

E104A went back upstairs to search for Firefighter Groover. He passed the crew of E102 coming down to change air bottles because E102C was having trouble with his air indicator lights in the heads-up display and believed he was running out of air. None of the E102 crew members heard a TPASS going off. Because no Mayday had been declared as they exited, they followed procedures and exited as a crew to the outside for a bottle exchange.

- 16:25:09** *Accountability to Engine 104C. You're in alarm – Are you okay?*
No Response.
- 16:25:29** **Grace E104C Alarm cleared by Accountability.**
- 16:25:29** **Grace records E104C in motion alarm.**
- 16:25:31** *District 64 calling Command – Be advised we are implementing RIT (Rapid Intervention Team) to search for firefighter C off Engine 104.*
- 16:25:51** **Grace E104C Alarm cleared by Accountability.**
- 16:25:52** **Grace records E104C in motion alarm.**
- 16:25:54** *Command – Received, Activate the RIT.*

District 102 – OEC Give me a 2-11.

At the top of the stairs E104A heard a faint pass alarm in full alert mode. E104A opened the door to the bedroom on the left of the stairs and announced over the radio he was hearing a PASS.

- 16:26:37** *Engine 104A to Command – I hear a TPASS going off on the second floor, I hear a TPASS going off on the second floor.*
- 16:26:47** *Received. Command to Alpha – Send the team to the second floor we have a TPASS going off.*

Alpha division acknowledged this and then announced:

- 16:26:54** *Alpha received. The RIT (E103) is deploying right now and en route to the second floor.*

The RIT was deployed to search for a missing firefighter, but no Mayday was declared and fire ground radio traffic continued.

Engine 63 was assigned to the Delta side entering through the garage, pulling ceiling along the way to the hallway leading to the master bedroom. Engine 63 continued ventilation and search operations until they exited on the Delta side. Engine 63 captain heard that a firefighter was missing when the RIT was deployed and that the firefighter was in the room to the left of the stairs. E63A and E63C climbed a ladder to the balcony. E63A continued onto the adjoining first floor roof and broke the Bravo side windows to ventilate the sewing room. He could hear a TPASS and he saw lights from the RIT flashlights in the room and returned to the balcony.

Meanwhile, E63C went to the balcony doors of the sewing room and used an axe to pop out a pane of glass. E63C reached in and unlocked the door and began forcing the door to open. E63C heard a TPASS sounding, forced the door open, grabbed the firefighter's SCBA harness straps, and pulled him onto the balcony.

16:30:22 *E63D – Delta – We have a firefighter recovered, he's on the balcony, C side, second floor.*

Upon rescue, Firefighter Groover was wearing the SCBA but the face piece was dislodged from the normal position and not covering his mouth and nose. The face piece was somehow pushed up during the interior operations, and Firefighter Groover inhaled smoke. The firefighters who attended to him said there was smoke and soot in his mouth and nose. Firefighters began efforts to move him down a ladder to the backyard. Resuscitation efforts resumed on the ground. Firefighter Groover was placed on a stretcher and taken to Ambulance 56.

16:35:57 Defensive operations were announced.

16:40:00 E104C PASS Ready (obtained from Data logger download). The PASS was reset after it was removed.

16:46:55 Ambulance 56 arrived at Kingwood Medical Center.

Firefighter Groover was transported by Ambulance 56 to the Kingwood Medical Center where resuscitation and critical care efforts were unsuccessful.

An autopsy performed by the Harris County Institute of Forensic Science revealed smoke and soot in the airways. The cause of death was smoke inhalation.

Equipment Evaluation—Personal Protective Equipment

Compliance Officers Ernie Null and Fred Green, of the Texas Commission on Fire Protection (TCFP), arrived at the Houston Fire Department Arson Lab to look over the personal protective ensemble (PPE) and Self Contained Breathing Apparatus (SCBA) after Firefighter Groover's death on July 9, 2014.

Null and Green were met by Fire Investigator Greg Chapa of the Houston Fire Department Arson Bureau and Deputy Chief Kelly Baudat, of the Houston Fire Department, Office of Special Events.

This summary details the information on items normally regulated by the TCFP, according to the Texas Government Code, Chapter 419, Texas Commission on Fire Protection. These items are routinely viewed during a fire department compliance inspection.

All departmental records of issuance and maintenance associated with the PPE of the fallen firefighter were satisfactory and in compliance with the 37 Texas Administrative Code Section 435.1.

All departmental records of issuance and maintenance associated with the SCBA of the fallen firefighter were satisfactory and in compliance with the 37 Texas Administrative Code Section 435.3.

All continuing education records were satisfactory and in compliance with the 37 Texas Administrative Code Section 441.5.

National Institute for Occupational Safety and Health

The National Institute for Occupational Safety and Health tested the Scott 4.5 SCBA system and found that 500 psi remained in the cylinder. The SCBA components were working properly and passed all inspection tests conducted.

PASS Info Download

15:59:46: PASS Ready

15:59:46: Turn On

16:22:41: PRE-ALARM Alert

16:22:52: ALARM Auto Activation

16:40:00: PASS Ready

Findings and Recommendations

Recommendations are based upon nationally recognized standards and safety practices for the fire service. All fire department personnel should know and understand nationally recognized consensus standards, and all fire departments should create, update and follow SOGs and SOPs to ensure effective, efficient and safe firefighting operations.

This report details findings that contributed to the death of Firefighter Groover. The recommendations listed after each finding cite national fire service best practice references that are proven to reduce risk exposure to firefighters. While eliminating all risks in this dangerous profession will never be achieved, all firefighters have a duty to minimize risks whenever possible, especially where preventable errors occur.

This report is written to honor Firefighter Groover so that the Houston Fire Department and other firefighters learn the lessons from this incident. Findings and recommendations, when taken as a whole and applied as lessons learned, can help prevent future injuries and loss of life.

The autopsy conducted by the Harris County Institute of Forensic Science revealed smoke inhalation as the cause of death with a carboxyhemoglobin level of 22 percent. No cardiac incident was cited as a contributing factor. Moderate cardiomegaly and focal moderate coronary artery atherosclerosis were noted.

Finding 1

Initial crew did not perform a 360° scene size-up.

Recommendation

Perform a 360° evaluation of the structure upon arrival. A complete scene size-up provides a basis for a complete risk analysis. There was no indication that the south side (Charlie side) was inspected before the interior attack. A rapid and full assessment of the scene might have provided information about the potential fire travel paths.

A thorough and complete size-up provides a sound basis for developing a comprehensive risk analysis and deciding tactics. It provides the incident commander and on-scene personnel with information about fire conditions, building construction, and other considerations such as weather, utilities, and exposures.

Firefighter Rules of Engagement³:

- [Size Up Your Area of Tactical Operation](#) (March 2011)
- [Determine the Occupant Survival Profile \(Part 1\)](#) (April 2011)
- [Determine the Occupant Survival Profile \(Part 2\)](#) (May 2011)
- [Don't Risk Your Life for Lives or Property that Can't Be Saved; Extend Limited Risk to Protect Savable Property](#) (June 2011)
- [Extend Vigilant and Measured Risk to Protect and Rescue Savable Lives](#) (July 2011)
- [Go in Together, Stay Together, Come Out Together](#) (August 2011)
- [Maintain Continuous Awareness](#) (September 2011)
- [Monitor Radios](#) (October 2011)
- [Report Unsafe Practices That Can Harm You](#) (November 2011)
- [Abandon Your Position and Retreat](#) (December 2011)
- [Declare a Mayday as Soon as You Think You're in Danger](#) (January 2012)

The Ten Rules of Engagement for Structural Fire Fighting, 2001 IAFC

Acceptability of Risk

1. No building or property is worth the life of a firefighter.
2. All interior firefighting involves an inherent risk.
3. Some risk is acceptable in a measured and controlled manner.
4. No level of risk is acceptable where there is no potential to save lives or savable property.
5. Firefighters shall not be committed to interior offensive firefighting operations in abandoned or derelict buildings that are known to be, or reasonably believed to be, unoccupied.

³<http://www.iafc.org/onScene/article.cfm?ItemNumber=6735>

Risk Assessment

1. All feasible measures shall be taken to limit or avoid risks through risk assessment by a qualified officer.
2. It is the responsibility of the Incident Commander to evaluate the level of risk in every situation.
3. Risk assessment is a continuous process for the entire duration of each incident.
4. If conditions change, and risk increases, change strategy and tactics.
5. No building or property is worth the life of a firefighter.

Sources

- ***Structural Fire Fighting: Initial Response Strategy and Tactics***, 1st edition, IFSTA, Chapter 3 – Size-Up: Evaluation and Assessment
- ***Command Safety, The IC's Role in Protecting Firefighters***, A. Brunacini and N. Brunacini, 2004, Chapter 2 – Situation Evaluation
- ***Fire Officer: Principles and Practice***, 2006, Chapter 16 – Fire Attack, Sizing Up the Incident
- ***Fundamentals of Firefighting Skills***, second ed. Chapter 2 – Fire Fighter Safety
- ***Structural Firefighting: Strategy and Tactics***, second ed. Chapter 2 – Procedures, Pre-Incident Planning, and Size-up
- ***Texas State Fire Marshal's Office Fire Fighter Fatality Report FFF FY 13-08 Finding 2.*** <http://www.tdi.texas.gov/reports/fire/documents/fmloddbouston2013.pdf>

Finding 2

The initial responders did not adhere to the two-in, two-out rule. The E104 crew advanced the hose line up the stairs to a landing near the second floor. They continued up and entered the hall on the second floor before RIT was assigned and in place.

Recommendation

Company officers and all first responders should adhere to the two-in, two-out rule. Houston FD policy HFD Guideline II-21, Rapid Intervention and Survivability complies with U.S. Occupational Safety and Health Administration's Final Rule, 29 CFR Section 1910.134 (g) (4) requiring at least two fire protection personnel to remain located outside the Immediate Danger to Life or Health (IDLH) atmosphere to perform rescue of the fire protection personnel inside the IDLH atmosphere. This is a best practice, as all fire departments should develop written policy complying with OSHA CFR 1910.134 (g) (4).

Sources

- *NFPA 1500 Standard on Fire Department Occupational Safety and Health Program (2013) 8.8.11:* At least one dedicated Rapid Intervention Crew shall be standing by with equipment to provide for the rescue of members who are performing special operations or for members in positions that present an immediate danger of injury in the event of equipment failure or collapse.
- *NFPA 1500 Standard on Fire Department Occupational Safety and Health Program (2013), 8.8.2:* In the initial stages of an incident where only one crew is operating in the hazardous area at a working structural fire, a minimum of four individuals shall be required, consisting of two members working as a crew in the hazardous area and two standby members present outside this hazardous area available for assistance or rescue at emergency operations where entry into the danger area is required.
- *HFD Guideline II-21, Rapid Intervention and Survivability*
- *U.S. Occupational Safety and Health Administration Respiratory Protection Standard, CFR 1910.134 (g) (4); 1910.134(g) (4) (ii) At least two employees are located outside the IDLH atmosphere.*
- *Texas Commission on Fire Protection Standards Section 435.17 – Procedures for Interior Structure Fire Fighting (2-in/2-out rule)*

Finding 3

There was no hose line or search line to follow out when it became necessary to exit the structure, or for the RIT to follow to the lost firefighter. The hose line did not reach into the second floor of the residence. The first attack line was ordered to be relocated from the fire attack on the Delta side to the front door. The attack line was stretched directly to the front door and the trees in the yard prevented a straight path from the engine to the door. When E104A and Firefighter Groover were on the second floor there was no hose or search line to follow out. Losing contact with the hose line meant leaving the only lifeline and pathway to safety.

Recommendations

Use a search line to help maintain team contact and provide an exit route. Deploy additional attack lines from the engine and do not redeploy charged lines. The initial attack hose line could not reach to the second floor when redeployed from the Delta side. Maintaining contact with the hose line is critical.

Sources

- *Essentials of Fire Fighting*, 6th edition, IFSTA, Chapter 9, Structural Search, Victim Removal, and Firefighter Survival
- *Fundamentals of Firefighter Skills*, second edition, NFPA and International Association of Fire Chiefs, Chapter 17, Fire Fighter Survival

Finding 4

The interior operating crew did not practice effective air management or out-of-air emergency techniques.

Firefighter Groover's SCBA face mask was not in the proper position when he was located and moved to the balcony (the bottom of the face mask was above Firefighter Groover's nose area and not covering the mouth or nostrils). The cause of the dislodged face mask is unknown; however, the position of the face mask is indicative of removal by the firefighter. Continued investigation of the incident revealed that Firefighter Groover's SCBA cylinder contained approximately 500 psi of breathable air. The cylinder valve of the SCBA was closed by a firefighter on the scene before it was examined. How many turns the valve was open is not known.

Firefighter Groover's experience was primarily in emergency medical service. When he moved to a structural firefighting crew in 2012 it was his first structural firefighting assignment of his 21-year career.

Recommendation

When donning the SCBA and before entering an IDLH atmosphere, be certain the cylinder valve is fully open as recommended by the SCBA manufacturers. Failure to fully open cylinders can result in poor performance and reduce airflow to the face piece.

Provide continuing education and training to all personnel in air management techniques when using the SCBA in Immediate Danger to Life and Health atmosphere situations. Crews operating in IDLH atmospheres must monitor their air consumption rates and allot for sufficient evacuation time. Firefighters must be aware of the time at which the remaining operation time of the SCBA is equal to the time necessary to return safely to a non-hazardous atmosphere. This is known as the point of no return. The three basic elements to effective air management are:

- *Know your point of no return (beyond 50 percent of the air supply of the team member with the lowest gauge reading).*
- *Know how much air you have at all times.*
- *Make a conscious decision to stay or leave when your air is down to 50 percent.*

Sources

- ***NIOSH Fire Fighter Fatality report*** F2011-18, A Career Captain Dies and 9 Fire Fighters injured in a Multistory Medical Building Fire—North Carolina
<http://www.cdc.gov/niosh/fire/reports/face201118.html> Recommendations 6 and 7
- ***Essentials of Fire Fighting and Fire Department Operations***, 6th ed., IFSTA [2013]. Chapter 9, Air Management
- ***Fundamentals of Firefighter Skills***, second edition, NFPA and International Association of Fire Chiefs, Chapter 17, Fire Fighter Survival

Finding 5

Crew integrity was not maintained by either physical or verbal contact. Firefighter E104B could not see who was working on the second floor but could hear E104A working on the ceiling with the pike pole. Neither E104A nor E104B knew Firefighter Groover's location.

Recommendation

Crew integrity must be maintained by all crew members. When crews are working in zero visibility, verbal or physical contact must be maintained at all times. Firefighter Groover did not communicate either his intention to search another room or that he was having difficulty finding the exit. Team integrity provides an increased chance for survival. All firefighters should become familiar with, and receive training on, techniques for survival and self-rescue.

Sources

- *NFPA 1500 Standard on Fire Department Occupational Safety and Health Program (2013), 8.5.5: Crew members operating in hazardous areas shall be in communication with each other through visual, audible, or physical means or safety guide rope, in order to coordinate their activities.*
- *Fundamentals of Firefighter Skills, second edition, NFPA and International Association of Fire Chiefs, Chapter 17, Fire Fighter Survival, pg. 534*
- *Texas Commission on Fire Protection Standards Section 435, Fire Fighter Safety.*
17 - (2) at least two fire protection personnel to enter the IDLH atmosphere and remain in visual or voice (not radio) contact with each other.
- *U.S. Occupational Safety and Health Administration Respiratory Protection Standard, CFR 1910.134(g) (4) (i) At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times.*

Finding 6

The interior team did not verify the correct operation of communication equipment before entering the IDLH atmosphere and did not maintain communication. Firefighter Groover turned on his radio 10 minutes after entering the residence, and it was on the wrong channel.

Recommendation

Fire departments should develop written policies requiring the verification of the correct operations of communications equipment before crews enter an IDLH atmosphere. Fire departments also should train members on the operation of communication equipment in zero visibility conditions.

Sources

- ***Portable Radio Best Practices***, *International Association of Fire Chiefs, Section 2, Recommendation 1: Comprehensive and continuing training is critical to the successful use of complex communications equipment. All personnel must be trained to properly use the assigned radio equipment in conjunction with all components of the protective ensemble.* https://www.iafc.org/files/digProb_PortableRadioBestPractices.pdf
- ***Voice Radio Communications Guide for the Fire Service***, U.S. Fire Administration, <http://www.iaff.org/08News/PDF/RadioCommunications.pdf>
- ***U.S. Occupational Safety and Health Administration Respiratory Protection Standard***, CFR 1910.134(g) (3) (ii): *Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere.*

Finding 7

A Mayday was not called by anyone on the fire ground when it was realized that a firefighter was missing. Firefighter Groover's radio was off and on the wrong channel and would have prevented him from transmitting a Mayday when he became separated from his crew and was low on air (See Finding 6).

Recommendations

Train personnel on the activation, use and practices required by HFD procedures related to Mayday operations. If a Mayday had been declared, the operations might have benefitted from more clear radio communications. "Any member may use the Mayday transmission to report a lost or trapped firefighter." *HFD Operations Manual Volume No. II, Section 1.01-6.11*

7a. Recommend declaration of a Mayday by the company officer once a firefighter is missing.

7b. Recommend declaration of a Mayday by the division supervisor.

The captain briefed the Alpha division supervisor that a firefighter was missing in a face-to-face communication. No Mayday was activated by the officer of E104 or the supervisor of Alpha division.

7c. Recommend declaring a Mayday by the Incident Commander to clear radio traffic.

The RIT deployed to search for a missing firefighter, but no Mayday had been declared so radio traffic continued.

Sources

- *United States Fire Administration's National Fire Academy training course "Firefighter Safety: Calling the Mayday"* Q0133 <https://apps.usfa.fema.gov/nfacourses/catalog/details/517>
- *Essentials of Fire Fighting*, 6th ed., IFSTA, 2013, Chapter 9, Structural Search, Victim Removal, and Firefighter Survival
- *Fundamentals of Firefighter Skills*, second edition, NFPA and International Association of Fire Chiefs, Chapter 17, Fire Fighter Survival
- *HFD Operations Manual*, Volume No. II, Section 1.01-6.11

Finding 8

Firefighters staffing the Grace system at the command post were inexperienced in operating the system. Based on interviews and radio transmissions, it was apparent that there was uncertainty about Firefighter Groover's location or condition. Houston Fire Department enhances the ability to perform personnel accountability with an electronic accountability system. Electronic accountability was not started until 16:14, 14 minutes after arrival of Engine 104 and approximately four minutes after E104 crew entered the residence. Personnel accountability was not maintained by the company officer during the interior attack.

Recommendation

Firefighters should be trained on the operation of the electronic accountability system. Personnel accountability must be maintained at all times, particularly when members are operating in an IDLH environment.

Sources

- ***NIOSH Firefighter LODD Report (Recommendation 5)*** <http://www.cdc.gov/niosh/fire/reports/face9947.html>
- ***Essentials of Fire Fighting***, (5th Edition), IFSTA, Chapter. 2, pg. 74: Every fire department must use some system of accountability that identifies and tracks all personnel working in the hazard zone at an incident. Accountability is vital in the event of a sudden and unexpected change in fire behavior or a structural collapse.
- ***Houston Fire Department Emergency Operations Guidelines: Electronic Accountability System, Section 5.05.C:*** Command will maintain an accurate continual awareness of where crews are committed during all phases of an incident (staged, sector, rehab, evacuation, etc.).

Finding 9

A personnel accountability report (PAR) was not completed immediately after the firefighter was unaccounted for.

Recommendation

When anyone on the fire ground is made aware of the possibility of a lost/trapped firefighter, the Incident Commander should be immediately notified, and a PAR for all companies should be called without delay.

Sources

- ***Essentials of Fire Fighting*, IFSTA, (6th Edition), Chapter 3 – Fire Department Communications:**
 - A PAR is usually requested when:*
 - ***A firefighter is reported missing or in distress.***
- ***Houston Fire Department Emergency Operations Guidelines:***
 - Rapid Intervention Teams and Survivability, Section 6.05.A:*
 - When a firefighter is reported trapped or missing ... the IC will initiate a rescue effort by:*
 - *Requesting a PAR check of the personnel on the scene.*
 - *Determining how many personnel are trapped or lost.*
- ***Houston Fire Department Emergency Operations Guidelines: Rapid Intervention Teams and Survivability, Section 6.07.D – PAR shall be conducted ... whenever a sudden hazardous event occurs (backdraft, collapse, etc.), IC will contact each sector and/or company to confirm the safety of all members.***

Finding 10

Continuous risk assessments were not completed by the company officer. A thorough risk analysis was not completed before the interior search. Although the Incident Commander has ultimate responsibility for risk analysis, supervisory personnel at all levels including company officers are responsible for performing risk management analysis to define unacceptable risk.

Recommendation

Continuous review of objectives and strategies, including an evaluation of the associated risks, should take place throughout a complex emergency incident. The need for a focused risk assessment is highlighted whenever personnel are in an IDLH atmosphere, especially while defensive operations are taking place. The search operation for fire extension required an evaluation of the risks involved using command resources. The responsibility for risk analysis is shared by the company officers and team leaders. These leaders should evaluate the instructions they are given and determine whether the current conditions allow for safe completion of the assignment.

References

- ***Standard on Fire Department Occupational Health and Safety Program, NFPA 1500, Chapter 8, 8.1.8:*** *At an emergency incident, the incident commander shall have the responsibility for the following:*
 - (3) *Perform situation evaluation that includes risk assessment.*
- ***NFPA 1500, A.8.3.2 Emergency Operations (Annex A - Explanatory Material):***
 - The risk to fire department members is the most important factor considered by the incident commander in determining the strategy that will be employed in each situation. The management of risk levels involves all of the following:*
 1. *Routine evaluation of risk in all situations.*
 2. *Standard operating procedures.*
- ***Standard on Emergency Services Incident Management System and Command, NFPA 1561, Safety, Chapter 5, 5.3.17:*** *The incident commander shall evaluate the risk to responders with respect to the purpose and potential results of their actions in each situation.*
- ***NFPA 1561, 5.3.18:*** *In situations where the risk to emergency service responder is excessive,*

activities shall be limited to defensive operations.

- **NFPA 1561**, 5.8.2: *Supervisory personnel shall assume responsibility for activities within their span of control, including responsibility for the safety and health of responders and authorized persons within their designated areas.*
- **Chief Officer** - IFSTA (2004) (second Edition), Ch. 12, pg. 401: *Continuous monitoring of risk and gain is the essence of a chief officer's responsibility in evaluating the strategy, LAP (Incident Action Plan), and risk. The chief officer then analyzes that evaluation and translates it into safe and effective operations.*

Additional Recommendations by El Paso Fire Department

A1 Recommendation: Leave charged lines in place and deploy additional lines off the attack pumper. This prevents a loss of slack due to entanglement and is less labor intensive. This practice will also leave a charged line for second-in companies to assist if the decision is made to attack the initial fire again. Deploying fresh attack lines also allows the E/O the opportunity to estimate the amount of line needed and is less taxing on the fire crews.

A2 Recommendation: All departments understand the strength of doors built with tempered glass and the challenges these doors create for firefighting. There were indications that Firefighter Groover attempted to find a way out. A louvered closet door was broken as if Firefighter Groover was attempting to exit through this door. A French door that opened to the second floor balcony had a door handle that was turned downwards as though Firefighter Groover turned the handle in an attempt to open these doors.

Discussion

French doors may appear to be an easy exit but in fact, modern doors that are constructed with tempered glass are almost impossible to force. The door could have been opened from the inside if Firefighter Groover had time, good visibility and he was familiar with this type of doors. The French doors had 15 small panes of glass encased in a wood frame. These doors appear easy to break but this is not the case. These window panes are difficult if not impossible to break without a substantial amount of work with a striking tool. These doors are very difficult to open in an emergency situation unless you are aware that one side has the deadbolt lock and the other side has a dummy handle that is just for cosmetic affect and does not manipulate the lock.

A3 Recommendation: All firefighters understand the importance of allowing a communication loop to close prior to transmitting with regard to a new order or topic. Throughout this incident vital communication was lost or disregarded due to interrupted communication loops (radio traffic).

A4 Recommendation: HFD train all companies on the need to control superfluous radio traffic. Training should also be held to ensure the Incident Commanders are more forceful with regard to controlling radio traffic. HFD procedures state that the IC should control

radio traffic as part of his/her duties. A more assertive enforcement of this process might have been a benefit during this incident (HFD Incident Management Volume II, Section 1.01-6.02C). This training should of course include the dispatch center employees. Several times Dispatch called for units that were en route instead of simply waiting for the units to place themselves “on location.”

A5 Recommendation: If possible, the Battalion Chief should keep his Incident Command Technician in the command post from the start of an incident to work as the Safety Officer and activate the Grace Accountability System. In Houston this is listed as one of the Functions of Command that the IC is responsible for accomplishing. (HFD Incident Management Volume II, Section 1.01-6.02C)

Discussion

At about 3 minutes, 51 seconds into the incident (16:07) District 102 arrived on the scene and assumed command. His Incident Command Technician (ITC) or driver immediately went over to E104D to assist with hooking up a supply line to a hydrant by physically dragging it by hand. The times captured in the Grace System show that it was not turned on until 16:14, seven minutes after D102 arrived on the scene. The ICT of D102 did not return to Command to activate the Grace System but another firefighter was ordered to assist in the Command Post with Grace.

Appendix A: Houston Fire Department Statistics

The Houston Fire Department serves a population in excess of 2.2 million over an area of 618 square miles. During the work day, the population surges to more than 3 million. The Houston Fire Department is an ISO CLASS 1 department.

They perform this service with more than 3,600 uniformed personnel that include 21 district chiefs, three safety officers, 10 EMS supervisors, and two shift commanders. This does not include the cadet classes with 120 cadets that are in progress, or the civilian support staff.

The members assigned to Suppression, EMS and Office of Emergency Communication work on a 24-hour shift rotation. The minimum number of classified members needed to staff all emergency response vehicles in the station each day is 833. In addition, the Office of Communication has a minimum daily staffing of 16 communication officers.

The Houston Fire Department consists of 92 fire stations, four airport rescue ARFF stations, and a Hazmat station.

In 2013, the Houston Fire Department responded to 299,107 incidents (257,107 EMS and 42,064 fire). The average response time for EMS events was 5.8 minutes, and the average response time for a fire event was 5.6 minutes.⁴

Certifications Background

The key responding firefighters including Firefighter Groover had more than 163 years of combined employment with the Houston Fire Department.

District 102 – Command – 21 years with the Houston Fire Department and holds five active certifications through the Texas Commission on Fire Protection. They include Fire Officer I, Incident Safety Officer – Fire, Firefighter Advanced, Fire Service Instructor II, and Basic Volunteer Fire Fighter.

⁴Southwest Inn Recovery Committee Final Report and Recommendations, September 1, 2014

District 64 – Alpha Division Supervisor – 32 years with the Houston FD and holds two active certifications through the Texas Commission on Fire Protection: Firefighter Advanced and Fire Service Instructor II.

Engine 104 – Captain – 25 years with the Houston FD and holds four active certifications through the Texas Commission on Fire Protection: Firefighter Advanced, Driver/Operator - Pumper, Fire Officer I, and Fire Service Instructor II. Captain Caballero was not the usually assigned officer and was on duty for a makeup/debit day.

Engine 104 – Engineer Operator – 33 years with the Houston FD and holds two active certifications through the Texas Commission on Fire Protection: Firefighter Intermediate and Driver/Operator-Pumper. E/O Rodriguez was not the usually assigned driver and was on duty for a makeup/debit day.

Engine 104 – Firefighter B – 31 years with the Houston FD and holds three active certifications through the Texas Commission on Fire Protection: Firefighter Intermediate, Driver/Operator-Pumper, and ARFF Basic. Firefighter Cloud was working his normal shift and assignment.

Engine 104 – Firefighter C – 21 years with the Houston FD and held two active certifications through the Texas Commission on Fire Protection: Firefighter Basic and Driver/Operator-Pumper. Firefighter Groover was working his normal shift and assignment.

Firefighter Groover

Firefighter Groover began his career with the Houston Fire Department in 1993. His first assignment was at Station 18 as a probationary paramedic. Firefighter Groover was assigned as a paramedic on Medic units throughout his career at seven stations, including two stations at the airport, until he was reassigned to an Engine company in January 2012. Firefighter Groover was reassigned from EMS duties to Station 104 in June 2012.

Appendix B: Houston Fire Scene Operations Timeline of Events

NOTE: This timeline was developed by the officers of the El Paso Fire Department from Houston Fire Department radio transcripts, statements of firefighter and witnesses, and television news footage.

<u>TIME</u>	<u>EVENT</u>	<u>SOURCE</u>
<u>NE TAC 4 Benchmark</u> [Grace Acct. Sys. Benchmark]	Note: The <u>NE TAC 4 Benchmark</u> time = OEC recorded benchmark times. The <u>[Grace Benchmark]</u> time = ATIA LODD 7 9 2014 Note: Tape timelines [minutes] do not coincide w/OEC recorded benchmark times; therefore, OEC stated times & Grace timestamps used to triangulate On-the-Scene (OTS) event times.	
15:55:28	Shed on fire: Engine 104 Walnut Lane near Redbud Lane (G Map 336 F Foxtrot AA3)	Recorder
	House on fire: District Chief 102, District Chief 64, Engine 102, Engine 103, Engine 63, Ladder 102, Ladder 64, Ambulance 56, Squad 34: Mistletoe Lane near Forest Cove Drive (G Map 336 F Foxtrot AA3)	Recorder
15:59:46	Engine 104 we're on location, we got fire coming from a one story, can you go ahead and send me a box	Engine 104
	Engine 104 they upgraded the call. Ummmm the address 1611 is that the correct address cause we have 1400 Mistletoe	Dispatcher
	Engine 104, Engine 104	Dispatcher
16:00:39	Engine 104 Go ahead	Engine 104
	Is the address 1400 Mistletoe or 1611 Walnut Lane?	Dispatcher
	It's gonna be Mistletoe	Engine 104
	Received	Dispatcher
	District 102 do I have a working fire and 104 is on it?	District 102
	District 102 yes, originally engine 104 was dispatched by themselves. He called for a box.	Dispatcher
	District 102 received, give us a Tac Channel	District 102
	Received, your assigned Tac channel is going to be NE Tac 4, NE Tac 4	Dispatcher
<u>16:01:28</u>	All units responding to 1400 Mistletoe Lane, your assigned Tac Channel is going to be NE Tac 4. All units responding to 1400 Mistletoe Lane, your assigned Tac Channel is NE Tac 4, Time 16:01	Dispatcher
	Engine 104 on 4 be advised District 102 we got ammunition going off at this time	Engine 104
	District 102 to engine 104 give me an update if you can	District 102
	Ladder 101 to dispatch can you take us off this one and add us to the fire working in 104 territory	Ladder 101
	OEC to Engine 104 be advised, we're getting additional information there's possible fireworks or ammunition going off at the location. Just use caution	OEC
	Received Ladder 101	Dispatcher ?

Dispatch & OTS times

	District 102 to Engine 104	District 102
	Engine 104 I need a 4"?????? line	Engine 104
16:03:39	District 102 received you need a 4"	District 102
	House on fire: Ladder 101 Mistletoe Lane near Forest Cove Drive (G Map 336 F Foxtrot AA4)	Recorder
	Ladder 101 are you still en route or have you made location?	Command ?
	Ladder 101 we're en route to house fire	Ladder 101
	Received	Command ?
	District 102 on location I got heavy smoke coming from a 2-story residence. Engine 104 is making an offensive attack and establishing a water supply at this time. I'll be Mistletoe Command	District 102
16:07:11	Received District 102 on location assuming Mistletoe command, 16:07 <u>Note: 6 minutes elapsed between OEC stated hour benchmarks 16:01-16:07.</u>	Dispatch
	Mistletoe command to ladder 101, I need you to come in and ventilate the roof	Command District 102
	Ladder 101 received, ventilate	Ladder 101
	???????????????????? first engine We are gonna check for extension	?
	Engine 104 repeat	Command ?
16:09:02	Engine 104A to B put the 1 ^{3/4} " to the front door <u>Note: +6 minutes elapsed between OEC stated hour benchmarks 16:01-16:07.</u> <u>Note: E104 changes position from garage to front door. Capt. E104 stated during interview that the initial point of attack/force entry was to the garage doors.</u>	Engine 104A
16:09:39	Ladder 102 we're on location staged	Ladder 102
	Ladder 102 on location, if you're here, go ahead and ventilate the roof at this time.	Command
	Ladder 102 received, ventilate the roof	Ladder 102
	????????????????????	
	Ladder 101 are you on location?	?
	Ladder 101 no we're responding from ___ hospital	Ladder 101
	Received	
16:10:21	Engine 102 is on location	Engine 102
	Engine 102 come in and pull a second line, assist engine 104	Command
	OEC To Mistletoe command	
16:10:45	Engine 103 on location	Engine 103
	Engine 103 you'll be the RIT team, send your chauffeur to the command <u>Note: +6 minutes elapsed between OEC stated hour benchmarks 16:01-16:07.</u>	Command
16:11:01	Engine 103 received, be the RIT team	Engine 103

	OEC calling Mistletoe command	OEC
	Command Go ahead	Command
	Mistletoe command Ladder 64 was dispatched on your original assignment. I'm gonna pull him off and use him as the back end/hand company. Is that gonna be okay with you?	OEC
	Command that's fine	Command
	Received ladder 64 you can	OEC
	Ladder 64 received 102	Ladder 64
16:12:01	Ambulance 56 is on scene	Ambulance 56
16:12:15	Squad 34 is on location	Squad 34
16:12:23	Ladder 101 on location	Ladder 101
	Command to Engine 104	Command
	Engine 104 _____	
16:12:44	Command to Engine 104 I have a second engine company with a second line coming in to assist you. Do you need any other units in there?	Command
16:12:53	We're trying to get through the ceiling <u>Note: E104/crew of 3 inside (second floor)</u>	Engine 104
	Command Received	Command
16:13:23	Be advised the power is still on	Engine 104
	Command Received. Command to Ladder 102D	Command
	Ladder 102D	Ladder 102D
	Get the utilities for me, start with the power	Command
	102D Received	Ladder 102D
16:13:59	Mistletoe command to OEC I have a 4" water supply established, and I have grace in place	Command
<u>16:14 hrs.</u> [07/09/14 16:14:51]	Received. Water supply established and Grace in place. 16:14 Grace: E104 Capt. On Mode 16:15:00 E104 FF B On Mode 16:15:06 E104 FF C On Mode 16:15:30 Note: Grace established 7 min. after D102 assumes Command: Benchmarks 16:07-16:14. Note: E104 on the scene in offensive mode > 13 minutes at benchmark "Grace in place"	OEC
	District 102B to District 102A the main power is on the inside of the residence and can't be turned off on the outside.	District 102B
16:16:13	Engine 63 on Location	Engine 63
	Command to Engine 104D	Command
	????????????????????????????	

	Mistletoe Command to OEC, I'm gonna need the power company	Command
	Received power company	OEC
	House on fire cascade 23 Mistletoe Lane near Forest Cove Drive (G Map 336 F Foxtrot AA4)	Recorder
16:15:42	District 64 to command we can take a third line off of engine 104, the company that you assigned is gonna need to bring their own line with them.	District 64
	Command received	Command
16:15:54	Command to ladder 101 bring 1 ^{3/4} with you and let's get into this garage over here, gonna work off engine 104.	Command
	Ladder 101 received backup engine 104 with a line	Ladder 101
16:16:13	Engine 63 on location	Engine 63
	Engine 63 report to the Alpha district 64	Command
[07/09/14 16:16:32] [07/09/14 16:16:47] [07/09/14 16:16:48]	(START OF AUDIO FILE) District 10...2A The power has been cut E10...(cut off approx.. 2 sec) ... the powers been cut (Key, no audio- may be what cut above message)	E104A D102B
[07/09/14 16:17:07]	Ladder 102D to District 102 you got fire broke through the roof on the B Bravo side	Ladder 102D 4008890
[07/09/14 16:17:21]	Command Received	Command D102
[07/09/14 16:17:28]	Command to Engine 104 give me a report	Command D102
[07/09/14 16:18:13] [07/09/14 16:18:20] [07/09/14 16:18:31]	????????? (Key with breath, no audio) (No audio) E63 calling command	E104A E063A E063A
[07/09/14 16:18:46]	Engine 104 to command	Engine 104A
[07/09/14 16:18:52]	Go ahead 104	Command D102
[07/09/14 16:18:55]	What do conditions look like outside? (unreadable)....outside	Engine 104A

[07/09/14 16:19:03]	Engine 104 repeat	Command D102
[07/09/14 16:19:08]	What are the conditions looking like on the second floor? What do conditions look like on the second floor	Engine 104A
[07/09/14 16:19:13] [07/09/14 16:19:20]	It's looking better, you still have something burning up there, the smoke is still brown, it's not turning It's looking better you still have uh something's burning up there, the smoke's still brown it's not turning (E104C Radio on DISP CW)	Command D102
[07/09/14 16:19:22] [07/09/14 16:20:40] [07/09/14 16:20:42]	Engine 104 received That's (?) ... E104 received (No audio) (No audio)	Engine 104A
[07/09/14 16:21:15]	Engine 104 calling 104B. Engine 104 calling Engine 104B. Engine 104B E104 calling 104B (No audio)	Engine 104A E063A
[07/09/14 16:21:57]	Ladder 102 the roof is vented	Ladder 102A
[07/09/14 16:22:02]	Command received roof is vented	Command D102
[07/09/14 16:22:14] [07/09/14 16:22:15]	(Key but cut off by D64) District 64 to Engine 102, you have no more slack in the line. You've advanced the line as far as you can go.	E104A District 64 D064A
[07/09/14 16:22:25] [07/09/14 16:22:27] [07/09/14 16:22:37] [07/09/14 16:22:43] [07/09/14 16:22:49]	TPASS Pre-alert (Key no audio) (Key no audio) Alarm Auto Activation (Key no audio)	Engine 104A Engine 104A L101A

[07/09/14 16:22:55]	<p>Engine 104 to command we're coming down for a bottle change</p> <p>E104 FF C Motion Alarm</p> <p><u>Note: Approx. 22 minutes since E104 on the scene establishing offensive exterior attack at garage- D side: 16:01-16:22:49 hrs.</u></p> <p><u>Note: Approx. 16 minutes since E104 initiated off. Attack inside structure: 16:07-16:22:49 hrs.</u></p> <p><u>Note: Approx. 9 minutes elapsed since benchmark "Grace in place": 16:14-16:22:49 hrs.</u></p>	E104A
[07/09/14 16:22:56]	Command Received	Command D102
[07/09/14 16:23:00]	Command to engine 102	Command D102
[07/09/14 16:23:09]	<p>Engine 104 to command. 104C is alarmed?</p> <p>E104 to Command is 104C in alarm</p>	Engine 104A
[07/09/14 16:23:24]	<p>Ladder 101 to Command: Sending one guy out with a burn, 2 of us going back in with a line</p> <p>[07/09/14 16:23:25] Radio Status Traffic - Radio Subscriber Reject E103D</p> <p>[07/09/14 16:23:31] Radio Status Traffic - Radio Subscriber Reject T064D</p> <p><u>Note: E104A communication loop not closed/interrupted</u></p>	Ladder 101A
[07/09/14 16:23:34]	Command Received. Command to Squad 34	Command D102
[07/09/14 16:23:38]	Squad 34 go ahead sir	Squad 34 SQ034A
[07/09/14 16:23:41]	E104 FF C Alarm Cleared	
	Check that firefighter	Command D102
[07/09/14 16:23:46] [07/09/14 16:23:47]	<p>E104 FF C Motion Alarm</p> <p>Squad 34 Received SQ034A</p>	
[07/09/14 16:23:50] [07/09/14 16:23:51] [07/09/14 16:23:57]	<p>E104 FF C Alarm Cleared</p> <p>Accountability to FF104C are you okay?</p> <p>E104 FF C Motion Alarm</p>	Accountability E103D

[07/09/14 16:24:17]	District 64 calling engine 104C	District 64 D064A
[07/09/14 16:24:26]	Accountability calling FF104C are you okay?	Accountability E103D
[07/09/14 16:24:35]	Command to Engine 104	Command D102
[07/09/14 16:24:47]	Accountability to 104A	Accountability E103D
[07/09/14 16:24:51]	104A Go ahead	E104A
[07/09/14 16:24:54]	Do you have contact with Firefighter C? 104C is alarmed.	Accountability E103D
[07/09/14 16:25:00]	E104 - No, not at this time	E104A
[07/09/14 16:25:08]	Accountability to engine 104C, you're in alarm, are you okay?	Accountability E103D
[07/09/14 16:25:23]	Rescue 11 can you put us on that record, we will be responding	Rescue 11 HR011F
[07/09/14 16:25:29]	E104 FF C Motion Alarm	4008890
[07/09/14 16:25:29]	(No audio)	
	House on fire safety officer 30 Mistletoe Lane near Forest Cove Drive (G Map 336 F Foxtrot AA4)	Recorder
[07/09/14 16:25:31]	District 64 calling command be advised that we are implementing a RIT team to search for Firefighter C off of engine 104	District 64 D064A
[07/09/14 16:25:44]	Command to Alpha I believe he's at the engine right now	Command D102
[07/09/14 16:25:49]	E104 FF C Alarm Cleared	
[07/09/14 16:25:49]	Negative, that's Bravo	4008890
[07/09/14 16:25:52]	E104 FF C Motion Alarm	

[07/09/14 16:25:53]	<p>Received. Activate the RIT. District 102 OEC give me a 211</p> <p><u>Note: Approx. 26 minutes since E104 on the scene establishing offensive exterior attack at garage- D side: 16:01-16:25:53 hrs.</u></p> <p><u>Note: Approx. 19 minutes since E104 initiated off. Attack inside structure: 16:07-16:25:53 hrs.</u></p> <p><u>Note: Approx. 12 minutes elapsed since benchmark "Grace in place": 16:14-16:25:53 hrs.</u></p> <p><u>Note: Approx. 7 minutes elapsed since E104C Radio on DISP CW: 16:19:20-16:25:53 hrs.</u></p> <p><u>Note: Approx. 3 minutes elapsed since initial E104 FF C Motion Alarm: 16:22:55-16:25:53 hrs.</u></p>	Command D102
[07/09/14 16:25:59]	Received 211	OEC s30op15
[07/09/14 16:25:59]	Engine 104A calling 104C acknowledge	E104A
[07/09/14 16:26:04]	(No audio)	s30op15
[07/09/14 16:26:24]	<p>Ladder 102 to District 102: District 64 is having us be the backup RIT team</p> <p>[07/09/14 16:26:25] Radio Status Traffic - Radio Subscriber Reject E104A</p> <p>[07/09/14 16:26:27] Radio Status Traffic - Radio Subscriber Reject E104A</p>	Ladder 102 L102A
[07/09/14 16:26:33]	<p>Command received</p> <p>[07/09/14 16:26:33] Radio Status Traffic - Radio Subscriber Reject E104A</p>	Command D102
[07/09/14 16:26:36]	<p>Engine 104A to command I hear a TPASS going off on the second floor, I hear a TPASS going off on the second floor.</p> <p><u>Note: Approx. 7 minutes elapsed since E104C Radio on DISP CW: 16:19:20-16:26:36 hrs.</u></p> <p><u>Note: Approx. 3 minutes elapsed since initial E104 FF C Motion Alarm: 16:22:55-16:26:36 hrs.</u></p> <p><u>Note: Approx. 1/2 minute elapsed since RIT activated: 16:25:53-16:26:36 hrs.</u></p>	E104A
[07/09/14 16:26:46]	Received. Command to alpha send the team to the second floor we have a TPASS going off.	Command D102
[07/09/14 16:26:53]	Alpha received. The RIT team is deploying right now en route to the second floor	Alpha D064A
[07/09/14 16:27:09]	Engine 104A:??????????	E104A
[07/09/14 16:27:12]	(No audio)	D102B
[07/09/14 16:27:19]	(No audio)	E104A

	Engine 65 received the run. What Tac channel are we on?	
	NE Tac 4, NE Tac 4	Dispatcher
[07/09/14 16:27:35]	Engine 104A: Air, I'm low on air and coming down	E104A
[07/09/14 16:27:38]	(No audio) (No audio) <u>Note: Approx. 27 minutes since E104 on the scene establishing offensive exterior attack at garage- D side: 16:01-16:27:35 hrs.</u> <u>Note: Approx. 21 minutes since E104 initiated off. Attack inside structure: 16:07-16:27:35 hrs.</u> <u>Note: Approx. 5 minutes elapsed time since E104A initially reports exiting structure for bottle change and returns to search for 104C: 16:22:49-16:27:35 hrs.</u>	E104A
[07/09/14 16:27:46]	Command: did you say you were alright, you're coming down?	Command D102
[07/09/14 16:28:16]	(No audio)	E102D
	House on fire ?????? Mistletoe Lane near Forest Cove Drive (G Map 336 F Foxtrot AA4)	Recorder
[07/09/14 16:28:36]	Alpha, Alpha to RIT be advised, He's going to be on the second floor, bedroom to the left.	Alpha D064A
[07/09/14 16:28:39]	(No audio)	D064A
[07/09/14 16:28:49]	Alpha to command be advised that ladder 102 is my secondary RIT team.	Alpha D064A
[07/09/14 16:28:57]	Command received	Command D102
[07/09/14 16:29:02]	(Breathing, no audio- cut off)	L101A
[07/09/14 16:29:02]	(No audio)	L101A
[07/09/14 16:29:03]	Alpha to RIT when you get to the second floor, first door to the left	Alpha D064A
[07/09/14 16:29:12]	E104 FF C Alarm Cleared	

<p>[07/09/14 16:29:23]</p> <p>[07/09/14 16:29:37]</p>	<p>Ladder 101 to command: We found a good bit of fire on the delta side. We're hitting it trying to knock it down, we're also gonna need some pike poles back here.</p> <p>E104 FF C Motion Alarm</p> <p><u>Note: Approx. 4 minutes elapsed since last E104 FF C Motion Alarm 16:25:52-16:29:37</u></p>	L101A
	<p>211 Fire, District Chief 34, District Chief 45, Engine 56, Engine 64, Engine 65, Engine 105, Ladder 64, Ladder 74, Chariot 17, Ambulance Supervisor 30, Shift Commander 15, Medical Par 8, Page 211, Page 800, Page 118, EMS D11 Mistletoe Lane near Forest Cove Drive (G Map)</p>	Recorder
<p>[07/09/14 16:29:37]</p> <p>[07/09/14 16:29:38]</p> <p>[07/09/14 16:29:48]</p> <p>[07/09/14 16:29:50]</p>	<p>Command Received</p> <p>Radio Status Traffic - Radio Subscriber Reject D064A</p> <p>Radio Status Traffic - Radio Subscriber Reject D064A</p> <p>(No audio)</p> <p>(No audio)</p>	<p>Command D102</p> <p>E064B</p>
[07/09/14 16:29:42]	Alpha to all members on the fire ground hold your traffic until we find our firefighter	Alpha D064A
[07/09/14 16:29:58]	Alpha to RIT	Alpha D064A
<p>[07/09/14 16:30:11]</p> <p>[07/09/14 16:30:12]</p> <p>[07/09/14 16:30:18]</p>	<p>Alpha calling RIT</p> <p>Radio Status Traffic - Radio Subscriber Reject T064B</p> <p>(No audio)</p>	<p>E065B</p> <p>E065B</p>
[07/09/14 16:30:22]	<p>Engine 63 Delta we have firefighter recovered, he's on the balcony c side, second floor</p> <p><u>Note: Approx. 29 minutes elapsed since E104 on the scene establishing offensive exterior attack at garage- D side: 16:01-16:30:22 hrs.</u></p> <p><u>Note: Approx. 23 minutes elapsed since E104 initiated off. Attack inside structure: 16:07-16:30:22 hrs.</u></p> <p><u>Note: Approx. 16 minutes elapsed since benchmark "Grace in place": 16:14-16:30:22 hrs.</u></p> <p><u>Note: Approx. 11 minutes elapsed since transmission "E104C Radio on DISP CW": 16:19:20-16:30:22 hrs.</u></p> <p><u>Note: Approx. 8 minutes elapsed since initial E104 FF C Motion Alarm: 16:22:55-16:30:22 hrs.</u></p> <p><u>Note: Approx. 7 minutes elapsed time since E104A initially reports exiting structure for bottle change & returns to search for 104C: 16:22:49-16:30:22 hrs.</u></p>	<p>Engine 63 Delta E063D</p>

[07/09/14 16:30:33]	(No audio)	E065B
[07/09/14 16:30:35]	Engine 63 did you verify that was engine 104C	Command D102
[07/09/14 16:30:40]	E104 FF C Alarm Cleared	
[07/09/14 16:30:51]	RIT103 to command we've got the firefighter on the back balcony but we need a hand line back here for protection from this one roof.	RIT 103 E103A
[07/09/14 16:31:01]	E104 FF C Motion Alarm	
	211 Fire, Rescue truck 42 Mistletoe Lane near Forest Cove Drive (G Map 336 F Foxtrot AA4)	Recorder
[07/09/14 16:31:11]	Command can we get him down with a ladder?	Command D102
16:31 hrs.	211 Fire 1400 Mistletoe Lane, district 102. Repeat 211 fire 1400 Mistletoe Lane, district 102. Time 16:31 Note: Approx. 30 minutes elapsed since initial dispatch Benchmark time: 16:01-16:31 hrs.	Dispatcher
	District 102B to the medic unit. Report to C Charlie side with your stretcher.	District 102B
	211 Mistletoe Lane near Forest Cove Drive (G Map 336 F Plaza AA4)	Recorder
	Alpha to command be advised Ladder 102 is going to C Charlie side to see if he can gain access back there. Also Engine 102 is going up the second floor with RIT.	Alpha
	Command Received	Command
	Accountability 101 Captain are you okay? You're alarmed	
	101 PAR okay we got the fire knocked down on the first story, we got good visible fire in between the floor, first and second floor we're trying to hit it we still need pike poles	101
	Alpha calling RIT, have you made it to the firefighter?	Alpha
	RIT 103, yes, we're pulling him out on the back balcony now.	RIT 103
	Ladder 102 we need a stretcher around on the back side, we have the firefighter on the ground.	Ladder 102
	Received. You're verifying that you have firefighter 104c and he's on the ground.	Command

	We have an unconscious firefighter on the ground. I'm not sure who he is at this point.	Ladder 102
	Accountability to 102B are you okay?	Accountability
	Ladder 102 yes. Firefighter is down. We need a medic immediately	Ladder 102
	They're on their way.	Command
	Accountability to firefighter, 104 Captain are you okay?	Accountability
	104A is okay.	
	Ladder 102, we have begun CPR	Ladder 102
	Command Received	Command
	Accountability to 104B. Are you okay?	Accountability
	Engine 102A to fire command I have... I cannot find firefighter C of 102	Engine 102A
	Engine 102 Repeat	Command
	Accountability to ladder 102B, you're alarmed. Are you okay?	Accountability
	102B is okay.	
	Engine 56 is on location, staged behind District 102	Engine 56
	Received Engine 56. Command to Alpha, Command to Alpha. District 64	Command
	Go head command.	Alpha
	Do we need to go defensive?	Command
	Command yes at this time. We don't have enough crews available to try to make any headway on the interior. Looks like it's intensifying faster than we can keep up with it so I think defensive mode is a good idea.	Alpha
	????????????????????????????????	
	Send you 15 Repeat	Dispatcher
	Command Received	Command
	Command Ladder 101, Engine 102	Command
	????????????????????	
	Ladder 101 received defensive	Ladder 101
	Received. Send you 15	Dispatcher
	Command engine 102	Command
	Mistletoe command, are we going defensive?	
	Mistletoe command, yes	Command
	Accountability to engine 63 captain, are you okay? You're alarmed.	Accountability
	Engine 63 has a PAR	

	Mistletoe command to engine 102	Command
	Accountability to 103 are you okay?	Accountability
	Engine 103, yea	Engine 103
	103 yes, 103 is okay, he didn't have his airpack	
	Command to engine 102, Engine 56 works command post	Command
	??	
	OEC to Mistletoe command	OEC
	Command to ladder 102, give me a PAR	Command
	Accountability to 102C, are you okay?	Accountability
	Ladder 102 has PAR	Ladder 102
	Command to engine 102	Command
	Ladder 64 is on location	Ladder 64
	Command to engine 103, give me a PAR	Command
	Engine 103 is a PAR	Engine 103
	Ladder 101 give me a PAR	Command
	Ladder 101 PAR okay. Ladder 101D bring us 3 bottles	Ladder 101
	Command to engine 102	Command
	OEC calling Mistletoe command	OEC
	Command go ahead	Command
	Mistletoe command would it be beneficial for me to do the long tone and have all the E/Os sound their air horns or have you handled it with the electronic accountability?	OEC
	Ladder 64 is on location staged	Ladder 64
	Mistletoe command do you want me to long tone to give the order to go defensive, all companies pull out of structure?	OEC
	Accountability 103B, acknowledge	Accountability
	Engine 103B, we have a PAR for	Engine 103B
	Ladder 64 report to Alpha	Command
	Ladder 64 received. Report to Alpha	Ladder 64
	OEC to Mistletoe command: did you want OEC to long tone and have all companies exit the structure or do you have it under control?	OEC
	Command I have it under control	Command
	Mistletoe Command you also have a formal PAR due whenever you can get to it	OEC

	Received	Command
	Alpha to command: I got a PAR on Engine 102, Ladder 101 and Engine 56	Alpha
	Received. I have a complete PAR at this time Mistletoe command to OEC I have a PAR	Command
16:42	Received all personnel accounted for, PAR complete 16:42	OEC
	Command yes	Command
	Engine 64 is on location staged	Engine 64
	Engine 64 report to Alpha	Command
	Alpha received	Engine 64
	Alpha to Engine 64 and Ladder 64 meet in the Alpha front side and work from Engine 56 from a defensive posture	Alpha
	Ladder 64 Received	Ladder 64
	District 34 on location	District 34
	District 34 report to command post	Command
	????????????????????????????????????	
	Command receive PAR is complete	Command
	Alpha to command: I went back to the Charlie side if we can get some crews back there with some lines might have to stretch them part the way we're gonna need some lines back there. Right now I got all the crews I need on the Alpha side.	Alpha
	Command Received	Command
	Engine 65 staged	Engine 65
	Engine 65 report to District 102	Command
	Engine 65 received	Engine 65
	Accountability to ladder 101 firefighter C are you okay?	Accountability
	Ladder 101, firefighter C okay	Ladder 101
	Accountability to 102 A B and C are you okay?	Accountability
	District 102B to accountability Engine 102A, B and C are _____	District 102B
	Clear	
	Safety 30 on scene	Safety 30
	Ambulance 56 at the hospital	Ambulance 56
	_____What's the numbers on Mistletoe?	
	_____ can you go to OEC 1 and obtain the information?	

	Medic 43 on location	Medic 43
	Ladder 74 is on location staged	Ladder 74
	Ladder 74 report to the Charlie division district 34	Command
	Received Charlie Division	Ladder 74
	Command to Charlie you've got Ladder 74 also	Command
	Accountability to Ladder 102B are you okay?	
	Ladder 102B is good	Ladder 102B
	Command to Charlie	Command
	Charlie go ahead	Charlie
	I'm assigning you ladder 74 also	Command
	Received I've got a hand line stretched back here now, looks like I'm gonna have probably 2 hand lines????????	Charlie
	Command Received	Command
	OEC calling 1100 can you come up on NE Tac 5, 1100 can you come up on NE 5?	OEC
	Engine 104 shut that apartment lay down, shut the apartment lay down?	Engine 104
	Charlie we got the apartment lay under control	Charlie
	104 Received	Engine 104
	Charlie calling command I got a line working in the delta right now. We're about to get water hooked up to the Charlie	Charlie
	Command Received	Command
	Alpha, Do you need more companies?	Command
	Engine 105 on location	Engine 105
	Command to Alpha do you need another company?	Command
	6030 to command	6030
	Go ahead 6030	Command
	6030 to command you're gonna need to set up a division on the C side. Got a few companies over here under the direction of the chief	6030
	Command Received. District 34 Charlie setting it up at this time	Command
	Ladder 101 is available for assignment	
	Charlie calling command. I hear several alarms going off back here. Have you checked the PAR lately?	Charlie
	Accountability to 102 Captain, you're an alarm	Accountability
	Did you say Engine 102 Captain	

	Ladder 64D to Ladder 64 We can stretch a 4" from engine 102 to ladder 102 if we need to	Ladder 64D
	Alpha to command Gonna use ladder 101	Alpha
	Command Received	Command
	Charlie calling command, we have several TPass going off. They are unattended AirPacks on the second floor look like when they brought the firefighter down they're still up on the second floor	Charlie
	A second firefighter down on the second floor	Command
	Charlie No, we have some Firefighter TPass that's going off. They're just TPass, they're just AirPacs laying up on top. I guess they left them up there when they brought the firefighter down. Gonna see if I can get somebody up in there to turn them off	Charlie
	Command Received	Command
	District 45 on location	District 45
	???????????????? on scene	
	District 45 can you _____ OEC when you have convenience	
	Clear	
	Command calling Charlie do you need another company?	Command
	Charlie no not at this time	Charlie
	Command calling Alpha do you need another company?	Command
	Alpha to command I got ladder 101 assisting ____54 and establishing water on ladder 102	Alpha
	Command Received	Command
	Do we have a RIT team?	Command
	Alpha no, I do not have a RIT team on the Alpha side at this time	Alpha
	Engine 105 report to Alpha, assume RIT duty	Command
	Engine 105 received. RIT duty	Engine 105
	Ladder 102A to Ladder 102D report to Ladder 102	Ladder 102A
	Engine 104D to Command I'm going to need another supply line for my pumper	Engine 104D
	Medic 63 on location	Medic 63
	_____23 on location	
	Charlie calling command, I have 2 1/2 blowing back here on Charlie I've got a 1 ^{3/4} " back here we're fixing to go to the balcony on the second floor Charlie side we got fire through the roof we're gonna try to pull those ceilings from the outside and knock that fire down.	Charlie
	Command Received	Command

	Accountability calling engine 56B, are you okay?	
	Engine 56 to accountability, we have PAR	Engine 56
	???? 1100 Tac 5 is available if you need to set up for your EMS Units	
	Alpha to command	Alpha
	Command go ahead	Command
	I'm gonna have water on this ladder pipe in about a minute. Do I have clearance to flow water?	Alpha
	Don't flow water yet, I got Charlie back there with 3 crews	Command
	Charlie calling command, you fixing to get the ladder pipe set up	Charlie
	Command to Charlie will the ladder pipe do you some good back there?	Command
	Man yea, I can see the tip of it, looks like it might, let me clear some crews right quick before you turn it on.	Charlie
	Command Received	Command
	Command calling to Ladder 74 Looks like they're fixing to put the pipe up so let's come on and come down	Command
	Charlie calling command, hold off on that ladder pipe just a second, looks like we're making a little head way on that fire in the attic, just give me a minute	Charlie
	Command received. Command to Ladder 102 do not flow water.	Command
	Charlie calling command, I said do not flow water, do not flow water just yet	Charlie
	Command to Charlie, that's what I was telling him. Do not flow water, no water	Command
	Ladder ??? Alpha division is confirmed. We are not flowing water on the pipe	Alpha
	Charlie calling Ladder 74, you guys, y'all look like y'all hitting it. Y'all making head way?	Charlie
	Charlie calling Ladder 74 are y'all making head way? Hitting water on the fire	Charlie
	Ladder 74 yes	Ladder 74
	Charlie calling 74, looks like y'all were knocking it down for a second but it's starting to come back through the roof. Y'all still putting water on it	Charlie
	District 45 to command Bravo is clear, I'm gonna taking over Delta division	District 45
	Command Received	Command
	Ladder 15 calling District 45	Ladder 15
	District 45	District 45
	District 45 take Charlie, command calling Charlie Division	Ladder 15

	Charlie Go ahead	Charlie
	Report to the ??? I need you to take ?????	Ladder 15
	Charlie Received	Charlie
	Ambulance 64 on location	Ambulance 64
	Charlie calling crews working in Charlie, District 34 is going to be going to the command post, District 45 is gonna take over Charlie	Charlie
	Accountability to Engine 56 Captain. Are you okay?	
	Engine 56 to accountability we have a PAR	Engine 56
	???????? Calling command	
	Are we offensive or defensive?	
	Command calling Charlie division if those crews on the second floor and not making any head way on that go ahead and back them out	Command
	Charlie received	Charlie
	Charlie division to command I'm gonna need a RIT team back over here	Charlie
	Command calling Charlie if those crews aren't making any head way back there by that door, go ahead and pull them out	Command
	They are making head way but I need a RIT team back over here	Charlie
	Command calling Charlie, I'll send you Rescue 42, be the RIT team for Charlie	Command
	Charlie received Rescue 42	Charlie
	Alpha to command, be advised we do have Ladder 102 still ready to go if you determine you wanna flow water from this pipe.	Alpha
	????????? can you switch over to Tac 5 ????? go to Tac 5	
	Supervisor 30 to Rehab 17	Supervisor 30
	Rehab 17	Rehab 17
	Yes sir, what's your EPA?	Supervisor 30
	We're on location now	Rehab 17
	OEC calling command we have an all clear on the primary search	OEC
	Command calling OEC are you asking if we have it all clear or is somebody reported?	Command
	Safety 30 inquiring. Do we have an all clear on primary search?	OEC
	Command calling OEC, no we do not have it all clear, we went defensive	Command
	???????????? Tac 5????????????Tac 5	
	????????????on location	
	Command calling Charlie, give me an update	Command

	We have 17 ???????? Tac 5, we have 17 Tac 5	
	Command calling Charlie, you making any progress on that second floor?	Command
	Yes we are	Charlie
	Alpha to command	Alpha
	Command go ahead	Command
	Be advised, we're still working from a defensive posture from the alpha side 4" line from the exterior I understand we have crews on the inside on the Charlie side	Alpha
	Command calling Alpha, they're just right on the second floor balcony right at the door I feel like fire is gonna break through I think I'm gonna pull them out we may flow that pipe for a minute.	Command
	That's received. You want me to keep my crews on the exterior correct?	Alpha
	Command yes. Command calling Charlie, go ahead and pull your crews out, we're gonna flow the pipe for a minute and see if we can knock some of that fire down.	Command
	Charlie Received Ladder 74 and Engine 64 come out	Charlie
	Alpha to command I'm gonna stand by until you give me clear to flow water.	Alpha
	Command calling alpha. Hold off on the water until I confirm from Charlie that everybody is out	Command
	Alpha received	Alpha
	Charlie to command everybody's out	Charlie
	Command received. Command to all companies on scene we're fixing to start flowing ladder pipe all companies stand clear. Command calling Ladder 102, flow water when ready.	Command
	Mistletoe command you have a PAR due again	OEC
	Command received. All crews stand by for electronic PAR	Command
	Engine 65 pulling out	Engine 65
	Accountability to Engine.....	Accountability
	???? gas and electricity	
	Yes ??? has been notified	
	Command calling accountability. Give me an electronic PAR to all companies	Command
	Accountability to 74 captain are you okay?	Accountability
	???????????????? can you come up on Tac 5	
	Ladder 74A yes	Ladder 74A
	Accountability to command. Electronic accountability sent and received	Accountability

	???????????????? can you come up on Tac 5	
	Command calling OEC we have completed electronic accountability all personnel accounted for	Command
17:50	Received all personnel accounted for just continue the PAR 17:50	OEC
	Ladder 102 to command we have firefighters on the roof	Ladder 102
	Ladder 74D come around to C	
	????????????????	
	Command calling to Alpha is that string doing any good?	Command
	Alpha yes	Alpha
	Ladder 101 to command	Ladder 101
	Ladder 102 the nozzle is stuck. We're gonna shut it down for a second, try to get it unstuck and start it back up.	Ladder 101
	Command received	Command
	Alpha to Ladder 74 Delta meet me at Alpha	Alpha
	Command calling Charlie we have Ladder 5 shut down right now ???????????????? and I'll let you know before we start flowing water	Command
	Charlie Received	Charlie
	Command calling Charlie we are still defensive, don't let anybody in	Command
	Ladder pipe nozzle is still stuck, we're gonna bring it down to the ground. We'll let you know what we come up with	
	Let me know if we need to swap ladders. We can get another ladder in front of you and ????????	
	Ladder 101 Received	Ladder 101
	Alpha calling Ladder 74 Delta	Alpha
	Ladder 74 Delta go ahead	Ladder 74
	Your crew needs a TPass ??? on the Charlie Side	Alpha
	74 Delta received. TPass ???? on the Delta side	Ladder 74
	Charlie division to command, I'm gonna go ahead and send a crew in on the second floor	Charlie
	Charlie negative, do not send anybody on the second floor, ?????? your screen	Command
	Ladder 102 to command, they just gave us water. We're flowing water again. Ladder 102 to command, we're flowing water again	Ladder 102
	Command calling Charlie, we got water flowing again through the pipes. All companies water is flowing through the pipes. Y'all stand by	Command
	Charlie Received	Charlie
	Accountability calling Ladder 74 captain are you okay?	Accountability

	74 captain is accountable	Ladder 74
	Mistletoe command calling OEC you can signal 71 holding all company	Command
17:22	71 the 2 alarm fire at 1400 Mistletoe. Holding all companies at this time. This is a tap out. The time is 17:22	